POLICY BRIEF

Artificial Intelligence:

Recommendations for U.S.-EU Action in the Trade and Technology Council

Daniel S. Hamilton

The United States and the European Union (EU) have recently launched various initiatives to manage their competition and enhance their cooperation on trade and technology issues. The Transatlantic Leadership Network's Trade and Technology Working Group addresses these topics, including recommendations for more effective action. On standards in critical and emerging technologies, our work has profited from background papers by Meredith Broadbent, Nigel Cory, Alex Engler, Jeff Grove and Craig Updyke, Carisa Nietsche, and discussions among Working Group participants. I thank them all for their contributions, from which I have profited. When the United States and the EU established their Trade and Technology Council in 2021, they prioritized artificial intelligence as an area to enhance bilateral coordination and cooperation. This policy brief recommends ways the two parties can do that. A companion brief offers suggestions for broader U.S. and EU cooperation on technology standards. Both papers draw on the accompanying background papers, sometimes directly. I am however solely responsible for the content of this policy brief and its recommendations. All products from the TLN Working Group are at https://www.transatlantic.org/transatlantic-technology-and-trade-working-group/.

The U.S.-EU Trade and Technology Council's (TTC) Working Group 1 on technology standards identified artificial intelligence (AI) as a priority for coordination and cooperation, and established a separate sub-working group to address this issue. They agreed to develop and implement "trustworthy AI" as part of a commitment to "a human-centered approach." They stated their opposition to "use of AI that does not respect democratic values and universal human rights," and targeted China's "social scoring" and social control systems as violating such rights. They pledged to uphold and implement OECD Recommendations on AI, develop mutual understanding on principles underlining trustworthy and responsible AI, and discuss measurement and evaluation tools and activities to assess the technical requirements for a trustworthy AI (for example, protections for accuracy and bias mitigation.) They agreed that AI technologies should be designed to enhance privacy protections and announced they will undertake a joint study examining the impact of AI "on the future of workforces with attention to outcomes in employment, wages, and the dispersion of labor market opportunities."[1]

Introduction

Artificial intelligence (AI) acts on insights derived from data to make decisions usually associated with human actions. AI is more than specific technologies or products; it is an enabler for potentially most things humans do.[2] AI is already changing life for the better. It is being used to improve treatments for COVID-19 and other serious diseases, and they enhance our understanding of health trends. It can help to reduce carbon emissions and raise sustainable crop yields. It can help identify when children might be in danger, help judges make better informed decisions, or guard against cyberattacks. It is becoming an important driver of innovation across many fields. The accelerating development and take-up of AI is projected to grow global gross domestic product by up to 14% ($15.7 trillion) by 2030.[3]

At the same time, many AI applications present risks to human rights, health, safety and security. They can be tools for repression, surveillance, mis- and disinformation, cyber and kinetic conflict. Algorithmic decision-making can perpetuate human biases, with discriminatory effects. AI systems trained on faulty data used by law-enforcement authorities can make bad outcomes even worse. And as such systems become ubiquitous in airplanes, automobiles, heavy machinery, and household products, it is not hard to imagine how faulty AI could have catastrophic outcomes.[4]

These concerns have been heightened given China's rise as an AI leader and Xi Jinping's declaration that his country's goal is to become the global leader in the field by 2030. China's use of artificial intelligence for domestic surveillance and its export of this technology to illiberal governments around the world have caused international controversy.[5]

As Meredith Broadbent notes in her companion paper, these opportunities and risks give public authorities an important role in the development and deployment of AI technologies and their applications. In the U.S-EU TTC joint statement, the two parties portrayed AI as a frontier of new principles, standards, and certification. They emphasized that AI technologies have the potential to greatly benefit society, but can also "threaten our shared values and fundamental freedoms if they are not developed and deployed responsibly." They underscored the importance of developing AI according to a "human-centered approach that reinforces shared democratic values and respects universal human rights." They declared their commitment to support what they called "trustworthy" AI.

