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Digital future of Europe: digital single market and use of AI for European consumers

European Parliament resolution of 20 May 2021 on shaping the digital future of Europe: removing barriers to the functioning of the digital single market and improving the use of AI for European consumers (2020/2216(INI))

(2022/C 15/22)

The European Parliament,

— having regard to the Commission communication of 19 February 2020 entitled 'Shaping Europe's digital future' (COM(2020)0067),

— having regard to the Commission white paper of 19 February 2020 entitled 'Artificial Intelligence — a European approach to excellence and trust' (COM(2020)0065),

— having regard to the Commission report of 19 February 2020 entitled 'the safety and liability implications of Artificial Intelligence, the Internet of Things and robotics' (COM(2020)0064),

— having regard to the Commission communication of 10 March 2020 entitled 'Identifying and addressing barriers to the Single Market' (COM(2020)0093),

— having regard to the Commission communication of 10 March 2020 entitled 'Long term action plan for better implementation and enforcement of single market rules' (COM(2020)0094),

— having regard to the Commission communication of 13 November 2020 entitled 'New Consumer Agenda — Strengthening consumer resilience for sustainable recovery' (COM(2020)0696),

— having regard to the Commission communication of 25 April 2018 entitled 'Artificial Intelligence for Europe' (COM(2018)0237),

— having regard to the working paper entitled 'Shaping the digital transformation in Europe' of February 2020, drawn up by McKinsey & Company for the Commission ([1]),

— having regard to the Digital Economy and Society Index (DESI) reports of 2020 and to the Special Eurobarometer results 'Attitudes towards the impact of digitalisation on daily lives' ([2]),

— having regard to Council conclusions of 9 June 2020 on shaping Europe's digital future,

— having regard to the Commission communication of 19 February 2020 entitled 'A European Data Strategy' (COM(2020)0066),

— having regard to Directive 2000/31/EC of the European Parliament and of the Council of 8 June 2000 on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market ('Directive on electronic commerce') ([3]),

— having regard to Directive 2001/95/EC of the European Parliament and of the Council of 3 December 2001 on general product safety ([4]),

([1]) https://ec.europa.eu/newsroom/dae/document.cfm?doc_id=64962
([2]) https://europa.eu/eurobarometer/surveys/detail/2228
([3]) OJ L 178, 17.7.2000, p. 1.
([4]) OJ L 11, 15.1.2002, p. 4.

— 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 (Directive on privacy and electronic communications) ([5]),

— having regard to Directive 2005/29/EC of the European Parliament and of the Council of 11 May 2005 concerning unfair business-to-consumer commercial practices in the internal market and amending Council Directive 84/450/EEC, Directives 97/7/EC, 98/27/EC and 2002/65/EC of the European Parliament and of the Council and Regulation (EC) No 2006/2004 of the European Parliament and of the Council ('Unfair Commercial Practices Directive') ([6]),

— having regard to Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on services in the internal market ([7]),

— having regard to Directive 2011/83/EU of the European Parliament and of the Council of 25 October 2011 on consumer rights, amending Council Directive 93/13/EEC and Directive 1999/44/EC of the European Parliament and of the Council and repealing Council Directive 85/577/EEC and Directive 97/7/EC of the European Parliament and of the Council ([8]),

— 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 (General Data Protection Regulation) ([9]),

— having regard to its resolution of 19 January 2016 on Towards a Digital Single Market Act ([10]),

— having regard to Regulation (EU) 2018/302 of the European Parliament and of the Council of 28 February 2018 on addressing unjustified geo-blocking and other forms of discrimination based on customers' nationality, place of residence or place of establishment within the internal market and amending Regulations (EC) No 2006/2004 and (EU) 2017/2394 and Directive 2009/22/EC ([11]),

— having regard to Regulation (EU) 2018/1724 of the European Parliament and of the Council of 2 October 2018 establishing a single digital gateway to provide access to information, to procedures and to assistance and problem-solving services and amending Regulation (EU) No 1024/2012 ([12]),

— having regard to Directive (EU) 2019/2161 of the European Parliament and of the Council of 27 November 2019 amending Council Directive 93/13/EEC and Directives 98/6/EC, 2005/29/EC, and 2011/83/EU of the European Parliament and of the Council as regards the better enforcement and modernisation of Union Consumer protection rules ([13]),

— having regard to Directive (EU) 2019/882 of the European Parliament and of the Council of 17 April 2019 on the accessibility requirements for products and services ([14]),

— having regard to 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 ([15]),

— having regard to Regulation (EU) 2019/1150 of the European Parliament and of the Council of 20 June 2019 on promoting fairness and transparency for business users of online intermediation services ([16]),

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([5]) OJ L 201, 31.7.2002, p. 37.
([6]) OJ L 149, 11.6.2005, p. 22.
([7]) OJ L 376, 27.12.2006, p. 36.
([8]) OJ L 304, 22.11.2011, p. 64.
([9]) OJ L 119, 4.5.2016, p. 1.
([10]) OJ C 11, 12.1.2018, p. 55.
([11]) OJ L 60 I, 2.3.2018, p. 1.
([12]) OJ L 295, 21.11.2018, p. 1.
([13]) OJ L 328, 18.12.2019, p. 7.
([14]) OJ L 151, 7.6.2019, p. 70.
([15]) OJ L 130, 17.5.2019, p. 92.
([16]) OJ L 186, 11.7.2019, p. 57.

