



# The Implications of Emerging Technologies in the Euro-Atlantic Space

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Views from the Younger  
Generation Leaders Network

*Edited by*

Julia Berghofer · Andrew Futter ·  
Clemens Häusler · Maximilian Hoell ·  
Juraj Nosál

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ISBN 978-3-031-24672-2      ISBN 978-3-031-24673-9 (eBook)  
<https://doi.org/10.1007/978-3-031-24673-9>

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The registered company address is: Gewerbestrasse 11, 6330 Cham, Switzerland

*For Bob Berls*

# INTRODUCTION

This book is a joint project by members of the Younger Generation Leaders Network on Euro-Atlantic Security (YGLN), a network of emerging leaders which draws its membership from the Euro-Atlantic space. Rather than just presenting a compilation of different viewpoints on emerging technologies and their immediate and longer-term implications for societies, security and economies in the region, the book presents a broad range of perspectives. It includes a collection of ideas, analyses and perspectives from a geographically diverse group of next generation thinkers from Europe, Russia and North America, who have collaboratively worked on their chapters.

24 February 2022 marked a sharp break in the relationship between Russia and the West, and an even sharper break in the relationship between Russians and Ukrainians—be it in the cultural, civil society, or academic sphere. The work on this book, however, continued with a remarkable spirit of collaboration between the contributors from east and west. Even in the present circumstances, the YGLN brings together experts from all sides. The YGLN is a place where Russians and Belarusians talk to Ukrainians, Armenians talk to Azeris and where North Americans talk to their European colleagues on security matters, economic, political and technological trends as well as threats to humanity like climate change and nuclear war.

The Network started thinking about this book in late 2020, at a time when relations between east and west were already strained but did not

yet appear as bleak as today. Following the publication of a first book co-authored by YGLN members in 2020—*Threats to Euro-Atlantic Security: Views from the Younger Generation Leaders Network*—the participants in the Network shared a feeling that there would be value in joining forces once again for another academic, cross-regional project. The book we present here was also greatly motivated by the conviction that by collaborating on academic work, the YGLN creates and protects a safe space for scholars and professionals to meet and exchange ideas.

At the same time, the book aims to spread fresh, next generation thinking across the academic, think tank and policy communities. We sense that the implications of emerging technologies for our collective future would be a timely and important topic for a Network as the YGLN to address. Henceforth, the collection that we brought together mirrors different trends in the wide field of emerging and disruptive technologies and puts them in the context of various social, political and economic settings, from military applications, export controls, the struggle between liberal and illiberal forces on the Internet, to new trends that can help to tackle climate change—to name but a few.

The YGLN as a next-generation project is a natural hub for nourishing new ideas and for offering its members platforms to share them with a wider public. Since 2014, when the Network was launched in the wake of the emerging Ukraine crisis, it has provided a forum for exchange for the younger voices of emerging leaders across Europe, Russia and North America. Leaders come from a broad variety of professional and cultural backgrounds.

While the YGLN has doubled its membership since the establishment of the Network to more than 100, the tradition of strong interpersonal links, formal and informal meetings between members, intimate discussions in-person and online, as well as frank and open exchange, has persisted. Those members who have risen to influential positions and consider themselves alumni of the YGLN—working for instance at NATO, the U.S. State Department, as advisors for the United Nations or pursuing political careers—are role models for existing members and remain part of the YGLN family to support their peers.

Against this background, the book is to be understood as a project realised by colleagues who are closely collaborating with each other and who assist each other in developing their thinking—across cultural and political barriers.

Finally, the YGLN would not be as powerful as it is today without the tremendous support of senior leaders and experts from across North America, Russia and Europe. The Network continues to be extremely grateful for their help and advice. Amongst them, the co-editors would like to particularly thank Lord Des Browne, Ambassador (ret.) Jim Collins and Sir Adam Thomson for their passion for the network and their continued steadfast commitment to support the next generation of leaders. Above all, Robert E. Berls Jr. who was, until his passing in 2021, the staunchest supporter of the YGLN and a good friend and colleague to its members, deserves our highest gratitude.

