

Democratic Countries Should Form a Strategic Tech Alliance

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Abstract

China's relentless advance in Artificial Intelligence (AI) and quantum computing has engendered a significant amount of anxiety about the future of America's technological supremacy. The resulting debate centres around the impact of China's digital rise on the economy, security, employment and the profitability of American companies. Absent in these predominantly economic disquiets is what should be a deeper, existential concern: What are the effects of authoritarian regimes exporting their values into our society through their technology? This essay will address this question by examining how democratic countries can, or should respond, and what you can do about it to influence the outcome.

The essay argues that democratic countries should form a global, broadly scoped Strategic Tech Alliance, built on mutual economic interests and common moral, social and legal norms, technological interoperability standards, legal principles and constitutional values. An Alliance committed to safeguarding democratic norms, as enshrined in the Universal Declaration of Human Rights (UDHR) and the International Covenant on Civil and Political Rights (ICCPR). The US, the EU and its democratic allies should join forces with countries that share our digital DNA, institute fair reciprocal trading conditions, and establish a global responsible technology governance framework that actively pursues democratic freedoms, human rights and the rule of law.

Currently, two dominant tech blocks exist that have incompatible political systems: the US and China. The competition for AI and quantum ascendancy is a battle between ideologies: liberal democracy mixed with free market capitalism versus authoritarianism blended with surveillance capitalism. Europe stands in the middle, championing a legal-ethical approach to tech governance.

The essay discusses political feasibility of cooperation along transatlantic lines, and examines arguments against the formation of a democratic, value-based Strategic Tech Alliance that will set global technology standards. Then, it weighs the described advantages of the establishment of an Alliance that aims to win the race for democratic technological supremacy against disadvantages, unintended consequences and the harms of doing nothing.

Further, the essay attempts to approach the identified challenges in light of the 'democracy versus authoritarianism' discussion from other, sociocritical perspectives, and inquires whether we are democratic enough ourselves.

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The essay maintains that technology is shaping our everyday lives, and that the way in which we design and utilize our technology is influencing nearly every aspect of the society we live in. Technology is never neutral. The essay describes that regulating emerging technology is an unending endeavour that follows the lifespan of the technology and its implementation. In addition, it debates how democratic countries should construct regulatory solutions that are tailored to the exponential pace of sustainable innovation in the Fourth Industrial Revolution (4IR).

The essay concludes that to prevent authoritarianism from gaining ground, governments should do three things: (1) inaugurate a Strategic Tech Alliance, (2) set worldwide core rules, interoperability & conformity standards for key 4IR technologies such as AI, quantum and Virtual Reality (VR), and (3) actively embed our common democratic norms, principles and values into the architecture and infrastructure of our technology.

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1. Introduction

In December 2020, Europe reached a comprehensive multi-billion-dollar investment agreement (CAI) with China.² As the United States (US) are facing the challenges of intensified competition with China, the deal has come under some criticism by the Biden Presidency.³ The question arises whether differing US and EU strategies towards China are damaging transatlantic relations⁴, and whether the world would be better off with a united US-EU front.⁵

China’s relentless advance in Artificial Intelligence (AI) and quantum computing has engendered a significant amount of anxiety about the future of America’s technological supremacy.⁶ Currently, China is leading in quantum technology, the US still have a slight edge in AI.⁷ The resulting debate

² See: <https://edition.cnn.com/2020/12/31/asia/eu-china-trade-deal-human-rights-us-intl-hnk/index.html>

³ See: <https://www.nytimes.com/2020/12/23/business/china-european-union-united-states.html>

⁴ See: <https://www.politico.eu/article/why-europe-china-investment-deal-will-poison-transatlantic-relations-joe-biden/>

⁵ See also: <https://www.atlanticcouncil.org/event/transatlantic-cooperation-in-the-era-of-ai/>

⁶ See: <https://edition.cnn.com/2020/11/15/asia/biden-china-policy-trump-us-intl-hnk/index.html>

⁷ See for example: <https://hai.stanford.edu/research/ai-index-2021> and <https://www.newsweek.com/2020/12/25/china-leads-quantum-computing-race-us-spies-plan-world-fewer-secrets-1554439.html>

centres around the impact of China's digital rise on the economy, security, employment and the profitability of American companies. Absent in these predominantly economic disquiets is what should be a deeper, existential concern: What are the effects of authoritarian regimes⁸ exporting their values into our society through their technology?⁹ This essay will address this question by examining how democratic countries can, or should respond, and what you can do about it to influence the outcome.

The essay argues that democratic countries should form a global, broadly scoped Strategic Tech Alliance, built on mutual economic interests and common moral, social and legal norms, technological interoperability standards, legal principles and constitutional values.¹⁰ The US, the EU and its democratic allies should join forces with countries that share our digital DNA, institute fair reciprocal trading conditions, and establish a global technology governance framework that actively pursues democratic freedoms, human rights and the rule of law.¹¹ In this essay, 'democratic norms' refer to the principles and values as enshrined in the Universal Declaration of Human Rights (UDHR) and the International Covenant on Civil and Political Rights (ICCPR).