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— having regard to its resolution of 12 February 2020 on automated decision-making processes: ensuring consumer protection and free movement of goods and services ([17]),

— having regard to its resolution of 20 October 2020 with recommendations to the Commission on the Digital Services Act: Improving the functioning of the Single Market ([18]),

— having regard to its resolution of 20 October 2020 on intellectual property rights for the development of artificial intelligence technologies ([19]),

— having regard to its resolution of 20 October 2020 with recommendations to the Commission on a framework of ethical aspects of artificial intelligence, robotics and related technologies ([20]),

— having regard to its resolution of 20 October 2020 with recommendations to the Commission on a civil liability regime for artificial intelligence ([21]),

— having regard to its resolution of 20 January 2021 on strengthening the single market: the future of free movement of services ([22]),

— having regard to Rule 54 of its Rules of Procedure,

— having regard to the opinions of the Committee on International Trade, the Committee on Industry, Research and Energy, the Committee on Transport and Tourism, the Committee on Culture and Education, the Committee on Legal Affairs, the Committee on Civil Liberties, Justice and Home Affairs, the Committee on Employment and Social Affairs, the Committee on Agriculture and Rural Development and the Committee on Women's Rights and Gender Equality,

— having regard to the report of the Committee on the Internal Market and Consumer Protection (A9-0149/2021),

A. whereas barriers in the digital single market still exist and they have to be removed in order to realise its full potential, and whereas a common human centric EU approach is essential for its success;

B. whereas digitalisation has the potential to add significant value to the single market as a whole, and is important for both European consumers as well as traditional and non-traditional sectors and can be a competitive advantage on the global market;

C. whereas the digital single market presents different challenges to traditional markets, the principle 'what is illegal offline is illegal online' should be respected;

D. whereas AI is, to a certain extent, already subject to existing legislative requirements;

E. whereas there is a need to build public trust in AI by including by default the full respect of fundamental rights, consumer protection, data protection and security and fostering innovation in Europe;

F. whereas the White Paper on Artificial Intelligence recognised agriculture as one of the sectors in which AI can increase efficiency and one of the general objectives of the future common agricultural policy (CAP) is to promote smart farming; whereas AI research and work in the field of agriculture and animal husbandry has the potential to increase the attractiveness of the sector for younger people and to improve agricultural performance in areas with natural constraints, as well as animal welfare and productivity; whereas the farm to fork strategy and the biodiversity strategy set out to help farmers to cultivate quality produce and reduce nutrient losses and the use of pesticides and fertilisers by 2030;

G. whereas the digital transition requires increased investment in key enablers of the digital economy and coordination with Green transition policies;

([17]) Texts adopted, P9_TA(2020)0032.
([18]) Texts adopted, P9_TA(2020)0272.
([19]) Texts adopted, P9_TA(2020)0277.
([20]) Texts adopted, P9_TA(2020)0275.
([21]) Texts adopted, P9_TA(2020)0276.
([22]) Texts adopted, P9_TA(2021)0007.

H. whereas AI offers many benefits but also presents certain risks;

I. whereas EU Member States and EU institutions have an obligation under the Charter of Fundamental Rights of the European Union and the European Convention on Human Rights to ensure that each person's rights to privacy, data protection, free expression and assembly, non-discrimination, dignity and other fundamental rights are not unduly restricted by the use of new and emerging technologies;

J. whereas the use of AI also poses risks and raises concerns regarding the ethics, scope and transparency of the collection, use and dissemination of personal data;

Part 1: removing barriers to the functioning of the digital single market

1. Believes the EU's digital policy should create and support the key foundations needed for the European public and private sectors to be world leaders in trustworthy, human-centric digital innovation; considers that the digital single market is one such foundation and is about ensuring the full potential of new technologies by removing unjustified national barriers, by establishing legal clarity for consumers and businesses, benefiting for European citizens and strengthening competition; believes that having a better organised and common European approach for market integration and harmonisation can contribute to that result; believes that further actions are needed at both Member State and EU level to achieve this;

2. Stresses the importance of a fully functioning digital single market for the benefit of consumers and enterprises and asks for SMEs to be supported in their digital transformation and expects the Commission to introduce a fitness check for SMEs before proposing legislation;

3. Believes that the EU's approach to digitalisation needs be fully compliant with fundamental rights, consumer protection, technological neutrality, net neutrality and data protection rules, inclusiveness and non-discrimination;

4. Believes that digitalisation and emerging technologies such as AI can contribute to achieving the objectives of the EU Industrial Strategy, Green Deal and to overcome some of the difficulties created by the COVID-19 crisis; further believes that a mutually reinforcing policy approach towards the Green Deal, the Industrial Strategy and digitalisation could help both the realisation of their objectives while also fostering the EU's technological leadership; points out the potential of digital solutions, such as teleworking and AI applications, to support the participation of people with disabilities in the Digital Single Market; considers that the COVID-19 crisis also offers an opportunity to speed up digitalisation, and that the digital transformation must serve the public interest overall; believes that the digital transformation could help to meet the needs of urban, rural and isolated regions in the EU;

5. Notes the potential of new technologies for the transition to a circular and sustainable economy, by facilitating the introduction of circular business models, promoting energy efficiency of data processing and storage systems and contributing to more sustainable value chains and optimising resource use;

6. Calls on the Commission to promote and support the uptake and development of sustainable technology in the realisation of the Green Deal including by assessing the environmental impact of data sharing and the infrastructures required to ensure a sustainable digital deployment;

7. Stresses that enabling sharing and access to essential and well-defined data sets will be key to fully unlock the potential of the Green Deal; calls on the Commission to assess which datasets are essential to that purpose;

8. Believes that practices that undermine consumer rights, data protection and labour rights should be eliminated;

9. Highlights that the Commission should adopt a balanced, future proofed and evidence based approach to legislation based on the subsidiarity principle that creates a digital single market that ensures the provision of public services, is competitive, fair, accessible, technologically neutral, innovation-friendly, consumer-friendly, human-centric and trustworthy, and that builds a secure data society and economy;