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PART I

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# Politics and Geopolitics



# Digital Illiberalism and the Erosion of the Liberal International Order

*Pavel Kanevskiy*

## INTRODUCTION

The Internet was one of the most important technological innovations of the twentieth century, originating at the core of liberal international order (LIO). Three decades ago, the Internet was presumed to become a technology that would strengthen global liberalism because open information flows were seen as a natural continuation of freedom, supporting basic liberal and democratic principles. The creation of the Internet should be seen as a logical continuation of technological progress that is deeply interconnected with the spread of liberalism. But the liberalising promise of the Internet was put at risk by political authorities inside both authoritarian and democratic countries, as well as by “Big Tech” and populist, illiberal groups of different kinds. This chapter provides an overview of the underlying reasons that have led to the emergence of both digital liberalism and digital illiberalism, what implications these

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processes have on the liberal international order, and proposes policy recommendations for how to reverse illiberal tendencies in the digital sphere.

## TECHNOLOGICAL PROGRESS AND THE EMERGENCE OF LIBERAL INTERNATIONALISM

Technological progress and the evolution of liberalism can be seen as naturally interdependent. Liberties and liberal institutions deriving from the era of the Enlightenment established conditions for human creativity, social and political progress. Liberalism created the premises for innovation and inventions that provided people with new means to do things, increased benefits and lowered costs. Innovation became the driving force of the industrial revolution in the West and laid the foundations of modern economies.

The strong link between liberalism and technological progress was the key factor behind the evolution of liberal democracies and the liberal international order. From the liberal colonial empires of the nineteenth century to the post-Cold War order, the technological superiority of the Western countries was the foundation of their central role in global politics and the global economy. Technological progress had steadily increased monetary and political returns for industrialised and liberal states and created preconditions for stronger connectivity inside the liberal core. Globalisation, the internationalisation of the chains of production, and improved links between capitalist hubs across the world technologically drove the liberal order in the second half of the twentieth century. Hence, technologies were shaping and strengthening liberalism both domestically and globally. The interconnection between globalisation and technological progress also explains the remarkable stability of the post-WWII Western order and its ultimate technological superiority by the end of the millennium. It facilitated economic growth, encouraged the flow of knowledge and technology and drew states together.<sup>1</sup> The spread of liberalism resulted in the emergence of the truly integrated global system

<sup>1</sup> G. John Ikenberry, "The End of Liberal International Order?", *International Affairs*, 94:1 (2018), p. 17.

in the nineteenth century even though not all members of this system were fully open and democratic societies.<sup>2</sup>

At the same time, members of the liberal order had to adjust to a growing technological complexity. A grand debate on who controls technologies and, in whose interest, dates back to the early stages of industrial capitalism, although it was not until the twentieth century that widely accepted regulatory frameworks were created by states.<sup>3</sup> Had the modern regulatory state not developed, the negative effects of industrialism would likely have overshadowed its positive ones. However, the exact balance between regulation and freedom has changed over time. Technological progress has had both benefits and drawbacks for liberal societies because of its strong impact on labour markets, distribution of resources and social inequality.

Waves of industrial progress strengthened the link between liberalism, technological progress and capitalism. One of the key reasons why technological development became highly interconnected with liberalism was the adoption of experimental methods within liberal communities. But whereas in most parts of the world science and innovation existed without much practical application, in early liberal societies, primarily in Great Britain, it became an element of industrial production when business people understood the benefits of relying on experiments and scientific research. As Jack Goldstone argues, England in the eighteenth and nineteenth centuries was the first country in which a combination of “educated workforce, freedom of ideas, technological innovation, and the application of scientific engineering to industry” created a new model of economic growth and set an example for other nations to follow.<sup>4</sup> States that managed to build strong institutional and cultural ties between liberty, creativity, innovations, inventions and the market economy benefitted the most. They became more developed economically and technologically which in turn amplified their power and capabilities

<sup>2</sup> Ronald Findlay & Kevin H. O'Rourke, *Power and Plenty: Trade, War, and the World Economy in the Second Millennium*, (Princeton University Press: 2007) pp. 395–414.

<sup>3</sup> Larry Neal & Jeffrey G. Williamson (eds.), *The Cambridge History of Capitalism* (Cambridge University Press: 2014), pp. 82–126.