Both parties have endorsed the OECD Principles on AI, which were backed by the G20 and which aim to "promote use of AI that is innovative and trustworthy and that respects human rights and democratic values." Its five principles encourage inclusive growth, sustainable development and well-being; human-centered values and fairness; transparency and explainability; robustness, security and safety; and accountability.[6] The two parties are also founding members of the Global Partnership on Artificial Intelligence (GPAI), an international and multistakeholder initiative developed within the G7, open to those

who endorse the OECD Principles. Currently, GPAI consists of 25 democracies pledging to guide the responsible development and use of artificial intelligence consistent with human rights, fundamental freedoms, and shared democratic values. The two also are wiring deeper cooperation between the NIST and standard-setting bodies in Europe to tackle cybersecurity certification and information sharing.[7] In addition, the International Standards Organization (ISO) and the International Electrotechnical Commission (IEC) have established a joint technical committee to serve as a focal point for AI standardization, including ways to establish trust in AI systems.[8]

These initiatives are helping to establish a shared language for global AI norms and governance. However, these principles are largely hortatory; much work remains to turn broad principles into specific policies, standards and regulations.[9]

This is important for the TTC, as both U.S. and EU policymakers support a "risk-based approach" to AI, as reflected in draft EU regulations and work begun by the National Institute of Standards and Technology's (NIST) AI Risk Management Framework.[10] They are increasingly aligned around two core themes for AI policy: (1) enabling innovation and competition, and (2) ensuring trust and accountability. But there are important differences in these policy approaches. Washington tends to focus on the importance of innovation and growth, greater R&D funding, and light-touch regulation, whereas Brussels tends to focus on risk management and trust. Washington tends to take a vertical, industry-by-industry, approach; Brussels takes a cross-industry, horizontal, approach. The TTC could play a role by exploring to what extent these approaches can be aligned behind a U.S.-EU effort to enable safe and responsible AI innovation and adoption globally. Whether the two parties can avoid costly divergence in the regulation of AI in the future will become apparent as discussions move to legal definitions and metrics for risk management requirements. The task is to seek common or complementary positions that balance AI risks against the risks inherent in slowing technological innovation.[11] As Nigel Corey of ITIF warns, the United States and the EU should seek common principles, norms and regulations, "but they should not expect to achieve complete convergence."[12]

EU and AI

McKinsey estimates that widespread adoption of AI could grow European economic activity by almost 20% by 2030. However, AI adoption in Europe is running behind the United States and China. Although the EU has more specialized AI researchers (~40,000) than the United States (~30,000) and China (~20,000), it is home to only six of the top 100 AI startups worldwide, and accounts for only 7% ($1.8 billion) of the $26.5 billion in private funds invested annually in AI and blockchain technologies. The United States accounts for 68% ($18 billion) and China 17% ($4.5 billion). The EU invested up to $9.5 billion in AI in 2019, and the EU's Coordinated Plan proposes to increase public and private AI investments to $21 billion annually over the course of the next decade. Individual member states are also investing in

AI. Germany, which has the largest AI-research sector in the EU, plans to increase investments from $2.4 billion in 2020 to $5.9 billion by 2025.[13]

Nonetheless, overall, the EU is lagging notably behind its peers in both investments and R&D spending. 62 of the top 100 firms investing R&D on AI and blockchain are in the United States; only 13 are in Europe. In 2019, the total amount of R&D spending by software and computer services companies among the top 2,500 global R&D firms reached €70 billion in the United States, compared to €9 billion in Europe. Similarly, the top ten companies granted the most patents in AI technologies contained no European representative – despite Europe's strong science base. The EU's fragmented market hampers the scale-up of small- and-medium sized AI and blockchain enterprises, and constrains the access of such firms to creation of large, cross-country pools of data for building and testing their algorithms, limiting their ability to compete globally.[14]

The European Commission has focused on the importance of risk management and trust, introducing draft legislation for a new regulatory framework through the Artificial Intelligence Act (AIA), investigating how liability frameworks apply to AI systems, and establishing networks of researchers to understand AI's risks and impacts.

The AIA, introduced in April 2021, is the first effort to create a comprehensive AI law, and another example of EU efforts to lead the world in making rules to govern the digital economy, and tracks with parallel efforts to regulate online content, competition in digital markets, and other areas. AIA draws a distinction between three types of systems as a function of their "level of risk": prohibited, high-risk and low-risk. Prohibited AI systems are those that "deploy subliminal techniques" or "exploit vulnerabilities" to distort human behavior. Also prohibited are systems akin to China's "social scoring" mechanism that evaluate the "trustworthiness" of individuals based on their "social behavior." The draft would prohibit law-enforcement authorities from deploying "real-time remote biometric identification systems" (such as live facial-recognition technology) in public spaces without a court order. "High risk" applications include those used as a safety component of larger systems, and those which can have an impact on fundamental rights. They include public infrastructure, social welfare, medical services, and transportation systems. Such applications must comply with detailed requirements and undergo conformity assessment processes. Most AI applications are considered "no risk" or "low risk;" they do not fall in the above categories and are subject to minimal transparency requirements. while a handful of applications posing "unacceptable risk" are prohibited altogether. The regulation imposes serious penalties for breaches. A new EU-level Artificial Intelligence Board, with participants from member states and the Brussels-based European Data Protection Board, would have the power to issue opinions and interpretive guidance on implementing the legislation, including by developing harmonized technical standards. The draft law would apply to any company selling an AI product or service in the EU, so would be extraterritorial in nature, similar to the GDPR.[15]