10. Underlines that equal conditions should prevail as regards the taxation of the digital economy and the traditional economy, by finding a shared understanding of where value is created;

11. Points out that where relevant SMEs and other economic actors could benefit by using cooperative models such as open source and open software, depending on different situations or context by taking into account the potential advantages, cybersecurity, privacy and data protection and without prejudice to applicable legislation; believes that this can contribute towards achieving European strategic autonomy in digital;

12. Calls on the Commission to keep in line with its guiding principles in its future legislative proposals, and to avoid the fragmentation of the digital single market, remove any existing unjustified barriers and unnecessary administrative requirements, support innovation especially for SMEs, and use the appropriate incentives that create a level playing field, and equal access to investment opportunities;

13. Asks the Commission to ensure an effective and efficient enforcement of both current and any new legislative requirements; believes that enforcement needs to work effectively across borders and across sectors, with greater cooperation between authorities, and with due regard for the expertise and relevant competence of each authority; believes that the Commission should provide a guiding framework to ensure coordination for any new regulatory requirements on AI or related fields;

14. Calls on the Commission to aim at both an innovation and consumer friendly regulatory environment, strengthening the financial and institutional support for the European digital economy in close coordination with Member States and stakeholders through measures such as: investing in education, research and development, supporting innovations in Europe, providing increased and broader access to easily readable and interoperable high quality industrial and public data, building digital infrastructure, increasing the general availability of digital skills within the population, promoting technological leadership for the business environment, and creating a proportionate and harmonised regulatory environment;

15. Considers that smart public procurement, such as European GovTech platform, can play in supporting digital developments across the EU;

16. Considers that substantial investment and public-private cooperation are required in the field of AI and other key new technologies; welcomes the use of EU funding programmes to support the digitalisation of our society and industry insofar as they are based on the principles of efficiency, transparency and inclusiveness; calls for the coordinated implementation of the different funds to maximise the synergies between the programmes; suggests a strategic prioritisation of funds to build the necessary digital infrastructure; calls for NextGenerationEU, as well as public and private funding, to increase investment so as to reflect the EU's ambition of becoming a global technological leader, developing its research and knowledge and reaping the full benefits of digitalisation for all in society;

17. Considers that AI poses a special challenge for SMEs and that unnecessary complex regulatory requirements may disproportionately impact their competitiveness; the transition to AI solutions should help these companies and new legislation on the use of AI should not create unjustified administrative burdens jeopardising their competitiveness in the market;

18. Calls on the Commission to ensure wider coordination of investment in the NextGenerationEU recovery plan; calls on the Commission to propose concrete actions within this plan to support high impact technologies and infrastructure in the EU such as artificial intelligence, high performance computing, quantum computing, cloud infrastructure, platforms, smart cities, 5G and fibre infrastructure;

19. Recalls that SMEs are the backbone of Europe's economy and need special support from EU funding programmes to make the digital transition; calls on the Commission and the Member States to strengthen their support to start-ups and Micro, Small and Medium Enterprises (MSMS), via the Single Market Programme, Digital Innovation Hubs and the Recovery and Resilience Facility, in the development and application of digital technologies, in order to further drive digital transformation and thus enable them to fully develop their digital potential and competitiveness for growth and jobs in Europe;

20. Notes that there is a significant lack of European venture and seed capital, as well as of private equity funding, when compared to other markets; considers that this often leads European start-ups to scale-up in third country markets rather than expanding in the EU; believes that this prevents the wider European economy from gaining as many spill over benefits from ventures originating in Europe; highlights the disproportionately large role of public entities in the innovation and research funding that currently exists and the significant differences in start-up ecosystems and available financing between Member States; calls on the Commission and the Member States to propose a comprehensive European approach to broaden the sources of capital for technological investments in the EU, including initiatives to support angel investing by European private sector leaders, as well as to ensure facilitate the availability of venture and seed capital for European companies and start-ups;

21. Underlines that the Digital Europe programme as well as the Horizon Europe and Connecting Europe programmes are necessary to drive the digital transformation of Europe and should receive adequate funding; urges the Commission to ensure that these programmes are deployed as soon as possible; recalls that the Member States must uphold their commitment under the Europe 2020 strategy to invest 3 % of their GDP in research and development;

22. Calls on the Commission to work to position the EU as leader in the adoption and standardisation process for new technologies, ensuring that AI is human-centric and consistent with European values, fundamental rights and norms; highlights the need to work with standardisation organisations, industry and also with international partners on setting global standards, given the global nature of technology leadership and development; considers the use of CEN Workshops Agreement in specific areas, such as AI and new emerging technologies, as a way to increase efficiency in creating harmonised standards;

23. Supports the Commission's objective to increase the availability and sharing of non-personal data, to strengthen Europe's economy; considers that while fulfilling this objective, risks associated with an increased access to non-personal data such as de-anonymization should be taken into account;

24. Believes that there is a need to incentivise access to more data for SME's and calls for incentives meant to give SMEs access to non-personal data produced by other private stakeholders in a voluntary and mutually benefiting process to comply with all necessary safeguards in line with Regulation (EU) 2016/679 as well as well as legal framework on intellectual property rights;

25. Notes that in the fulfilment of public services or in the course of public procurement contracts public undertakings generate, collect and process a significant amount of non-personal data, that represents a considerable value for its commercial reuse and benefit for society; encourages the Commission and the Member states to make such data more broadly available for the re-use in the general interest, in the furtherance of the objectives of the Open Data Directive;

26. Recalls that we need a data economy that works for the entire EU, as it is a key enabler of digitalisation; considers that a high level of data protection for trustworthy AI, could help improve consumer trust; believes that it is important for the EU to guarantee a high degree of customers' and, where applicable, consumers' control over their data while ensuring the highest standards of protection for personal data, with clear and balanced rules on inter alia intellectual property rights (IPR), but considers it essential to maintain openness towards third countries, and that the free flow of non-personal data across borders is important;