The essay concludes that to prevent authoritarianism from gaining ground, governments should do three things: (1) inaugurate a Strategic Tech Alliance, (2) set worldwide core rules, interoperability & conformity standards for key 4IR (Fourth Industrial Revolution) technologies such as AI, quantum and Virtual Reality (VR), and (3) actively embed our common democratic norms, principles and values into the architecture and infrastructure of our technology.¹²

2. The Challenge

Technology is shaping our everyday lives. The way in which we design and use our technology is influencing nearly every aspect of the society we live in.¹³ The opposite is also true: the type of society we live in, its norms and standards, shapes the architecture of technology. Technology is never neutral: our society's norms and values are reflected in the technology we produce. As society shapes technology, technology shapes society.

For example, privacy preserving techniques used in machine learning algorithms help to safeguard privacy: a fundamental, constitutional freedom. Protecting privacy features high on the list of

⁸ See for a list of authoritarian regimes: <https://www.wearethemighty.com/lists/the-21-most-authoritarian-regimes-in-the-world/>

⁹ See also: Roundtable: A 'China Model?' Beijing's Promotion of Alternative Global Norms and Standards, U.S.-China Economic AND Security Review Commission, April 27, 2020, <https://www.uscc.gov/hearings/roundtable-china-model-beijings-promotion-alternative-global-norms-and-standards>

¹⁰ See also: <https://beyondstandards.ieee.org/ieee-7010-2020-launch-prioritizes-human-well-being-and-environmental-sustainability-via-technology/>

¹¹ See also: <https://www.scmp.com/comment/opinion/article/3118137/china-eu-investment-deal-shows-biden-united-front-trade-will-not-be>

¹² See: Mauritz Kop, Machine learning and EU data-sharing practices: Legal aspects of machine learning training datasets for AI systems, (March 3, 2020). Research Handbook on Big Data Law edited by Roland Vogl, Chapter 22, pp. 431-452, Edward Elgar Publishing Ltd., 2021, Forthcoming.

¹³ See also: Ünver, H. Akin. *Artificial Intelligence, Authoritarianism and the Future of Political Systems*. Centre for Economics and Foreign Policy Studies, 2018, www.jstor.org/stable/resrep26084.

priorities in a society that cherishes human rights.¹⁴ On the other end of the spectrum are facial and voice recognition techniques used for a social crediting system. These have no place in a democracy.

Just like we embed our own values in our hi-tech systems, the authoritarian regimes do the same. With authoritarianism I mean autocratic governments that have a culture with less political participation, less checks and balances and less civil liberties.¹⁵ Societies with social norms, democratic standards and ethical priorities that are incompatible with our own system.

Subsequently, the regimes export their undemocratic ideology to our society through the construction, dissemination and functionality of their technology.¹⁶ Main contributors to this spread of culture and ideology through technology are the Belt & Road Initiative, Confucius Institutes and Chinese multinationals.¹⁷ I am referring here to central 4IR technologies such as 5G infrastructures, AI, big data and quantum computing.¹⁸ Excesses involve automated social profiling systems that monitor and hinder online dissidence. This process of exporting an incompatible political ideology through technology holds the danger of permanently weakening the health of our democracy, including the rights and freedoms we care so deeply about. We should prevent that from happening.

It is important to note that we do not intend to exclude the people who are living in authoritarian or even totalitarian regimes such as China, Russia, Iran and North Korea, nor the companies that are willing to abide to democratic technological standards. Instead, our strategy should be to avoid the ideas of the regimes that are incorporated in their technology, which is never neutral.

3. The Response

What needs to be done and who should do it?

Democratic Countries Should Form a Strategic Tech Alliance. That's the first, foundational step.

The US and its democratic allies should establish a strong, broadly scoped Strategic Tech Alliance with countries that share our digital DNA. An Alliance built on strategic autonomy, mutual economic interests and shared democratic & constitutional values. Main purpose of the Strategic Tech Alliance is to win the race / stay ahead of the competition.

Multilateral cooperation with any country that has matched concerns about the outcome of the race for AI & quantum dominance in view of democratic values, is paramount. A natural starting point for a geopolitical dialogue on disruptive technology that is also in the focus of President Biden, is Transatlantic cooperation.¹⁹ In addition to the US, EU, UK & Canada, countries such as India, Israel, Japan, South-Korea, Taiwan and Australia would be great candidates to join the cause. The Strategic Tech Alliance could also connect with existing structures such as NATO.

¹⁴ See for example: <https://plato.stanford.edu/entries/it-privacy/> and <https://www.technologyreview.com/2018/12/14/138615/its-time-for-a-bill-of-data-rights/>

¹⁵ Such as the Chinese Communist Party and the Kremlin.

¹⁶ See also: <https://www.washingtonpost.com/technology/2020/11/16/biden-huawei-trump-china/>

¹⁷ See also: The National Endowment for Democracy, Sharp Power and Democratic Resilience Series, February 12, 2020, <https://www.ned.org/sharp-power-and-democratic-resilience-series/>.