<sup>4</sup> Jack Goldstone, *Why Europe? The Rise of the West in the World History, 1500–1850* (George Mason University: 2009), p. 172.

globally. These processes also fostered the emergence and strengthening of more inclusive institutions that made societies more open and promoted the culture of innovation.<sup>5</sup>

The deep interconnection between liberalism, technological progress and the economy was one of the centrepieces of Modernisation Theory of the twentieth century.<sup>6</sup> This theory was criticised multiple times, mainly from a Marxist and Dependence Theory viewpoint.<sup>7</sup> Doubts have also been raised about whether capitalism and technological innovation can survive without liberalism.<sup>8</sup> The major weakness of such criticism is that although it poses many deep questions on the nature of capitalism, democracy and societal development, it doesn't really break the logical tie between liberalism and technological progress.

For example, Germany was economically and technologically backward at the beginning of the nineteenth century, but had managed to reach high levels of scientific and industrial development in the second half of the nineteenth century while remaining a predominantly authoritarian state. As noted by Daron Acemoglu and James Robinson, Germany's economic institutions in the late nineteenth and early twentieth centuries became more inclusive even as its polity remained largely authoritarian.<sup>9</sup> To understand the German phenomena, it is worth remembering that although not being a part of the liberal order in the strict sense of the word, Germany was not completely illiberal. Centres of economic and technological progress in the Western parts of Germany had long-standing traditions of decentralised governance, trade and science. Civil codes like Prussia's *Allgemeines Landrecht* had protected private property since at least the late eighteenth century, and in the early nineteenth century the *Code Napoleon* with its ideas of constitutionalism and the rule of law were becoming particularly visible in places like Rhineland

<sup>5</sup> Trygve R. Tholfsen, "The Transition to Democracy in Victorian England", *International Review of Social History*, 6:2 (1961), pp. 226–248.

<sup>6</sup> Walt W. Rostow, *The Stages of Economic Growth*, (Cambridge University Press: 1960).

<sup>7</sup> Herbert Marcuse, *One-dimensional man: Studies in the Ideology of Advanced Industrial Society*, (Beacon Press: 1991), p. 260; Andre Gunder Frank, Barry K. Gills, *The World System: Five Hundred Years or Five Thousand?* (Routledge: 1996), p. 344.

<sup>8</sup> Branko Milanovic, *Capitalism, Alone: The Future of the System That Rules the World* (Harvard University Press: 2019), p. 304.

<sup>9</sup> Daron Acemoglu and James A. Robinson, *Why Nations Fail: The Origins of Power, Prosperity, and Poverty*, (Crown Business: 2012), p. 546.

and Westphalia.<sup>10</sup> Furthermore, the pre-WWI autocratic regimes with their growing middle classes and fast urbanisation had to integrate and accept elements of freedom and plurality without which it would've been impossible to sustain the necessary levels of scientific knowledge and entrepreneurship. The same logic is applicable to a certain degree to Japan or Russia in the nineteenth and early twentieth centuries.

Centralised illiberal states of the twentieth century like Nazi Germany and the Soviet Union made a new series of attempts to build competitive technological infrastructures in the twentieth century. They were successful in the military domain and in using technologies for mass mobilisation and total state control. For totalitarian regimes, technologies were used largely for the coercive needs of the state and became multipliers of their power at home and abroad. Innovations were allowed to the extent that they contributed to regime survival. This level of technological progress was enough to compete with the Euro-Atlantic liberal powers on the global stage but had limited potential for societal and economic development at home.

The Communist system was the longest-standing illiberal and undemocratic alternative to the liberal order. Soviet science was able to produce ground-breaking success in space technologies, nuclear physics and chemistry. However, despite high levels of education, scientific breakthroughs and a stable if modest quality of life, innovation and technology never became drivers of societal and economic change under Communism. As Chi Ling Chan rightfully argues, that was mainly because of the “extensive military-industrial black hole exhausting the Soviets of key resources” as well as “the ideological capture of science... and structural disincentives against innovation.”<sup>11</sup> The domination of a top-down approach and the absence of markets never allowed for the creation of a proper link between science, innovation and the economy. Loren Graham suggests that this is because the Soviet Union (as well as contemporary Russia to a certain degree) never “fully adopted the modern view that making money from technological innovation is an honorable, decent, and admirable thing to do.”<sup>12</sup> The Soviet Union was able to compete with the West

<sup>10</sup> Ewald Grothe, “Model or Myth? The Constitution of Westphalia of 1807 and Early German Constitutionalism”, *German Studies Review*, 28:1 (2005), pp. 1–19.