27. Takes note of the Digital Services Act and the Digital Markets Act, and believes that they should contribute to supporting innovation, guaranteeing a high level of consumer protection and the improvement of users' rights, trust and safety online; stresses the need to ensure that European market stays active and highly competitive;

28. Outlines that consumer protection should play an important role in the Digital Services Act and is convinced that stronger transparency and due diligence for online marketplaces would enhance the safety of products and therefore strengthen the trust of consumers in online marketplaces;

29. Highlights, therefore, that clear responsibilities for online marketplaces based on the principle of proportionality are needed; outlines that the responsibility of content-hosting platforms for goods sold or advertised on them should be clarified in order for close the legal gap in which the buyers failed to obtain the satisfaction to which they are entitled according to the law or the contract for the supply of goods for example because of the inability to identify the primary seller, for example, the Know Your Business Customer principle;

30. Welcomes the New Consumer Agenda proposed by the Commission, and encourages the Commission to update consumer protection legislation, where appropriate, to take better account of the impact of new technologies and potential consumer harm, especially for the most vulnerable groups and considering the impact of the COVID-19 pandemic; considers that European consumers should be empowered to play an active role in the digital transition and that consumer trust and the adoption of digital technologies depends on their rights being protected in all circumstances;

31. Recalls that the unjustified geo-blocking of online services constitutes a significant barrier to the Single Market, and an unjustified discrimination between European consumers; notes the Commission's first short-term review of the Geo-blocking Regulation and urges the Commission to continue its assessment, and to engage in stakeholder dialogue taking into account the increasing demand for cross-border access to audiovisual services with a view to fostering circulation of quality content across the EU;

32. Reiterates the EU fundamental rights to privacy, and protection of personal data including among others, the explicit informed consent as enshrined in the GDPR Regulation; points out that consent should be based on understandable and easily accessible information on how the personal data will be used and processed and that this should also be respected then using algorithms;

33. Welcomes the New EU's Cybersecurity Strategy for the Digital Decade, which is indispensable to secure citizens' trust and fully benefit from innovation, connectivity and automation in the digital transformation, while safeguarding fundamental rights, and calls for the effective and speedy implementation of the measures outlined;

34. Calls on the Member States to implement without delay the European Accessibility Act, in order to effectively remove barriers for citizens with disabilities and ensure the availability of accessible digital services, as well as the suitability of the conditions under which they are provided, with the objective of achieving a fully inclusive and accessible Digital Single Market that ensures the equal treatment and the inclusion of people with disabilities; encourages the Member States to extend the application of the Directive on the accessibility of the websites and mobile applications of public sector bodies to areas that are open for public use, especially in the health, transport, postal or telecommunications sector ([23]);

Part 2: improving the use of AI for European consumers

35. Strongly believes that AI, if developed in accordance with the applicable legislation, has the potential to improve certain areas for European citizens, and offer significant benefits and value for the economy, safety, security, education, healthcare, transport and the environment; believes the safety, security, inclusiveness, non-discrimination, accessibility and fairness, especially for groups of consumers considered to be in vulnerable situations, of AI-driven products and services need to be ensured so that no-one is left behind and their benefits should be available across society;

36. Recognises that in order to benefit from AI, the Commission, the Member States, the private sector, civil society and the scientific community all need to collaborate effectively to create an ecosystem for safe human-centric AI that will benefit the whole society;

37. Notes that while AI offers good potential, it can also present certain high risks due to issues such as bias and opacity; believes that these risks can manifest themselves depending on the specific context and use-cases of AI; calls for the traceability processes of AI-based systems to be transparent and capable of being reviewed in the event of demonstrated serious harm;

([23]) Directive (EU) 2016/2102 of the European Parliament and of the Council of 26 October 2016 on the accessibility of the websites and mobile applications of public sector bodies (OJ L 327, 2.12.2016, p. 1), Recital 34.

38. Considers that aside from some of the barriers to the development, adoption and effective regulation of digital technologies in the EU, a lack of consumer trust and confidence can hold back the widespread adoption of AI; draws attention to the lack of citizens' understanding of the processes by which advanced algorithmic and artificial intelligence systems make decisions;

39. Notes that consumers need a clear and predictable legal framework in case of product malfunction;

40. Calls on the Commission and the Member States to continuously improve the part of the public administration that will be responsible for implementing future legislation on AI;

41. Welcomes the Commission's white paper on AI, and calls on the Commission to develop a common EU regulatory framework for AI that is human-centric, risk-based, clear and future-proof; believes this is needed to oversee automated decision making systems and that this should complement existing legislation relevant to AI and ensure it is proportionate according to the level of risk;

42. Stresses the need to ensure that there is an adequate degree of human control over algorithmic decision making and that proper and effective redress mechanisms are in place;

43. Stresses the importance of empowering consumers with basic training and skills on AI that would allow them to benefit more from these technologies and, at the same time, protect themselves from any possible threats;

44. Notes that, while to varying degrees, AI is already subject to current European legislation, AI raises new, so far unresolved, legal questions that affect consumers and thus calls on the Commission to issue clear guidance on the functioning and synergy between any current applicable legislation and any proposed new measures in order to fill the existing legal gaps and to achieve a proportionate and consistent legal framework; considers cooperation between Member States to be important to strengthen the digital single market;

45. Calls on the Commission and the Member States to ensure close cooperation when enforcing the regulatory framework in order to prevent a fragmented Single Market;