¹⁸ See also: <https://edition.cnn.com/2020/10/30/world/trump-china-xi-election-intl-hnk/index.html>

¹⁹ See also: <https://www.politico.eu/article/long-term-significance-of-new-transatlantic-agenda/>

Moreover, it is crucial and urgent that democratic countries set worldwide technology standards together. This includes the development of globally accepted benchmarks and certification. Standards based on safety, security and interoperability, with respect for our common Humanist moral values.²⁰ Values in which the rule of law and human dignity play a leading part.

Consequently, AI & quantum products and services made within the territory of the Strategic Tech Alliance or elsewhere in the world, should adhere to specific safety and security benchmarks, before they qualify for market authorization. These should follow the high technical, legal and ethical standards that reflect Responsible, Trustworthy AI & quantum technology core values. Ex ante certification comparable to the USA Compliance Marking or the European CE-marking should be mandatory before AI and quantum infused products and services are eligible to enter the Transatlantic markets.²¹

In this vision, the Strategic Tech Alliance should regulate transformative technology in a harmonized way across member countries. Using a risk-based approach that incentivises sustainable innovation. For example, the Strategic Tech Alliance would share core horizontal rules that govern the production and distribution of transformative tech systems. Think of universal, overarching guiding principles of Trustworthy and Responsible AI & quantum technology that are in line with the distinctive physical characteristics of quantum mechanics.²² Technology that gained the trust of the general public has significant marketing advantages.

To preserve pre-pandemic life as we knew it, we must bake our norms, standards, principles and values into the design of our advanced hi-tech-systems.²³ From the first line of code. We can accomplish this by pursuing responsible, Trustworthy tech: by actually building socially & ethically aligned AI and quantum architectures and infrastructures.²⁴ We should incorporate our values *en bloc* and make our uniform design standards and (inter)operational requirements mandatory by law. A Strategic Tech Alliance could be the engine.

4. Political Feasibility

Let us discuss arguments against the formation of a democratic, value-based Strategic Tech Alliance that will set global technology standards. First, is establishing an Alliance that opposes the authoritarian tech agenda a realistic, politically feasible scenario or mere naive utopian thinking? Will the ambition of harmonized, global technology standards be limited by a cold shorter-term sum of costs and benefits? Will Realpolitik make it fade away in beauty?

²⁰ Mauritz Kop, *Beyond AI & Intellectual Property: Regulating Disruptive Innovation in Europe and the United States – A Comparative Analysis*, <https://law.stanford.edu/projects/beyond-ai-intellectual-property-regulating-disruptive-innovation-in-europe-and-the-united-states-a-comparative-analysis/>

²¹ Mauritz Kop, *Shaping the Law of AI: Transatlantic Perspectives*, TTLF Working Papers No. 65, Stanford-Vienna Transatlantic Technology Law Forum (2020), <https://law.stanford.edu/publications/no-65-shaping-the-law-of-ai-transatlantic-perspectives/>. See also: https://ec.europa.eu/growth/single-market/ce-marking_en

²² For a detailed description of ethical, legal and social guiding principles for quantum technology, see: Mauritz Kop, *Establishing a Legal-Ethical Framework for Quantum Technology*, (February 28, 2021), Yale Journal of Law & Technology (YJoLT) The Record 2021, Forthcoming

²³ See also: Kara Frederick, *Democracy by Design - An Affirmative Response to the Illiberal Use of Technology for 2021*, CNAS, December 15 2020, <https://www.cnas.org/publications/reports/democracy-by-design>

²⁴ See also: <https://www.aitrends.com/videos/artificial-intelligence-the-alpha-trend/>

Let's start with the United States. After the Democrats recently recaptured Senate majority, progressive policies might regain momentum. But still, forming an Alliance and setting joint tech governance goals would require a bipartisan, bicameral effort. It would require large majorities to prevent legislative filibusters. Moreover, President Biden's primary policy objectives are battling COVID-19 together with relief measures, Medicare for All, rebuilding the country's infrastructure and fighting climate change. Regulating Big Tech and its impact on society might have less priority. However, winning the race for AI & quantum ascendancy should be high on any president's agenda.²⁵

Then the EU. In recent years, the European Commission has been very active and progressive in the field of legal-ethical frameworks for emerging tech, including the conception of responsible AI and data governance models. Since it has become clear that MAGA (Make America Great Again) will no longer be the leading ideology in America for the next 4 years, Ursula von der Leyen's Team has not missed a single opportunity to strengthen transatlantic ties and inject political momentum into the relationship. With the main goal of implementing a mutual tech governance agenda, and jointly managing the geopolitics of exponential technology.

An exception to this rule was the recent EU-China deal, which raised quite a few eyebrows in Washington.²⁶ This trade deal makes clear that economic interests of Western democratic countries in China, in this case prompted by commercial interests of the German car industry and the Silk Road Initiative, may stand in the way of the targeted team effort needed to achieve the envisaged Strategic Tech Alliance.²⁷ As of 2020, the EU has surpassed the US as China's largest trading partner (numbers). The economic interests are gigantic and vary widely from one Member State to another.²⁸ For example, the Netherlands, a country of 17 million people, has an annual trade deficit with China of no less than 70 billion euros. Therefore, one might think that the EU will be less likely to 'turn away' from China and choose sides.