The draft AIA legislation is now being considered by the EU's co-legislators, the European Parliament and the Council of Ministers. A final version is only likely to emerge after several years. Difficult debates lie ahead on several issues, including the way the draft defines AI systems, "manipulation risks" and "subliminal techniques;" when systems may be deemed "high risk;" the legal responsibilities of different actors in the AI value chain, namely developers, providers, and users of AI systems; how ex-ante requirements such as the need to turn over training data, algorithms, and programming history for audit squares with protections for intellectual property established by the EU's Trade Secrets Directive; how the AIA will interact with the EU's main data-privacy law, the General Data Protection Regulation (GDPR); and whether the draft legislation gets the balance right between mitigating AI risks and fostering technological innovation and the uptake of AI. The AIA's extraterritorial reach could become a flashpoint between Washington and Brussels.[16]

U.S. and AI

The United States is the world's AI leader, with the largest share of private investment, the most start-ups, and strengths in AI talent, R&D, data, hardware and commercialization of innovation.[17] Yet U.S. public and private leaders are concerned about the country's ability to maintain this position, particularly in light of rising Chinese competition.[18] They are also supportive of major new investments in AI research for national security purposes, given the rise of AI-assisted conventional, cyber and disinformation attacks on the United States and its allies.[19]

U.S. policymakers share the EU's interest in mitigating risks associated with AI. Following the introduction of the European Commission's draft regulation, U.S. National Security Advisor Jake Sullivan issued a tweet welcoming it, indicating the Biden administration's potential interest in fostering "trustworthy AI."[20] The White House Office of Science and Technology Policy is working with stakeholders to develop an "AI bill of rights" that would guarantee protection from biased or inaccurate algorithms, ensure transparency, and safeguard citizens from pervasive or discriminatory surveillance.[21]

In contrast to the EU's comprehensive effort to address AI regulation, however, the United States currently leaves that task to several independent regulatory agencies. Meredith Broadbent outlines these authorities in her policy brief accompanying this report. While the prevalent view has been to avoid regulatory or non-regulatory actions that "needlessly hamper AI innovation and growth," more recently the U.S. executive and legislative branches have demonstrated greater willingness "to help developers, users and evaluators of AI systems better manage AI risks." Jeff Grove and Craig Updyke detail current efforts in their accompanying policy brief.[22]

Notably, the Federal Trade Commission has been clear that AI products must adhere to consumer protection laws, and that it will hold companies accountable to prevent the proliferation of racially-biased or unreliable

algorithms to ensure that AI systems are transparent, explainable, fair, and empirically sound.[23] These legal provisions are arguably stronger than those currently at EU-level, given that the AIA has yet to be turned into law.[24]

As of now, however, the U.S. Congress has not considered adopting comprehensive AI legislation in the way the EU is currently debating. In the absence of federal-level action, many state and local authorities at least 17 states have banned or limited the use of facial recognition technology by law enforcement agencies, and have introduced bills or resolutions addressing the use or development of AI.[25]

Recommendations

The EU and the United States can use the TTC to establish complementary approaches to AI policy and research that mitigate risk while enabling responsible AI innovation and adoption, not just across the Atlantic but around the world. Drawing on suggestions made in the other papers accompanying this brief, the TTC's AI working group should build on the common principles the two parties share with the following actions:

Be more precise on AI definitions and clearer on AI categories. Despite agreement on AI principles, AI is defined in many different ways that generate confusion and legal uncertainty. As Meredith Broadbent notes, the AIA's distinctions between AI, deep learning, algorithms, automated processes and "traditional software" are vague, making it difficult to get a basic understanding of compliance. Both parties should align on definitions of AI systems and such terms as "manipulation risks" and "subliminal techniques." They should seek to coordinate as far as possible on risk assessment mechanisms, which could help them align on systems they deem "prohibited," "high risk" and "minimal risk." While respecting the regulatory autonomy of each party, the partners should consult on the legal responsibilities incumbent upon actors involved in various stages of an AI value chain. Ongoing consultations will be important to assess how ongoing AI innovations may change such categorizations. [26]

Move from broad principles to specific use cases regarding products including AI that can be considered high risk in terms of fundamental rights or safety -- such as facial recognition, elements of the automobile or pharmaceutical industries, etc.