46. Considers that AI is a fast moving technology that requires effective legislation not only guidelines, based on principles and proportionality; believes that to achieve this AI needs to be broadly defined so that any regulatory measures across different sectors can remain flexible and adaptable in order to take into account future developments, and adequately address the different risk levels of AI-uses to be further defined within the sectorial frameworks; Believes that the future regulation needs to adequately reflect the degree to which the perceived risks of AI arise in practice in the varying ways AI is used and deployed;

47. Points out that the use of self-learning algorithms enables businesses to gain a comprehensive insight about consumer's personal circumstances and behaviour patterns; thus calls on the Commission to comprehensively regulate AI technologies in order to prevent an unfair or abusive use of such systems;

48. Believes that the objective of a regulatory framework for AI should be to create an internal market for trustworthy and safe AI-enabled products, applications and services, and that this should be based on Article 114 the Treaty on the Functioning of the European Union;

49. Underlines the consumers right to be adequately informed in a timely and easily-accessible manner about the existence and possible outcome of AI systems, and about how the system's decisions can be checked, meaningfully contested and corrected;

50. Calls for a mandatory information provision to indicate whether consumers are interacting with AI systems;

51. Believes that explicability and transparency is crucial for building and maintaining users' trust in AI systems; considers that this means that processes need to be transparent, the capabilities and purpose of AI systems openly communicated, and decisions explainable to those directly affected;

52. Believes the regulatory framework needs to support the development of trustworthy AI systems and should ensure high consumer protection standards in order to strengthen consumer's confidence in AI enabled products; considers that a more gradual establishment of risks and corresponding legal requirements and safeguards against consumer harm are needed; believes also that the regulatory framework should ensure transparency, accountability and provide for clear communication of the relevant requirements to both consumers and regulatory authorities, and incentivise AI developers and deployers proactively to adopt trustworthy AI;

53. Calls on the Commission to promote the exchange of information related to algorithmic systems between the Member States' authorities and to support the development of a common understanding of algorithmic systems in the Single Market by issuing guidance, opinions and expertise;

54. Believes that such a framework should be based on an ethical, human-centric, fundamental rights based approach throughout the design, development and life cycle of AI products based on the preservation of fundamental rights and the principles of transparency, explainability (when relevant), accountability and the rights, obligations of the GDPR — including data minimisation, purpose limitation and data protection by design and by default;

55. Believes that the scope of new regulatory requirements should be scaled so that AI applications in their specific context which are deemed to pose the highest risk are subject to the most stringent regulatory requirements and controls, including the possibility to prohibit harmful or discriminatory practices; calls on the Commission to develop an objective methodology for calculating the risk of harm, in addition to what already by exists in current consumer legislation; believes that such a methodology should avoid a restrictive, binary approach that could quickly become obsolete, and instead focus on the context, application and specific use of AI;

56. Stresses that EU-wide AI standardisation should foster innovation and interoperability, as well as guarantee a high level of consumer protection; acknowledges that, while a significant number of standards already exist, further promotion and development of common standards, such as those applicable to component parts and full applications, for AI is necessary;

57. Considers that once clear legal rules and enforcement mechanisms are in place, the role of a voluntary trustworthy label could be considered for AI, while at the same time it is important to bear in mind that the information asymmetry inherent to algorithmic learning systems, makes the role of labelling schemes very complex; considers that such a label could improve transparency of AI-based technology; underlines that any such labelling scheme must be understandable for consumers and be shown to provide a measurable benefit in consumer awareness with compliant AI applications, empowering them to make an informed choice, otherwise it will not achieve a sufficient level of adoption in real-world use;

58. Strongly believes that new regulatory requirements and assessments must be both understandable and implementable, and should be incorporated into existing sector specific requirements where possible and keep administrative burdens proportionate;

59. Calls on the Commission and the Member States to make use of innovative regulatory tools such as 'regulatory sandboxes' consistent with the precautionary principle, to help provide a clear path to scale-up for start-ups and small companies; believes that these tools should help encourage innovation if applied in a controlled environment; points out that creating a coherent environment for innovative testing and validating products based on technologies such as AI will help European businesses to overcome the fragmentation of the Single Market and to take advantage of the growth potential throughout the EU;

60. Points out that the most efficient way of reducing bias is to ensure the quality of the data sets used to train AI systems;

61. Believes that the use of AI in a high-risk context should be limited to specific purposes, in full respect of the applicable law and subject to transparency obligations; underlines that only a clear and legally certain legislative framework will be decisive for ensuring safety and security, data and consumer protection, public trust and support for the necessity and proportionality of the deployment of such technologies; calls on the Commission to carefully consider whether there are certain use cases, situations or practices for which specific technical standards, including underlying algorithms, should be adopted; deems necessary, should such technical standards be adopted, that these are regularly reviewed by competent authorities and re-evaluated, given the fast pace of technological development;

62. Believes that the establishment of review boards for AI products and services by organisations and businesses to assess the potential benefits and potential harm, notably the potential social impact, stemming from high-risk, impactful AI-based projects can be a useful tool to help organisations make responsible decisions about AI products and services, particularly when they include relevant stakeholders;

63. Highlights the importance of education and research for AI; underlines that EU has to build up its digital capacities, by encouraging more people to pursue careers in ICT-related sectors, by training more data professionals in the field of AI, as well as professionals in connected new domains such as AI-investing and AI safety; Calls for substantial investment in the European Network of Artificial Intelligence Excellence Centres and the creation of pan-European university and research networks focused on AI; believes that this network should help to strengthen the exchange of knowledge on AI, support AI related talent within the EU and attract new talent, foster the cooperation between innovative companies, higher education, research institutions and AI developers as well as provide specialised training and development for regulatory authorities, with the aim of ensuring the proper use of these technologies and protecting European citizens from potential risks and damages to their fundamental rights; furthermore stresses the importance of measures and information channels to help small and medium-sized enterprises and start-ups to effectively digitise and advance into 'industry 5.0'; recognises that sharing and reusing AI application components increases the use and uptake of AI solutions; highlights the importance of fundamental research into the foundations of AI; emphasises the need to allow comprehensive research into all AI applications and technologies;