It is to be hoped that Europe has not been lulled into blissful sleep by the Chinese Siren Song of smart partnerships, better working conditions, respect for intellectual property and fair trade & investment opportunities.²⁹ The idea that the Chinese Party apparatus will allow more openness is a strategic misconception.³⁰ The opposite of openness, reliability, honesty and a fair level playing field happens every day before our eyes in Hong Kong.³¹ And it doesn't get any better. Entirely in line with the autocratic paradigms of systematic repression, inequality, arbitrariness, state surveillance and control.³² It is not expected that the political situation and civil liberties & human rights in China will

²⁵ See also: <https://www.technologyreview.com/2021/01/22/1016652/biden-administration-ai-plans-what-to-expect/>

²⁶ See: <https://www.nytimes.com/2020/12/30/business/china-eu-investment-deal.html>

²⁷ See: <https://www.politico.eu/article/eu-china-investment-deal-angela-merkel-pushes-finish-line-despite-criticism/>

²⁸ See: <https://www.politico.eu/article/germanys-drive-for-eu-china-deal-draws-criticism-from-other-eu-countries/>

²⁹ See also: <https://www.politico.eu/article/paris-will-block-eu-china-deal-says-trade-minister/>

³⁰ See also: <https://www.project-syndicate.org/commentary/eu-china-investment-agreement-criticisms-by-daniel-gros-2021-02>

³¹ See also: <https://www.nytimes.com/2020/09/17/world/asia/china-europe-xi-jinping.html>

³² See also: Wright, Nicolas D., Artificial Intelligence and Democratic Norms - Meeting the Authoritarian Challenge, Sharp Power and Democratic Resilience Series, The National Endowment For Democracy (August 2020), <https://www.ned.org/sharp-power-and-democratic-resilience-series-artificial-intelligence-and-democratic-norms/>

change in the short or medium term. We are competing with a political ideology that is fundamentally at odds with our own system.³³

In addition, internal divisions within the EU Member States may delay the rollout of progressive political initiatives.³⁴ Facing the portrayed challenges, Europe should speak with one voice. Further, it is to be hoped that European ambitions towards strategic autonomy and data sovereignty will not stand in the way of transatlantic partnerships in the field of AI and quantum computing, quantum sensing and the quantum internet.

Second, is there sufficient political will, enough common ground between the various continents and countries to forge such an Alliance, comparable to the foundation of the United Nations in 1945 after World War II? There currently seem to be diverging opinions between the US and the EU on antitrust, digital tax and digital trade³⁵, and consensus on IP policy, ethics, cybersecurity and the need for global value-based standards that respect democratic freedoms, human rights and the rule of law. On the other hand, it can be quite healthy to have mutual differences, and a varied pallet of perspectives within a partnership.

Moreover, who are we to pursue worldwide, culturally sensitive norms and standards? Could this be perceived by other countries as undesirable technologically expansionist behaviour? Will excessive standardization, certification and benchmarking have ramifications on rapid innovation, global competition and consumer welfare?

Brexit has made it painfully clear how difficult it is to agree on even the most trivial affairs. The question is whether the barriers to cooperation will be removed, just because a new wind is blowing from White House.³⁶

In conclusion: political support to realize our ideal is a precondition for success. Preferably not in a weakened compromise form, but in a manner that reflects the power of the technology and the interests at stake. Instead of an isolationist MAGA approach, policy makers on both sides of the spectrum need to see the bigger picture and the urgency of the issues at hand. And reach out to nations that historically share our values and that demonstrably meet the democratic conditions set by the Alliance to qualify for membership.

With existential challenges ahead of us, normative choices must be made. We cannot get there with transactional politics and trade deals alone. We have to bring the best of both worlds together. A combination of normative choices - which are contextual, culturally sensitive and in constant flux - and Realpolitik is the key. Making the right choices today can result in the lasting partnerships we need to respond to the big questions we face. Partnerships based on mutual trust, strategic autonomy and shared sovereignty.³⁷ Partnerships that acknowledge the need for regulatory cooperation and a values-based approach.

³³ See also: 20200917_IETC Hearing with Chairman Eric Schmidt: "Interim Review of the National Security Commission on AI" <https://youtu.be/USEKVNsf4ol?t=862>.

³⁴ See: <https://edition.cnn.com/2020/12/31/europe/eu-bad-2020-2021-analysis-intl/index.html>

³⁵ See: <https://www.politico.eu/article/eu-to-us-president-elect-joe-biden-lets-be-tech-allies/>

³⁶ See also: <https://www.politico.eu/article/europe-us-technology-drifting-joe-biden/>

³⁷ See Kop, *supra* note 21 and Mamudu HM, Studlar DT. Multilevel Governance and Shared Sovereignty: European Union, Member States, and the FCTC. *Governance (Oxf)*. 2009;22(1):73-97. doi:10.1111/j.1468-0491.2008.01422.x

5. Are We Democratic Enough Ourselves?

Let's see if we can approach this matter from other, sociocritical perspectives.