Encourage joint transatlantic regulatory sandboxes. The United States and Europe should develop joint regulatory sandboxes – closed testing environments to develop joint regulatory frameworks that balance innovation and consumer protection. AIA encourages EU member states to establish AI regulatory sandboxes to facilitate the development and testing of innovative AI systems under strict regulatory

oversight. Joint U.S.-EU regulatory sandboxes would ensure the regulation of AI systems does not diverge across the Atlantic. The transatlantic partners should learn from Norway's recent experience establishing AI regulatory sandboxes. [27]

Pay attention to the AI potential of small data techniques, such as transfer learning, data labeling, artificial data, Bayesian methods and reinforcement learning. which have huge AI potential**,** and which can reduce the incentive to collect large amounts of personal data.[28]

Support fundamental research. The TTC should identify opportunities to expand research funding on both sides of the Atlantic, facilitate cross-border research collaboration, and accelerate commercialization of new AI technologies, building on their framework of existing science and technology cooperation agreements. Each region should allow the other region's companies to participate in government-funded industry research programs, like the Horizon Europe program and similar U.S. programs that agencies like the NSF operate.[29]

Open resources to support academia, civil society, and small businesses. State of the art AI applications, particularly those based on machine learning, require significant compute resources. The TTC should explore how the United States and the EU can partner to make these resources available to academics, civil society organizations, and small businesses and startups through public-private partnerships, building on the U.S. National AI Research Resource (NAIRR) initiative.[30]

Access to data. At its core, AI is about deriving insights from data and acting on those insights in novel ways. The TTC should prioritize establishing common data governance principles, enabling the free flow of data across borders with trust, making U.S. and EU government datasets available for AI development, and facilitating data sharing and open data by private organizations, with appropriate safeguards for privacy, transparency, and fairness. How to develop mutually beneficial—and accessible—data sharing frameworks, including for both public and private data. These frameworks could address various types of data, including sensitive commercial data and sensitive government data, that may have high value but be difficult to share under existing rules. In addition, this framework could address interoperable mechanisms for allowing individuals to donate their data for public benefit to both commercial and non-commercial entities. The EU and United States could also work to establish common data pools and shared guidance on best practices for responsible and ethical data collection, analysis, and sharing (as in the idea for genetic data sharing). Both sides could explore how to use data trusts and other data sharing models to improve the quality (and quantity) of datasets. This type of cooperation is important because advances in AI, especially machine learning, needs access to good data, not just more data.[31]

Enable digital trade. AI and machine learning technologies increasingly impact trade – from small businesses using AI tools to increase productivity and find new markets abroad, to companies and researchers building and exporting AI technologies across borders. The TTC can be an important mechanism for U.S. and EU policymakers to promote responsible AI governance frameworks that are internationally aligned and that facilitate these new forms of AI-driven trade. In particular, the United States and the EU should develop consistent and non-discriminatory rules that allow businesses and researchers to move data and technologies safely across borders, while avoiding discriminatory outcomes in the regulation of AI applications. Policymakers should also commit to the development and mutual recognition of AI standards to foster regulatory compatibility and facilitate trade.[32]

Responsible adoption of AI by governments. AI has the potential to streamline the delivery of government services, reduce costs and eliminate bureaucracy, improve security and public safety, and enable new services for citizens. But AI adoption can be challenging for large organizations, requiring significant investment, talent development, changes in policies and business processes, and a careful assessment of risks and best practices to address them. The TTC can serve as a venue for sharing insights and best practices between the United States and the EU.