64. Calls for impact assessments on the consequences of digital divide on people and concrete action how to bridge it; calls for mitigation of negative impact through education, reskilling and upskilling; underlines that the gender dimension needs to be taken into account, given the insufficient representation of women in STEM and digital companies; believes that particular attention should be paid to AI literacy programmes;

65. Calls on the Commission to update the existing product safety and liability framework in order to address new challenges posed by emerging digital technologies such as artificial intelligence; and urges the Commission to update inter alia the General Product Safety Directive and the Product Liability Directive, in particular by considering reversing the concept of 'burden of proof' for harm caused by emerging digital technologies, in clearly defined cases and after a proper assessment, and adapting the terms 'product', 'damage' and 'defect' so that they reflect the complexity of emerging technologies, including products with AI, IoT and robotics embedded in them, standalone software and software or updates which entail substantial modification to the product leading to a de facto new product;

66. Stresses that adequate connectivity should be developed for the implementation of AI, as well as any new technology, including in regions facing demographic or economic challenges; calls for the unequal access to technology in rural areas to be taken into account in particular when Union funds are used for the deployment of 5G networks, to reduce blank spots, and for connectivity infrastructures in general; calls for an EU communication strategy that provides EU citizens with reliable information, as well as for awareness-raising campaigns regarding 5G;

67. Calls on the Commission to assess the development and use of distributed ledger technologies including blockchain, namely smart contracts in the digital single market, and to provide guidance and consider developing an appropriate legal framework in order to ensure legal certainty for businesses and consumers, in particular the question of legality, the enforcement of smart contracts in cross-border situations, and notarisation requirements where applicable;

68. Calls for the plurilateral World Trade Organization (WTO) negotiations on e-commerce to be concluded with a balanced outcome; calls on the Commission to carefully assess the impact of the source code clause currently being discussed in the e-commerce negotiations on future EU AI legislation at WTO level, including its impact on consumer rights, and to involve the European Parliament in this assessment; regrets that, in the absence of global rules, EU companies may be faced with non-tariff barriers to digital trade such as unjustified geo-blocking, data localisation and mandatory technology transfer requirements; notes that these barriers are particularly challenging for small and medium-sized enterprises (SMEs); highlights that global rules on digital trade could further increase consumer protection; supports making the WTO moratorium on electronic transmissions permanent and stresses that it is important to provide clarity regarding the definition of electronic transmissions; calls for the WTO Information Technology Agreement, its expansion and the WTO Telecommunications Services Reference Paper to be fully implemented and more widely adopted;

69. Recognises the ambition to make the EU a world leader in the development and application of AI; calls for the EU to work more closely with partners, for instance within the Organisation for Economic Co-operation and Development (OECD) and the WTO, to set global standards for AI in the interest of reducing trade barriers and promoting trustworthy AI in line with the EU's values; supports cooperation on international regulations and other forms of cooperation between OECD countries regarding the digital economy, including the Global Partnership on Artificial Intelligence; encourages the EU to intensify its work with the UN and international standards bodies on this topic; notes the conclusion of the rules-based Asian Regional Comprehensive Economic Partnership (RCEP) agreement, which has paved the way for the largest economic integration project in the world; believes that the EU should promote digital rules that are consistent with democratic principles, human rights and sustainable development; supports, in this regard, the proposal to establish the EU-US Trade and Technology Council;

70. Supports in this regard the work on a transatlantic AI agreement to build stronger and broader consensus on principles of ethical AI and the governance of data and, within the framework of these principles, to foster innovation and the sharing of data to develop AI and help facilitate trade and the development of compatible rules and common standards in digital trade, ensuring a central role for the EU in the setting of those standards; stresses that this transatlantic AI agreement should also have a chapter dedicated to data security and protection of the data of users and consumers in order to ensure the protection of EU rules; calls on the Commission to continue working with the US, Japan and other like-minded partners on reforming the WTO rules on, inter alia, subsidies, forced technology transfers and state-owned enterprises; underlines the importance of EU FTAs in promoting the interests and values of EU companies, consumers and workers in the global digital economy and sees them as being complementary to a competitive digital single market; notes that especially crucial is the cooperation with the United Kingdom, which plays an important role in the global digital economy;

71. Urges the Member States to include in their recovery plans projects for the digitalisation of transport; stresses the need to ensure stable and adequate funding for the process of building transport and ICT infrastructure for intelligent transport systems (ITS), including the secure deployment of 5G, the development of the 6G networks and future wireless networks to allow for the full potential of digitalised transport to unfold while ensuring high transport safety standards; stresses in that regard the need to both develop new infrastructure and upgrade existing infrastructure; calls on the Member States to provide safe, resilient, high-quality transport infrastructures facilitating the deployment of connected and automated mobility services; points out that the upgrading of relevant transport and digital infrastructure in the Trans-European Transport Network (TEN-T) needs to be accelerated; calls, therefore, on the Commission to propose mechanisms in its revision of the TEN-T Regulation and the Rail Freight Corridors Regulation to ensure it;

72. Stresses the enormous potential of AI in the transport sector and its ability to increase automation for road, rail, waterborne and air transport; highlights the role of AI in fostering multimodality and the modal shift as well as the development of smart cities, thus improving the travel experience for all citizens by making transport, logistics and traffic flows more efficient, safer and more environmentally friendly, shortening journey times, reducing congestion, reducing harmful emissions and reducing costs; stresses the enormous potential of systems that use AI in the transport sector in terms of road safety and the achievement of the objectives set out in Vision Zero; stresses that AI will contribute to further developing seamless multimodality, following the concept of Mobility as a Service (MaaS); invites the Commission to explore how to facilitate the balanced development of MaaS, especially in urban areas;