First, are the Chinese the real threat, or is it us? Are we really democratic enough ourselves?³⁸ Is making the distinction between the democratic and the authoritarian model the correct line of thinking, the proper approach for our proposed response to the identified challenges? Are technology and data capitalism coupled with the wrong kind of self-regulation causing filter bubbles, fake news and racial bias?³⁹ In other words, could technology that originated from Western online platforms such as Facebook, Amazon, Google and Twitter be the real source of danger? Are the behemoth platforms, with market dominance and lobbying power greater than countries, menacing our democracy? In general, absent regulation, the tech platforms have corporate social responsibility and should adopt an Apollonian mindset towards responsible entrepreneurial ideology, world view and philosophy of life, instead of a Dionysian attitude.⁴⁰

One can argue whether the harmful societal influence of the social platforms was caused by naive idealism from Silicon Valley, or by unrealistic price and profit expectations of Wall Street.⁴¹ Or by a combination thereof. In this view, the algorithms⁴² have become less democratic not so much as a consequence of the wrong corporate ideology, but because of the increasing pressure that shareholders are putting on tech companies.⁴³ Thus, the system is to blame.

But can you be a role model for the rest of the world this way? Are the dangers of our privatized technology governance model not as threatening, or even more dangerous to our society than the predictable authoritarian technology governance model could ever be? Is there an enemy within, that stands at the cradle of excesses like the Capitol Insurrection?⁴⁴ Is the privatized power over the digital world a similar existential challenge, for which solutions must be developed? The answer appears to be in the affirmative. Democratic countries themselves have serious internal problems.

Moreover, there is no empirical evidence that AI will endanger democracy and reinforce authoritarianism, totalitarianism or even fascism, since AI is ideologically neutral.⁴⁵ That said, shouldn't we better use machine values instead, since human values create biases in data and algorithms, fake news and conspiracy theories?⁴⁶

Be that as it may, from a higher level, a strategic democratic alliance can provide a counterbalance to both the free-market capitalism based privatized digital governance model, and the authoritarian model. In the duel for AI dominance and the battle to be the first to build a functioning multi-

³⁸ See for example: <https://www.wbur.org/onpoint/2021/03/09/vaccine-passports-public-health-tool-or-invasion-of-civil-liberties>

³⁹ See: Marietje Schaake, How democracies can claim back power in the digital world, MIT Technology Review, September 29, 2020, <https://www.technologyreview.com/2020/09/29/1009088/democracies-power-digital-social-media-governance-tech-companies-opinion/>

⁴⁰ Mauritz Kop, *AI & Intellectual Property: Towards an Articulated Public Domain*, [28 Tex. Intell. Prop. L. J. 297 \(2020\)](https://www.texasintellectualproperty.com/2020/02/28/ai-intellectual-property-towards-an-articulated-public-domain/)

⁴¹ See: <https://www.technologyreview.com/2020/12/03/1012797/fair-value-fixing-the-data-economy/>

⁴² See also: <https://yjolt.org/blog/legal-ai-artificial-intelligence-contact-tracing-stop-coronavirus-us>

⁴³ See against this background: <https://www.netflix.com/nl/title/81254224>

⁴⁴ See: <https://www.npr.org/2021/02/09/965472049/the-capitol-siege-the-arrested-and-their-stories>

⁴⁵ Ünver, *supra* note 13.

⁴⁶ See in this light also: <https://www.wired.com/story/opinion-ai-is-an-ideology-not-a-technology/>

purpose quantum computer, the West desperately needs the Tech Giants from the Silicon Valley and Massachusetts innovation clusters.

6. Two Dominant Tech Blocks

Currently, two dominant tech blocks exist: the US and China. The blocks have incompatible political systems. It is a battle between ideologies.⁴⁷ Liberal democracy versus authoritarianism. Free market capitalism versus surveillance capitalism. Europe stands in the middle, championing a legal-ethical approach to tech governance. Its Member States often divided when it comes to Beijing: 12 of them participate in Xi Jinping's Belt and Road program.

It is of crucial strategic importance to proactively consider potential alternative scenarios.⁴⁸ Future scenarios in which our desired coalition of democratic countries did not materialize for whatever reason. We can use scenario planning for this. Scenario planning, or scenario analysis, is the development, comparison and anticipation of probable future scenarios, together with short- and longer-term transitions.⁴⁹ Impending scenarios meant to be used as thinking instruments.

Alternatives to the creation of a strong democratic Strategic Tech Alliance are no alliance or different alliances. Each scenario could bring both (trade) war and peace to the world. Please note that establishing a league of like-minded democratic countries does not guarantee winning the race for AI and quantum supremacy. Moreover, competition and rivalry between blocks could incentivize exponential innovation. The race for AI supremacy is not a zero-sum game.