<sup>11</sup> Chi Ling Chan, “Fallen Behind: Science, Technology, and Soviet Statism”, *Intersect*, 8:3 (2015), p. 1.

<sup>12</sup> Loren Graham, *Lonely Ideas: Can Russia Compete?* (The MIT Press: 2013), p. 103.

primarily because it created modern weaponry, but it never became a true competitor in the global economy. Gaps in key areas such as microchips and mechanical engineering only accelerated Soviet technological and economic decay. The Soviet example demonstrates that while innovations and technologies may serve the narrow purposes of the autocracy, the inability to link innovations and technologies with societal and economic progress inevitably weakens illiberal regimes from the inside.

Contemporary China represents the latest example of the predominantly authoritarian system that managed to build a strong economy and to be able to compete with the West in many technological areas. According to Global Innovation Index, in 2021 China ranked 12th among the 132 economies, up 22 positions from ten years earlier.<sup>13</sup> China heavily invests in critical technologies such as artificial intelligence, semi-conductors and the space industry, although it is still far from being a leader in any of these areas.<sup>14</sup> China is just another example of when modernisation, economic and technological progress become possible after a series of semi-liberal reforms. The new thinking of Deng Xiaoping as well as favourable geopolitical, trade and demographic conditions of the 1980s, 1990s and 2000s resulted in significant economic growth and boosted China's technological potential. However, just like the Soviet Union before China faces serious challenges in building a truly competitive technological economy in a situation when Xi Jinping and the ruling elite appear unwilling to reform the system further.<sup>15</sup>

## THE RISE OF DIGITAL LIBERALISM

With the rise of the Internet and digital technologies championed by the West, the structural leadership of liberal democracies in the global system became ever more evident. The Internet surfaced as the game-changing

<sup>13</sup> Global Innovation Index 2021. China, [https://www.wipo.int/edocs/pubdocs/en/wipo\\_pub\\_gii\\_2021/cn.pdf](https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2021/cn.pdf) (Accessed 10 August 2022).

<sup>14</sup> Dennis Normile, "A Beijing Think Tank Offered a Frank Review of China's Technological Weaknesses. Then the Report Disappeared", *Science* (8 February 2022), <https://www.science.org/content/article/beijing-think-tank-offered-frank-review-china-s-technological-weaknesses-then-report> (Accessed 10 August 2022).

<sup>15</sup> Hal Brands, "The Dangers of China's Decline", *Foreign Policy* (14 April 2022), <https://foreignpolicy.com/2022/04/14/china-decline-dangers/> (Accessed 10 August 2022).

technology at the turn of the millennium. When Tim Berners-Lee invented the World Wide Web in 1989 for the purpose of information exchange between scientists and institutions, few could have imagined the revolutionary impact it would soon have on communication and the global economy. The Internet played a crucial role in the expansion of the liberal international order not only through increased returns, but it also created a new communication infrastructure that allowed the LIO to strengthen and expand in the post-Cold War era.

According to Daniel Deudney and John Ikenberry, the post-1945 international liberal order was comprised of several key elements: security and economic co-binding; the consensual, cooperative and integrative nature of the American hegemony; the availability of mutual gains through the expansion of capitalism and free trade; the role of the Western liberal civic identity; the presence of semi-sovereign powers like Germany and Japan that reinforced the liberal order rather than the balance of power.<sup>16</sup> It is through these elements that the liberal international order became the foundation for solidarity, cohesion and cooperation between states.

The Internet successfully supported these elements in a number of ways, especially during the “golden era” of globalisation and liberalisation of the 1990s and the early 2000s. Foremost, it became a crucial tool for democratisation, and the expansion of liberal views and ideas. For the United States an open and free Internet was crucial for ensuring peace and prosperity at home and abroad as it helped to sustain American economic and political hegemony. The Internet was part of the “end of history” *zeitgeist* because it was considered as a natural continuation of the Western ideological, economic and technological superiority. Henry Farrell and Abraham Newman point out that the United States had managed to restructure the LIO with the use of the Internet, believing that “open communication would become self-reinforcing over time, strengthening democracy within liberal states and spreading democracy and liberal values to autocratic regimes.”<sup>17</sup>

<sup>16</sup> Daniel Deudney & G. John Ikenberry, “The Nature and Sources of Liberal International Order”, *Review of International Studies*, 25 (1999), pp. 179–196.