Algorithmic accountability. The two parties should consider how to develop and apply the appropriate regulation of AI, such as via algorithmic accountability, which is the principle that an algorithmic system should employ a variety of controls to ensure the party responsible for deploying the algorithm can verify it acts in accordance with its intentions, and can identify and rectify harmful outcomes. Consistent with the OECD Principles on AI, the two sides could discuss the development and adoption of AI and how they could ensure their respective emerging regulatory approaches are interoperable. In particular, this could address algorithmic accountability in key sectors such as health care, banking, finance, and military applications, where the increased use of algorithms and automation may require new types of oversight.[33]

Build pre-standardization cooperation for new and emerging technologies. Both the United States and Europe recognize the critical role standards play in modern trade. As the conflict over data privacy shows, identifying how to make existing standards and regulatory systems compatible between different regimes is a legitimate, albeit complicated, process. However, both sides could work together on pre-standardization cooperation on new and emerging technologies so their respective firms have the advantage of basing their technology on the same foundational, technical elements (in terms of terminology, measurement methodology, and other technical processes) as another leading tech-driven trading partner. All of this could be done well before standards are finalized and part of regulatory systems that are much harder to change once enacted. Such transatlantic and global pre-standardization cooperation has proven useful for advanced material testing, nanotechnology and nanomaterials, and health-related measurement. Cory and Ellysse Dick offer a number of examples.[34]

Cooperate on AI standardization and conformity assessment issues. As part of broader efforts to counter China's attempts to unduly influence international standards, the United States and Europe need to ensure their respective approaches are aligned and compatible.[35] Once the EU establishes a regime for high-risk AI products, the United States could seek an arrangement to make it easier for U.S. companies to meet these requirements, possibly through mutual recognition of conformity assessments – that is, a process in which regulators in both countries would agree to accept the validity of assessments performed by their counterparts. [36]

Develop a coordinated strategy to counter China's efforts to unduly influence international standards setting for AI and digital policies in ways that are either discriminatory (from a trade perspective) or based on social and political values that are at odds with democratic values and human rights.[37]

Foster exchange of good practice for AI ethics and bias detection. As companies increasingly realize they need a framework for AI governance, they should be able to tap into the many frameworks for AI ethics and bias detection that already exist. NIST is developing an Artificial Intelligence Risk Management Framework intended for voluntary use and to improve the ability to incorporate trustworthiness considerations into the design, development, use, and evaluation of AI products, services, and systems.[38]

Algorithmic audits. After deciding which AI gets regulated, it is necessary to look for specific kinds of bias. The process for uncovering algorithmic bias is called algorithmic auditing. Companies can now deploy software analytics to audit algorithms in context, asking how an algorithm might fail and for whom. This is a way of identifying how an algorithm might be racist, sexist, or might discriminate illegally.[39]

Develop common standards and benchmarks. Evaluating AI and its impact requires a common lexicon and set of metrics to evaluate the performance of AI systems. Through the TTC, the United States and the EU should coordinate efforts to drive the development of consensus, multi-stakeholder standards for AI systems and common benchmarks for AI evaluation through organizations like ISO and IEEE, while ensuring that these standards and benchmarks are aligned with democratic values.

Restrict the malicious use of AI. In addition to managing the risks of unintended harm from AI systems, the United States and the EU should work through the TTC to establish clear restrictions against the malicious use of dual-use AI technologies, and hold malicious actors accountable for harms. This includes export controls on AI hardware to prevent malicious use by authoritarian governments, and clear guardrails for the development and use of AI in weapons systems (including through the UN Convention on Certain Conventional Weapons), AI-enabled surveillance, and the creation and dissemination of mis- and disinformation and manipulated media.

Build data privacy into AI systems. The U.S. and EU's differing approaches to data privacy threaten transatlantic cooperation on AI systems. To pave the way for transatlantic cooperation on AI, the United States and Europe should explore the use of federated learning techniques, a privacy-preserving technology that trains an algorithm on decentralized devices holding local data samples, rather than on a centralized network. Federated learning technology would ensure the integrity of data and uphold GDPR in AI systems. Since using federated learning is often cost prohibitive, the partners should consider creating an accelerator fund for federated learning technology.[40]

Beyond U.S.-EU. The Global Partnership on AI (GPAI) is an international and multi-stakeholder initiative to undertake research and pilot projects on AI priorities to advance the responsible development and use of AI. The Partnership was launched in June 2020 with 15 founding members: Australia, Canada, France, Germany, India, Italy, Japan, Mexico, New Zealand, Korea, Singapore, Slovenia, the United Kingdom, the United States, and the European Union. Brazil and the Netherlands have since joined. The Quad (Australia, United States, Japan, and India) also has standards setting for AI on its agenda.[41]

Notes

---

[1] See Meredith Broadbent's paper for this initiative, "Identifying Common Transatlantic Principles for AI Regulation," https://www.transatlantic.org/wp-content/uploads/2021/12/11-30-2021-Broadbent_Identifying-Common-Transatlantic-Principles-for-AI-Regulation.pdf; White House, "U.S.-EU Trade and Technology Council Inaugural Joint Statement," September 29, 2021, https://www.whitehouse.gov/briefing-room/statements-releases/2021/09/29/u-s-eu-trade-and-technology-council-inaugural-joint-statement/.