Does one rule out the other? Could the US or the EU be both a partner and rival of China through smart partnerships? In theory, it is a position that both the US and the EU could take. In tandem with bolstering alliances with our allies, we should -to a certain extent- be open to dialogue and cooperation with the regimes. We also have to consider an unthinkable alliance of EU-China-Russia 'against' a pact between countries like US/Canada/UK/Israel/Australia/India/South-Korea/Japan.⁵⁰

Another scenario is a protracted Cold War for AI Supremacy with no winner between the US and China.⁵¹ A no winner takes all scenario would eventually mark the Splinternet.⁵² On the one hand a China led internet, characterized by a top-down approach to tech. It would comprise of countries that adopt Chinese apps. Its rival would be a US influenced internet, including countries that adopt US built platforms and apps. From the server level, cloud computing and AI all the way down to the phone operating system level. Cyberbalkanization could result in two parallel worlds, each with distinct divisions regarding technology, trade and ideology. In practice, this implies two opposing ecosystems would exist, each using its own standards and architectures that are incompatible with one other.

⁴⁷ See also: <https://edition.cnn.com/2021/03/04/asia/xi-jinping-china-npc-successor-intl-hnk/index.html>

⁴⁸ See also: <https://www.atlanticcouncil.org/event/the-global-quest-for-digital-sovereignty/>

⁴⁹ Ron Bradfield, George Wright, George Burt, George Cairns, Kees Van Der Heijden, The origins and evolution of scenario techniques in long range business planning, Futures, Volume 37, Issue 8, 2005, Pages 795-812, ISSN 0016-3287, <https://doi.org/10.1016/j.futures.2005.01.003>.

⁵⁰ See also: <https://www.cnas.org/publications/video/navigating-the-china-russia-partnership>

⁵¹ See also: <https://edition.cnn.com/2021/01/05/europe/uk-aircraft-carrier-strike-group-intl-hnk-mil/index.html>

⁵² See: Mark A. Lemley, The Splinternet (July 30, 2020). Stanford Law and Economics Olin Working Paper #555, Available at SSRN: <https://ssrn.com/abstract=3664027>

In the event China wins the race for AI and quantum, it will have the power to overthrow the EU and the US.⁵³ The world would see a new era of authoritarian surveillance capitalism. In the case that a strategic partnership of democratic countries led by the US and the EU will prevail, it may well coerce China to adopt Humanist values.

To prevent China Standards 2035,⁵⁴ we need a coalition of democratic countries that bakes its values into its technology and that sets worldwide interoperability standards for telecommunications, AI & quantum infrastructures.

7. Harms of Doing Nothing

The described advantages of the establishment of an alliance must be weighed against disadvantages, unintended consequences and the harms of doing nothing.

First, no alliance means fragmentation and division, without synergetic effects. A lack of action entails less chance of winning the race for tech dominance and securing the chance to set and control global standards. Standards that preserve democratic values. The danger of global autocratic values in technology and infrastructure increases in this analysis, because there is no *en bloc* counterbalance to emerging countries such as China, the country of the large numbers of consumers, hordes of AI talent, and huge amounts of machine learning training data, regurgitated by labelling farms. China has massive government budgets for the development of smart algorithms and quantum technology applications. Currently it's everybody for himself; that won't help us win the race. We need an alliance instead of division.

Second, quantum technology enhances AI. Together with blockchain it promises machine learning on steroids. Quantum and AI hybrids will give to the world a new perspective of science itself. In this context, it is crucial to raise awareness of their incredible potential for good, and their anthropogenic risks. The Fourth Industrial Revolution will bring about a world in which anything imaginable to improve, or worsen the human condition, can be built in reality.

Authoritarian countries obtaining this powerful technology and using it against us, poses serious national cybersecurity (cyberwarfare, hacking) threats.⁵⁵ More importantly, the regimes would have the ability to impose their non-democratic values on us through technological expansionism. From our liberal-democratic viewpoint, this could lead to a dystopian scenario. AI driven facial recognition systems used for shadowing and social credit systems would become the standard. Surveillance machines are a dictator's dream. Authoritarian a-moral *machina sapiens* will take over creation and invention. Privacy, mental security and freedom of thought will become a distant memory.

Our society will be better off when we forge Democratic Alliances. A united democratic tech block has a greater chance of winning the race for AI & quantum dominance.

Third, long term risks of underinvesting in 4IR technology are no less than existential. The US needs to invest heavily in safe & responsible AI and quantum. The market cannot pull this off on its own. The state should take the lead and launch a mission oriented, 2030 US Standards plan, backed by

⁵³ See also: <https://edition.cnn.com/2021/03/05/china/china-world-biggest-navy-intl-hnk-ml-dst/index.html>

⁵⁴ See: <https://www.cnbc.com/2020/04/27/china-standards-2035-explained.html>

⁵⁵ See: <https://jolt.law.harvard.edu/digest/the-solarwinds-software-hack-a-threat-to-global-cybersecurity>

large-scale funding.⁵⁶ This plan should be sharply demarcated, and executed by golden triangle, public-private partnerships. These partnerships can be based on the triple helix innovation model, which guarantees synergistic effects between government, academia and business.