73. Welcomes the achievements of the Single European Sky ATM Research (SESAR) joint undertaking and calls for research and investments to be intensified so as to maximise the potential of AI in the aviation sector with regard to consumers through improvements in airline marketing, sales, distribution, pricing processes as well as in ground handling (safety checks, etc.); notes that AI can develop automated navigation in long and short-sea shipping and on inland waterways and improve maritime surveillance in a context of increasing ship traffic; calls for the deployment of AI and a higher level of digitisation on a large scale in all European ports so as to achieve enhanced efficiency and competitiveness highlights the paramount role that digitalisation, AI and robotics will play in the tourism sector, thus contributing to the sustainability of the industry in the long-run; notes that adequate funding and incentives for tourism establishments is required, particularly for micro, small and medium-sized enterprises, in order to enable them to reap the benefits of digitalisation and modernise their offer to consumers; notes that this will help promoting EU digital leadership in sustainable tourism through R&D, joint ventures and public private partnerships;

74. Recalls that AI may give rise to biases and thus to various forms of discrimination based on sex, race, colour, ethnic or social origin, genetic features, language, religion or belief, political or any other opinion, membership of a national minority, property, birth, disability, age or sexual orientation; recalls, in this regard, that everyone's rights must be fully protected, and that AI initiatives must not be discriminatory in any way; Emphasises that such bias and discrimination can arise from already biased data sets, reflecting current discrimination in society; stresses that AI must avoid bias leading to prohibited discrimination, and must not reproduce discrimination processes; underlines the need to take these risks into account when designing AI technologies, as well as the importance of working with AI technology providers to address persistent loopholes facilitating discrimination; recommends that teams designing and developing AI should reflect the diversity of society;

75. Highlights the importance of algorithms being transparent in order to fully protect fundamental rights; underlines the need for legislators, given the major ethical and legal implications, to consider the complex issue of liability, in particular for damages to persons and property, and that liability in all AI applications should always lie with a natural or legal person;

76. Underlines the need for AI to be made widely available to the cultural and creative sectors and industries (CCSI) across Europe in order to maintain a level playing field and fair competition for all stakeholders and actors in Europe; emphasises the potential of AI technologies for the CCSI, from better audience management, outreach and engagement to assisted content curation, the revalorisation of cultural archives, as well as assisted fact-checking and data journalism; emphasises the need to offer learning and training opportunities in order to enable European society to gain an understanding of the use, potential risks and opportunities of AI; reiterates, in this regard, its view that AI and robotics innovation needs to be integrated in education plans, and training programmes; recalls the special requirements of vocational education and training (VET) with regard to AI and calls for a collaborative approach at European level designed to enhance the potential offered by AI in VET across Europe; emphasises that the transposition of the Audiovisual Media Services Directive ([24]) (AVMSD) into national law is crucial to achieving a genuine digital single market that promotes cultural diversity;

77. Highlights the lack of European venture capital funding, lack of access to finance and lack of data availability, further recognises external and internal barriers for the adoption of AI technologies, especially for less mature sectors and SMEs; calls for a comprehensive approach in the Union, based on promoting entrepreneurship through investor-friendly regulation, to ensure access to finance for promising European start-ups in all growth stages; calls on joint efforts to prevent and discourage exodus of young promising European businesses which often fall short on financing right after entering the market;

78. Recalls that current Union legislation does not provide for mandatory cybersecurity requirements for products and services in general; calls for essential requirements to be included in the design phase (security by design and also for the use of appropriate cybersecurity standards and processes both during the products and services' life cycles and across their supply chains;

79. Points out that the fourth industrial revolution will depend among other things on access to raw materials such as lithium and rare earths, and that the Union needs to reduce its dependence on importing them by limiting absolute consumption and through its own environmentally responsible mining and circular economy; considers that a stronger policy on the circular economy applied to digital devices and semiconductors could contribute at the same time to the Union's industrial sovereignty and to avoiding the negative impact of mining activities linked to raw materials;

80. Calls for a clearer strategy for the European Digital Innovation Hubs in order to promote the widespread uptake of new technologies by SMEs, mid-caps and start-ups; points out that the network of European Digital Innovation Hubs should ensure a broad geographical coverage across Europe, including remote, rural and island areas, as well as initiating cross-sectoral dialogue; calls on the Commission to draw up an ambitious and comprehensive strategy to support the

([24]) Directive (EU) 2018/1808 of the European Parliament and of the Council of 14 November 2018 amending Directive 2010/13/EU on the coordination of certain provisions laid down by law, regulation or administrative action in Member States concerning the provision of audiovisual media services (Audiovisual Media Services Directive) in view of changing market realities (OJ L 303, 28.11.2018, p. 69).

creation and growth of start-ups with the goal of having a new generation of European digital unicorns within 10 years, in particular, the strategy should look at measures such as tax incentives for start-ups and newly founded SMEs and the introduction of an EU Start-up Visa;

81. Welcomes the Commission's new cloud strategy and the European Cloud Initiative;

82. Welcomes the positive impact that AI could have on European labour markets, including job creation, safer and more inclusive workplaces, the fight against discrimination in recruitment and pay, and the promotion of better skill-matching and workflows, provided that risks are mitigated and regulatory frameworks are updated regularly as the digital wave progresses;

83. Calls on the Member States to invest in high-quality, responsive and inclusive education, vocational training and lifelong learning systems, as well as reskilling and upskilling policies for workers in sectors that may be severely affected by AI, including in the field of agriculture and forestry; underlines that special attention must be paid to the inclusion of disadvantaged groups in this regard;