[2] Neil Savage, "Nature Index: The race to the top among the world's leaders in artificial intelligence," Nature, December 9, 2020, https://www.nature.com/articles/d41586-020-03409-8.

[3] For examples, see European Investment Bank, "Artificial Intelligence, Blockchain, and the Future of Europe," June 2021, https://www.eib.org/attachments/thematic/artificial_intelligence_blockchain_and_the_future_of_europe_report_en.pdf; Christie Lawrence and Sean Cordey, "The Case for Increased Transatlantic Cooperation on Artificial Intelligence," Harvard Belfer Center, August 2020, https://www.belfercenter.org/sites/default/files/2020-08/TransatlanticAI.pdf; Dan Hurley, "Can an Algorithm Tell When Kids Are in Danger? *New York Times*, January 2, 2018, https://www.nytimes.com/2018/01/02/magazine/can-an-algorithm-tell-when-kids-are-in-danger.html; Zhiyuan "Jerry" Lin, Jongbin Jung, Sharad Goel and Jennifer Skeem, "In the U.S. criminal justice system, algorithms help officials make better decisions, our research finds," *Washington Post*, March 2, 2020, https://www.washingtonpost.com/politics/2020/03/02/us-criminal-justice-system-algorithms-do-help-officials-make-better-decisions-our-research-finds/; Cade Metz, "How A.I. Steered Doctors Toward a Possible Coronavirus Treatment," *New York Times*, April 30, 2020, https://www.nytimes.com/2020/04/30/technology/coronavirus-treatment-benevolentai-baricitinib.html; Lauren A. Kahn, "US Leadership in Artificial Intelligence is Still Possible, Council on Foreign Relations, October 28, 2021, https://www.cfr.org/blog/us-leadership-artificial-intelligence-still-possible.

[4] Lawrence and Cordey; Karen Hao, "Policy are training crime-predicting AIs on falsified data," MIT Technology Review, February 14, 2019, https://www.technologyreview.com/2019/02/13/137444/predictive-policing-algorithms-ai-crime-dirty-data/; Karen Hao, "This is how AI bias really happens—and why it's so hard to fix," *MIT Technology Review*, February 4, 2019, https://www.technologyreview.com/2019/02/04/137602/this-is-how-ai-bias-really-happensand-why-its-so-hard-to-fix/; The Ben Hartwig, "The Impact of Artificial Intelligence on Human Rights," TDWI, June 29, 2020, https://tdwi.org/articles/2020/06/29/adv-all-impact-of-ai-on-human-rights.aspx?m=1.

[5] "The EU's approach to artificial intelligence," IISS Strategic Comments, September 2021, https://www.iiss.org/~/publication/74233822-70ef-42cb-96d8-3cbd3edf17f4/the-eus-approach-to-artificial-intelligence.pdf.

[6] OECD Principles on AI, https://oecd.ai/en/ai-principles; G20 Ministerial Statement on Trade and Digital Economy, https://www.mofa.go.jp/files/000486596.pdf.

[7] See Tyson Barker, "TTC Lift-off: The Euro-Atlantic Tech Alliance Takes Shape," *Internationale Politik Quarterly*, September 30, 2021, https://ip-quarterly.com/en/ttc-lift-euro-atlantic-tech-alliance-takes-shape.

[8] Clare Naden, "It's All About Trust," International Organization for Standardization, November 11, 2019, https://www.iso.org/news/ref2452.html.

[9] For views, see Sam Dupont, "TTC in Context: AI Regulation," German Marshall Fund of the United States, October 20, 2021, https://www.gmfus.org/news/ttc-context-ai-regulation; Jessica Newman, "Now is the Time for Transatlantic Cooperation on Artificial Intelligence," Georgetown Journal of International Affairs, July 13, 2021, https://gjia.georgetown.edu/2021/07/13/now-is-the-time-for-transatlantic-cooperation-on-artificial-intelligence/; Jessica Cussins Newman, "Decision Points in AI Governance; Three Case Studies Explore Efforts to Operationalize AI Principles," UC Berkeley Center for Long-Term Cybersecurity, May 2020, https://cltc.berkeley.edu/wp-content/uploads/2020/05/Decision_Points_AI_Governance.pdf.

[10] Dupont.

[11] IISS.