The portrayed advantages of bolstering an alliance, and actively shaping technology for good evidently outweigh the harms of remaining passive or indecisive. It is critical that the US does not hang back in a never-ending balancing of stakeholder concerns but that it is confident in formulating a vision and focussed in accomplishing its well defined national and global policy objectives. By doing nothing the US will fall behind economically. The US and the EU should set out the path along transatlantic lines and guide their democratic allies toward a Strategic Tech Alliance.⁵⁷

8. Regulating 4IR Technology

Regulating emerging technology is an unending endeavour. It is an ongoing, cyclic process that follows the lifespan of the technology and its implementation. How should Democratic countries construct regulatory solutions that are tailored to the exponential pace of innovation in the Fourth Industrial Revolution?

A crucial first step is to map the risks and chart culturally sensitive ethical, legal and social implications (ELSI), per 4IR technology.⁵⁸ Then, universal principles, or core requirements, that manage these ethical, legal and social issues and risks should be considered, exchanged and discussed.⁵⁹

The second step is to implement agile, flexible governance solutions that can quickly adapt and respond to sudden changing conditions and societal demands.⁶⁰ In this light, the construction of binding technology specific legal-ethical frameworks, accompanied by soft law instruments such as risk-based technology assessments⁶¹, audits and legal sandboxes would be an essential regulatory intervention. Again, we have to differentiate, and make this regulatory effort per emerging 4IR technology. For example, a legal-ethical framework for AI should consist of joint, agreed upon core horizontal rules that are binding across industries.⁶²

⁵⁶ See also: <https://www.reuters.com/article/us-health-coronavirus-economy-breakingvi-idUSKBN29Y219>

⁵⁷ See also: <https://edition.cnn.com/2021/02/19/politics/joe-biden-foreign-policy-speech/index.html>

⁵⁸ Kop, *supra* note 22.

⁵⁹ Mauritz Kop, *Regulating Transformative Technology in The Quantum Age: Intellectual Property, Standardization & Sustainable Innovation*, 2 TTLF Newsletter on Transatlantic Antitrust and IPR Developments Stanford-Vienna Transatlantic Technology Law Forum, Stanford University 2020, <https://law.stanford.edu/publications/regulating-transformative-technology-in-the-quantum-age-intellectual-property-standardization-sustainable-innovation/>

⁶⁰ See: Stefaan Verhulst, *Introducing the Digital Policy Model Canvas*, <http://thegovlab.org/introducing-the-digital-policy-model-canvas/>; and World Economic Forum, *White Paper Digital Policy Playbook 2017: Approaches to National Digital Governance*, http://www3.weforum.org/docs/White_Paper_Digital_Policy_Playbook_Approaches_National_Digital_Governance_report_2017.pdf.

⁶¹ See: Mauritz Kop, *AI Impact Assessment & Code of Conduct*, European AI Alliance (European Commission), May 29, 2019, <https://futurium.ec.europa.eu/en/european-ai-alliance/best-practices/ai-impact-assessment-code-conduct> and <https://www.iaia.org/wiki-details.php?ID=26> and <https://www.jstor.org/stable/4200654?seq=1>

⁶² Kop, *supra* note 21, 22 and 59.

Step 3 is to complement these overarching rules by vertical, industry-specific requirements -including self-regulation- that fit in the existing Quality Management Systems for economic sectors, or domains, such as the Food industry, the Health sector, Energy, Finance and so on.⁶³ The AI legislative approach can be applied, or linked to quantum technology and VR, to a certain level.⁶⁴ Naturally, the distinctive physical characteristics of quantum technology demand for an extra set of core horizontal and for additional sector specific vertical rules.⁶⁵ For each technology, the goal is to harmonize quintessential core rules, preferably by means of codification in a Declaration or a Convention.

As mentioned earlier, shared (interoperability) standards, benchmarks and certification play a vital role in regulating 4IR technology.⁶⁶

The envisioned horizontal-vertical legal-ethical framework should address the identified risks associated with the technology, with enforcement mechanisms tailored to low, mid and hi-risk applications.⁶⁷ In addition, the framework should contain incentives for sustainable innovation.⁶⁸ These incentives include balanced intellectual property laws⁶⁹, mission-oriented approaches driven by moon shot thinking such as the cold war Apollo project, as well as rules for healthy competition that prevent winner-takes-all effects and give room to both technology transfer and the creation of vibrant start-up ecosystems. Besides 'environmentally friendly', the term 'sustainable' also pertains to socially inclusive, human centered digitization, democracy, rule of law, and human rights.⁷⁰ Lastly, the binding horizontal-vertical rules should be flanked by quasi legal instruments such as technology road mapping tools.⁷¹

Technology road mapping tools like *ex ante* impact assessments, best practices and moral guides can help raising awareness of the societal impact of 4IR technology.⁷² These concrete tools can assist us in making sure we are modelling technology for good.⁷³ Moreover, these guides can offer support to companies in their endeavour to comply to, or anticipate on legal, technical and agreed upon ethical requirements.⁷⁴ To a certain degree, flexible tools can even be used as alternatives for non-existent or insufficient hard laws.⁷⁵ Thus, risk-based AI & quantum impact assessments, performed by multidisciplinary audit teams, can assist in validating that real world AI, data, quantum & VR driven products and services remain legal, ethical, social and technically robust throughout their life-cycle.⁷⁶

⁶³ See Kop, *supra* note 22.