<sup>17</sup> Henry Farrell & Abraham L. Newman, “The Janus Face of the Liberal International Information Order: When Global Institutions Are Self-Undermining?”, *International Organization*, 75 (2021), p. 337.

According to Larry Diamond, the Internet had great advantages compared to earlier technologies. Its decentralised character and ability to reach large segments of the population were well-suited to grass-roots movements. The Internet's capability to empower citizens in their desire to play a bigger role in politics and combat authoritarian regimes made it a perfect "liberation technology."<sup>18</sup> Indeed, this new communication infrastructure became one of the pillars of the Euro-Atlantic security model based on a combination of military force, economic and technological power and attractiveness of the Western model of development.

The principles of open access and the unrestricted flow of information were crucial in supporting the growth of interconnected global liberal networks. It created a platform for improved communication within the global civic and capitalist communities. It was the driving force behind the strengthening of what Robert Keohane and Joseph Nye called "complex interdependence:"<sup>19</sup> that the unwinding informational revolution fundamentally changes the world in which force matters less and countries are increasingly interconnected.<sup>20</sup> The neoliberal approach towards global networks was based on the assumption that their existence resulted in reciprocal dependence that made coercive behaviour less effective, while stimulating mutually beneficial cooperation between states, corporations and civic groups. A network-based liberal order led to the creation of multiple information and communication hubs which made it harder for separate states to control them.<sup>21</sup> This, in turn, fostered decentralisation, more freedom in international agenda-setting and hence strengthened the key principles of the LIO. Liberal networks existed long before the Internet, but digital liberalism reinforced their strength and efficacy while creating new communication channels for them. This is especially relevant in regard to international businesses and non-governmental organisations that received a new tool for communicating and advocating their agendas in the transnational and supranational space.

<sup>18</sup> Larry Diamond, "Liberation technology", *Journal of Democracy*, 21:3 (2010), pp. 69–83.

<sup>19</sup> Robert O. Keohane & Joseph S. Nye Jr., *Power and Interdependence* (Longman: 2001).

<sup>20</sup> Robert O. Keohane & Joseph S. Nye Jr., "Power and Interdependence in the Information Age", *Foreign Affairs*, 77:5 (1998), p. 83.

<sup>21</sup> *Ibid.*

The deep connection between online technologies and networks of interdependence challenges the opinions of some authors claiming that digital liberalism did not fulfil its main objective—that of increased international liberalisation.<sup>22</sup> New communication spaces allowed major civic and capitalist forces around the world to better coordinate their activities, strengthened business ties and played a huge role in the development of international civil society. That of course didn't mean that the Internet was able to change the structure of world politics. After all, as Keohane and Nye rightfully observed, "information does not flow in a vacuum but in political space that is already occupied."<sup>23</sup> Hence, the Internet was just an additional layer of the complex interdependence that made communication and transnational flows easier but didn't become fully independent of politics. This also posed a dilemma—largely unsolved to this day—of whether the Internet is a technology of freedom or it is a technology of control.<sup>24</sup>

Consequently, one of the biggest challenges for many Western and especially American experts and policymakers since the 1990s was to make sure that the Internet and its underlying communication system stayed within the liberal agenda. This challenge shaped the American approach towards Internet governance. At the core of that thinking was the idea that the Internet—with all the benefits it creates for the liberal order—must not include any barriers or strict norms. In other words, it should be left as a largely unregulated technology because that was the only way for it to support the LIO naturally; to remain as a tool of the invisible hand of democratisation and liberalisation; and on top of that to let the United States strengthen its role as the key stakeholder in LIO. This goal was meant to be reached under two main conditions: the open and unregulated nature of the Internet, and American "smart supervision" designed to guarantee that no other state had the capacity to shape the virtual space according to their views and national interests. Greater multilateralism in governance of the Internet was traditionally perceived by American decision-makers as a threat to its democratic and liberal nature.

<sup>22</sup> Henry Farrell & Abraham L. Newman, "The Janus Face of the Liberal International Information Order: When Global Institutions Are Self-Undermining?", *International Organization*, 75 (2021), p. 342.

<sup>23</sup> Keohane & Nye, "Power and Interdependence in the Information Age", p. 84.

<sup>24</sup> Ronald Deibert & Rafal Rohozinski, "Liberation vs. Control: The Future of Cyberspace", *Journal of Democracy*, 21:4 (2010), p. 44.