84. Takes note of the skills gap in the European labour markets; welcomes the Commission's updated European Skills Agenda and the new Digital Education Action Plan (2021-2027), which will help workers to boost their digital skills and get qualified for the future world of work and will help to address the adaptation and acquisition of qualifications and knowledge in view of the digital and green transitions; underlines the need to include ethical aspects of AI and the development of skills for ethical purposes as an integral part of any education and training curricula for developers and people working with AI; recalls that developers, programmers, decision-makers and companies dealing with AI must be aware of their ethical responsibility; highlights that access to the right skills and knowledge on AI can overcome the digital divide in society and that AI solutions should support the integration into the labour market of vulnerable groups such as persons with disabilities or those living in remote or rural areas;

85. Highlights that gender equality is a core principle of the European Union and should be reflected in all EU policies; calls to acknowledge the fundamental role of women to achieve the European digital strategy goals in line with the gender equality objectives; recalls that women's participation in the digital economy is crucial to shaping a flourishing digital society and to boosting the EU's digital internal market; calls on the Commission to ensure the implementation of the ministerial Declaration of Commitment on 'Women in Digital; considers that AI can significantly contribute to overcoming gender discrimination and address the challenges faced by women in order to promote gender equality, provided that an appropriate legal and ethical framework is developed, conscious and unconscious biases are eliminated and the principles of gender equality are respected;

86. Stresses that agriculture is a sector in which AI will play a key role in solving food production and supply issues and challenges; stresses that IoT technologies and AI in particular present a significant opportunity for the modernisation, automation and improved efficiency and sustainability of the agri-food sector and for local development in rural areas, increasing crop production and improving crop quality; considers that the use of digital technologies and AI, and increasing research and development in the agri-food sector are necessary for improving sustainability, efficiency, accuracy and steering productivity; stresses the potential of IoT and AI in precision agriculture, in particular in detecting weather conditions, soil nutrients and water needs, as well as in identifying pest infestations and plant diseases; underlines that monitoring through automated and digital tools can help minimising the environmental and climate footprint of agriculture; calls on the Commission and the Member States to increase the resources and investments dedicated to the agricultural sector for these purposes, and to provide sufficient resources and developing tools for research on the use of AI in these areas in order to facilitate the better use of available resources by farmers concerned, increase efficiency and production, and to nurture the creation of innovation hubs and start-ups in this field;

87. Believes that the application of AI within the Union and the associated use of EU citizens' personal data should respect our values and fundamental rights as recognised by the EU Charter of Fundamental Rights, such as human dignity, privacy, data protection and security; underlines the fact that since AI, by definition, encapsulates data processing, it must

respect EU law on data protection, in particular the General Data Protection Regulation (GDPR); Reiterates the importance of providing independent public data protection authorities with the necessary resources to allow them to monitor and effectively enforce compliance with data protection law;

88. Highlights that investing in sciences, research and development in the areas of digital and AI, fostering better access to venture capital, developing a strong cybersecurity of critical infrastructures and electronic communication networks and access to unbiased high-quality data are the cornerstones of ensuring the digital sovereignty of the Union; calls on the Commission to study the different ways in which the Union is at risk of becoming dependent on external players; notes that unclear, excessive or fragmented regulation will hampers the emergence of innovative high-tech unicorns, start-ups and SMEs or drive them to develop their products and services outside of Europe;

89. Emphasises that achieving a European gigabit society that is secure and inclusive, is a prerequisite of the Union's success in its digital transition; highlights the role of connectivity, powered in particular by 5G and fibre infrastructure, on transforming working and education modes, business models and whole sectors such as manufacturing, transport and healthcare, especially in conjunction with other technologies such as virtualisation, cloud computing, edge computing, AI, network slicing and automation, and has the potential to achieve greater productivity and more innovation and user experiences;

90. Calls on the Commission to incentivise European companies to start developing and building technology capacities for next generation mobile networks; calls on the Commission to analyse the impact of unequal access to digital technologies and disparities in connectivity across the Member States;

91. Notes that investing in High-Performance Computing (HPC) is crucial to reap the full potential of AI and other emerging technologies; calls for bridging the connectivity investment gap to be bridged through Next Generation EU, as well as national and private funding, in order to compensate for the cuts in EU investments in future technologies in the 2021-2027 Multiannual Financial Framework (MFF);

92. Calls for a whole-of-society approach towards cybersecurity; highlights that new approaches to cybersecurity should be designed on the basis of resilience and adaptability to stresses and attacks; calls for a holistic approach towards cybersecurity, where the whole system is taking into account, from system design and usability to the education and training of citizens; stresses that the digital transformation, with the rapid digitalisation of services and the large scale introduction of connected devices, necessarily makes our society and economy more exposed to cyberattacks; highlights that advances in the field of quantum computing will disrupt existing encryption techniques; calls on the Commission to support research that would allow Europe to overcome this challenge, and highlights the need for strong, secure end-to-end encryption; calls on the Commission to explore the use of blockchain-based cybersecurity protocols and applications to improve the resilience, trustworthiness and robustness of AI infrastructures; emphasizes the need to include cybersecurity components in all sectorial policies; underlines that effective protection requires EU and national institutions to work together with the support of ENISA to ensure the security, integrity, resilience and sustainability of critical infrastructures and electronic communication networks; welcomes the Commission's proposal for a revision of the NIS Directive and its intention to enlarge the scope of it and reduce the differences of application by Member States; calls for a cautious approach towards potential dependencies on high-risk suppliers, especially for the deployment of 5G networks;

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93. Instructs its President to forward this resolution to the Council and the Commission.