⁶⁴ For a detailed description of linking AI to quantum considering regulation of 4IR technology, see: Kop, *supra* note 22.

⁶⁵ See Kop, *supra* notes 22 and 59.

⁶⁶ Kop, *supra* note 12.

⁶⁷ Kop, *supra* note 21 and 22.

⁶⁸ Kop, *supra* note 21, 22 and 59.

⁶⁹ See: Mauritz Kop, *The Right to Process Data for Machine Learning Purposes in the EU* (June 22, 2020). Harvard Law School, Harvard Journal of Law & Technology (JOLT) Online Digest 2021, Forthcoming, <https://ssrn.com/abstract=3653537>

⁷⁰ See also: Kop, *supra* note 20.

⁷¹ See also: Kop, *supra* note 59.

⁷² See Kop, Kop, *supra* notes 21, 22 and 40.

⁷³ See for example: <https://www.scientificamerican.com/article/can-ai-identify-toxic-online-content/> and <https://news.stanford.edu/2021/03/08/assessing-regulatory-fairness-machine-learning/>

⁷⁴ See also: CAHAI feasibility study on AI legal standards, <https://www.coe.int/en/web/artificial-intelligence/-/the-feasibility-study-on-ai-legal-standards-adopted-by-cahai>

⁷⁵ See also: Kop, *supra* note 22, Mark A. Lemley, *The Contradictions of Platform Regulation* (February 3, 2021). Available at SSRN: <https://ssrn.com/abstract=3778909> and

<https://www.technologyreview.com/2021/01/15/1016183/ai-ethics-startups/>

⁷⁶ Kop, *supra* note 61.

Following these steps, risks can be dealt with and the positive aspects of the technology can be employed to make the world a better place.⁷⁷

Please note that being an authoritarian regime isn't always a bad thing. The regimes can be far more effective in battling climate change, since they have the luxury to avoid lengthy multi-stakeholder debates.⁷⁸ Consensus is not needed. In that respect they excel in centralization, decisiveness, efficiency and speed. Democratic policy makers should build on these healthy habits.⁷⁹

In other words, being authoritarian doesn't mean one can't be successful in addressing the big questions we face. Countries don't need to be democratic for that.

9. Conclusion

The race for AI and quantum dominance isn't just a competition in technology and market power. It is as much a competition in norms, standards, principles and values.⁸⁰ It is expected that the prevailing party will set global technology requirements/guidelines for decades to come.⁸¹ Whoever wins the race for AI & quantum supremacy will impose their values on the rest of the world through the distribution of their technology. These technologies will become the dominant platforms.

We are living in a Golden Age of exponential technological innovation. Legal problems regarding human rights, algorithmic bias and built-in discrimination, data access, sharing and re-use may now be assumed to be generally known to policy makers. We should change the story. We must urgently solve these problems and set global technology standards together. Like-minded countries with compatible political systems must collaborate on socio-economic and ethical issues surrounding AI, data and quantum technology. We have an ideological commitment to bake our democratic values into our intelligent systems. This way, society can benefit from the benevolent side of the 4IR.

What should democratic governments do? To prevent authoritarianism from gaining ground, governments should do three things: (1) form a broadly scoped democratic Strategic Tech Alliance, (2) set worldwide core rules and standards for AI, quantum and VR, and (3) embed our common norms, principles, values into the design of our technology.

What can you do? You can participate by convincing your congresswomen or congressmen that the time is ripe to bolster a strong international Strategic Tech Alliance. Besides that, you can make conscious sustainable living choices about products and services that you purchase and use in your everyday life, and about (the origin & environmental footprint of, and democratic values embedded in) the technology utilized in those products and services. A better planet starts with you. You can also help by spreading awareness about the design decisions people around you -programmers, data scientists, managers, evangelists and business-leaders- can make. Conscious decisions that ensure 4IR technology is implemented in a responsible and sustainable manner.

⁷⁷ Note that innovation by itself cannot fix all the problems of humanity, see: Ünver, *supra* note 13.

⁷⁸ See also: <https://www.brookings.edu/blog/order-from-chaos/2020/12/23/the-risk-of-john-kerry-following-his-own-china-policy/>

⁷⁹ See also: <https://www.technologyreview.com/2021/01/01/1015533/covid-lessons-for-climate-change-emissions-renewables/>

⁸⁰ Kop, *supra* note 21.

⁸¹ See: <https://www.ces.tech/Articles/2020/Whoever-Leads-AI-Will-Lead-the-World.aspx>

The architecture of intelligent systems should articulate values that we consider important as a society, from the first line of code. Following this path, we can avoid a dystopian future and make technology a greater force for good.

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