[12] Cited in Broadbent.

[13] EIB; IISS; Broadbent; "Who is winning the AI race: China, the EU or the United States?" Center for Data Innovation, 2019; Communication on a European strategy for data, European Commission, 19 February 19, 2020; Mia Hoffmann and Laura Nurski, "What is holding back artificial intelligence adoption in Europe?" Bruegel, November 2021, https://www.bruegel.org/wp-content/uploads/2021/11/PC-24-261121.pdf; J. Bughin, J. Seong, J. Manyika, L. Hämäläinen, E. Windhagen and E. Hazan, "Notes from the AI Frontier: Tackling Europe's Gap in Digital and AI," Discussion Paper, February, McKinsey Global Institute, 2019.

[14] EIB; Center for Data Innovation.

[15] European Commission, "Proposal for a Regulation of the European Parliament and of the Council laying down harmonized rules on artificial intelligence (Artificial Intelligence Act) and amending certain Union legislative acts," April 21, 2021, https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1623335154975&uri=CELEX%3A52021PC0206; Michael Veale, Frederik Zuiderveen Borgesius, "Demystifying the Draft EU Artificial Intelligence Act," *Computer Law Review International* (2021), 22(4), pp. 97-112; Dupont; Newman; Nathan Benaich and Ian Hogarth, "State of AI Report," October 12, 2021, https://docs.google.com/presentation/d/1bwJDRC777rAf00Drthi9yT2c9b0MabWO5ZlksfvFzx8/edit#slide=id.gf171287819_0_165; IISS; Broadbent.

[16] Broadbent; Éanna Kelly, "Viewpoint: EU's artificial intelligence rules must not block innovation, says head of European Parliament AI committee," Science Business, May 4, 2021, https://sciencebusiness.net/viewpoint/viewpoint-eus-artificial-intelligence-rules-must-not-block-innovation-says-head-european; Dupont; EIB; IISS.

[17] IISS; Center for Data Innovation.

[18] Susan A. Aaronson, "America's uneven approach to AI and its consequences," George Washington University, April 2020, https://www2.gwu.edu/~iiep/assets/docs/papers/2020WP/AaronsonIIEP2020-7.pdf.

[19] IISS.

[20] Tweet by Jake Sullivan, April 21, 2021, https://twitter.com/jakesullivan46/status/1384970668341669891?lang=en.

[21] Eric Lander and Alondra Nelson, "Americans Need a Bill of Rights for an AI-Powered World," *Wired*, October 10, 2021; Dupont.

[22] Jeff Grove and Craig Updyke, "Policy Brief – Considering the U.S.-EU TTC Working Group on Technology Standards," https://www.transatlantic.org/wp-content/uploads/2021/12/11-30-2021-Grove_WGTransatlanticEconomy-v2.pdf.

[23] Andrew Smith, Director, FTC Bureau of Consumer Protection, "Using Artificial Intelligence and Algorithms," Federal Trade Commission, April 8, 2020, https://www.ftc.gov/news-events/blogs/business-blog/2020/04/using-artificial-intelligence-algorithms; Newman.

[24] Will Douglas Heaven, "This has just become a big week for AI regulation," *MIT Technology Review*, April 21, 2021, https://www.technologyreview.com/2021/04/21/1023254/ftc-eu-ai-regulation-bias-algorithms-civil-rights/?truid=&utm_source=the_download&utm_medium=email&utm_campaign=the_download.unpaid.engagement&utm_term=Active%20Qualified&utm_content=04-22-2021&mc_cid=a4d539a31d&mc_eid=d55863d938; Mark MacCarthy and Kenneth Propp, "Machines Learn That Brussels Writes the Rules: The EU's New AI Regulation, Lawfare, April 28, 2021, https://www.lawfareblog.com/machines-learn-brussels-writes-rules-eus-new-ai-regulation.

[25] National Conference of State Legislatures, "Legislation Related to Artificial Intelligence," January 5, 2022, https://www.ncsl.org/research/telecommunications-and-information-technology/2020-legislation-related-to-artificial-intelligence.aspx.

[26] High-Level Expert Group on Artificial Intelligence, "A definition of artificial intelligence: Main capabilities and scientific disciplines," April 8, 2019, ai_hleg_ai_definition_final_DF06F793-EA01-3573-16D2ACD625E2BDB0_56341.pdf; Meredith Broussard, "Statement before the Task Force on Artificial Intelligence of the Committee on Financial Services, U.S. House of Representatives, October 13, 2021, https://docs.house.gov/meetings/BA/BA00/20211013/114125/HHRG-117-BA00-Wstate-BroussardM-20211013.pdf?mc_cid=71ceed2f4a&mc_eid=a03914a099; EIB; Broadbent; Nietsche.

[27] Broussard; Broadbent; Nietsche.

[28] Husanjot Chahal, Helen Toner and Ilya Rahkovsky, "Small Data's Big AI Potential," Center for Security and Emerging Technology, Georgetown University, September 2021, https://cset.georgetown.edu/wp-content/uploads/CSET-Small-Datas-Big-AI-Potential-1.pdf.

[29] IISS.

[30] See Nigel Cory's paper prepared for this initiative, "Discussion Paper: How the EU-U.S. Trade and Technology Council Cooperation Can Navigate Conflict and Find Meaningful Cooperation on Data Governance and Technology Platforms," https://www.transatlantic.org/wp-content/uploads/2021/12/11-16-2021-TTC-cory-data-platform-governance.pdf; Also Nigel Cory and Ellysse Dick, "How to Build Back Better the Transatlantic Data Relationship," ITIF, March 25, 2021, https://itif.org/publications/2021/03/25/how-build-back-better-transatlantic-data-relationship.

[31] Ibid; European Commission, "Commission proposes measures to boost data sharing and support European

data spaces," press release, November 25, 2020,

https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2102; Eline Chivot, "Why the European

Commission Should Revise its Data Governance Act," Center for Data Innovation, November 5,

2020, https://datainnovation.org/2020/11/why-the-european-commission-should-revise-its-datagovernance-act/; Joshua New, "AI Needs Better Data, Not Just More Data," Center for Data Innovation, March 20,

2019, https://www.datainnovation.org/2019/03/ai-needs-better-data-not-just-more-data/.

[32] Broadbent; Nietsche; Cory; Cory and Dick.

[33] Cory and Dick; Nick Wallace and Daniel Castro, "The Impact of the EU's New Data Protection Regulation on AI,"

ITIF, March 26, 2018, https://itif.org/publications/2018/03/26/impact-eu-new-data-protectionregulation-ai; Joshua New and Daniel Castro, "How Policymakers Can Foster Algorithmic Accountability," ITIF, May 21, 2018, https://itif.org/publications/2018/05/21/how-policymakers-canfoster-algorithmic-accountability.

[34] Cory and Dick; Nigel Cory, "Written Submission Regarding UK-US Trade," ITIF, September 25, 2020, https://itif.org/publications/2020/09/25/comments-uk-parliamentssubcommittee-international-agreement-regarding-us;

[35] Nigel Cory and Robert Atkinson, "Why and How to Mount a Strong, Trilateral Response to China's

Innovation Mercantilism," ITIF, January 13, 2020, https://itif.org/publications/2020/01/13/why-andhow-mount-strong-trilateral-response-chinas-innovation-mercantilism; Cory and Dick.

[36] Steven Overly and Melissa Heikkila, "China wants to dominate AI. The U.S. and Europe need each other to tame it," Politico, February 3, 2021, https://www.politico.com/news/2021/03/02/china-us-europe-ai-regulation-472120; IISS; Dupont; https://www.iiss.org/~/publication/74233822-70ef-42cb-96d8-3cbd3edf17f4/the-eus-approach-to-artificial-intelligence.pdf.

[37] Cory and Dick.

[38] Broussard.

[39] Broussard.

[40] NIetsche; Zoe Stanley-Lockman, "Military AI Cooperation Toolbox" (Washington, D.C.: Center for Security and

Emerging Technology, August 2021), https://cset.georgetown.edu/publication/military-ai-cooperation-toolbox/; Andrew Imbrie et al., "Agile Alliances: How the United States and Its Allies Can Deliver a Democratic

Way of AI" (Washington, D.C.: Center for Security and Emerging Technology, February 2020),

https://cset.georgetown.edu/wp-content/uploads/CSET-Agile-Alliances.pdf.

[41] Broadbent; Cory; Nietsche; Grove and Updyke; Meg King, "Beyond I, Robot: Ethics, Artificial Intelligence, and the Digital Age," Testimony before the House of Representatives Committee on Financial Services, Task Force on Artificial Intelligence, October 13, 2021, https://financialservices.house.gov/uploadedfiles/hhrg-117-ba00-wstate-kingm-20211013.pdf?mc_cid=71ceed2f4a&mc_eid=a03914a099.