Technology: A Path Towards A More Collaborative World Order?

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Ever since the advent of the Westphalian system, technology has fueled the rise and dominance of great powers. War machines of belligerent states have banked on the scientific prowess of their researchers in search of competitive advantage over others. The British Empire in the eighteenth and nineteenth centuries owed its vast territory in large measure to its superior technology in the naval realm. Post-World War II hegemony of the superpowers was also backed by advances in weapon systems, including nuclear weapons. The science and technology community has also benefited from states' investments in research and development in their quest for more advanced military technologies. Many civilian technologies used widely today—like computers, the Internet, and GPS—had their roots in military laboratories.

Although non-military technologies have spread quickly around the world, riding on the back of collaborative culture in the scientific community, there is an increasing global competition for "new world" technologies like artificial intelligence, robotics, quantum computing, the "Internet of Things," and beyond. While countries still compete for territory, the geopolitics of technology is likely to gain salience in the near future, and geopolitical competition will shape the new world order in ways that are likely to increase disparities between states.

At the root of these contestations is the impression that these technologies will prove critical for states in securing not only their own security,

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but also the future well-being of citizens. The securitization of new technologies has further intensified competition in this field. The developed world, with its inherent advantages in technology, is likely to further build upon its strengths. The Global South is likely to fall behind further unless states pursue a proactive approach to developing an equitable technological world order. This approach needs a spirit of collaboration regarding new technologies to develop among states both bilaterally and in multilateral organizations. As the world faces an unprecedented challenge posed by the coronavirus pandemic, the need to collaborate has never been greater.

THE BATTLE FOR DATA

The innovation of the developed world has created a so-called "Fourth Industrial Revolution." The economic gains accruing from this new industrial revolution have data as their foundation. In the summer of 2013, the world learned that the U.S. National Security Agency had been collecting phone and email metadata on a large scale in Europe.[1] Since then, several countries and "Big Tech" companies like Facebook and Google have been accused of misusing private user data for commercial gains.[2]

These developments demonstrate that as digital platforms gain more importance in the world economy, the battle over data is only likely to intensify. For the players to engage in a fair competition, the world needs to have a global governance framework that addresses concerns regarding data protection and privacy and maximizes global welfare. As ideology is no more the main element of competition in the post–Cold War era, technology has emerged as a point of both convergence and divergence for countries. Innovations like telecommunication technologies and Artificial Intelligence (AI) build bridges, but also cause concern for many countries that feel their security can be compromised if countries that do not share their values have access to citizens' data. This was most recently evident in the pushback that global telecommunications company Huawei received from many countries regarding its 5G network technology.

The developing world, with its large population, can provide the data on which this industrial revolution can expand further. As this population is also young and is growing at a faster rate, the developing world has a great opportunity to benefit from increasing importance of data. But for that data to be properly harnessed, developing countries need to view it as a resource that can be used for their own benefit. The developing world also needs to establish domestic rules and norms to thwart any attempts to exploit their data.

However, this approach toward national data sovereignty in no way should hamper the use of data to achieve the development goals of these countries. Many countries view data as a resource requiring protection over concerns for privacy of citizens as well as security and economic considerations. The European Union (EU), China, the United States, and Russia have their own data protection laws.[3] According to EU's General Data Protection Regulation (GDPR), personal data of EU citizens can only leave EU's shores if destination countries have adequate levels of protection. Similarly, the great Chinese firewall is a strong barrier for international data flows in China. Russian law also requires personal data to be processed and stored on Russian territory. U.S. data protection laws are also backed by strong privacy laws. These developments all indicate a greater focus on data sovereignty.

AI ON THE FRONTLINES

While we still do not have a global data governance model, there is already an urgency to institute an artificial intelligence governance structure. AI involves machines learning from past data so that they can replicate human capabilities.[4] The geopolitical impact of AI is both military and economic. Developed countries would like to build upon their commercial edge with AI tools available to them. This will increase the gap between the digital haves and have-nots. On the other hand, developing countries like India that are data-rich would try to leapfrog and level the playing field with more advanced players.

Development and use of AI in weapon systems also presents new challenges.[5] AI-driven platforms may improve accuracies and reduce the need for deployment of manpower on the frontlines, thereby significantly altering the nature of warfare.[6] There is a realization among the policy community about the current need for international norms and standards and eventually multilateral treaties governing the use of AI. However, there are two problems with these efforts at present. Firstly, most countries need to set up national legal frameworks and infrastructure to deal with AI before they can go about discussing setting up an international toolkit. While some countries have begun these initiatives, most countries are still relying on rules and regulations created for managing information technology and cyber issues.

Secondly, countries like the United States and China, which are already far ahead of the rest of the world in the development of AI, would not like to be constrained by norms and laws until the time they feel that

these norms will be in their interest, probably to control a rise in the relative power of their rivals. As the United States and China are the most advanced countries in the AI sphere, it may be a good idea to flesh out bilateral norms so that the weaponization of AI does not go unchecked.

The UN Group of Governmental Experts (UNGGE) of the Convention on Certain Conventional Weapons (CCW) on emerging technologies in the area of Lethal Autonomous Weapon Systems (LAWS) has worked for about a decade to arrive at a consensus on the definition of a Lethal Autonomous Weapon and whether a blanket ban should be imposed on such weapons or other options explored.[7] UNGGE is trying to address the humanitarian and security challenges these weapons can potentially create. Of some twenty-five countries in UNGGE, China supports a ban in principle, but only on the use of LAWS and not their development. France and Germany oppose the ban for now but want states to agree on a code of conduct with enough elbow room to consider their national concerns and interpretations.

At the other end of the spectrum is a group of countries including the United States, the United Kingdom, and Russia, which totally oppose the ban.[8] These countries insist that existing international humanitarian laws provide sufficient checks on all future systems. India is reserving its position. It does not want technological have-nots to be locked out of a game-changing weapon system because of a discriminatory treaty. This diversity of views and sharp divergences among major powers shows that we are still a long way from a comprehensive treaty on AI, but it is definitely a good time to give it some momentum.

EMERGING TECHNOLOGIES AND INEQUALITY

Internet access is improving globally. At the same time, a pattern of unequal distribution of the benefits of the Internet is also emerging. For "new world technologies" to be used productively, technical and financial resources are needed. Many parts of the world are struggling to get access to stable internet connectivity, and some parts are marching ahead with ultrafast internet. This digital inequality is likely to be compounded by the pandemic.

The digital economy has played a central role during the global pandemic crisis. Countries that have stable Information and Communications Technology (ICT) infrastructures have managed to achieve efficient information dissemination. They have also been able to better manage the transition to online education. E-commerce has been able to mitigate supply

chain constraints to a large extent in countries with advanced ICT infrastructure. However, the pandemic has also brought to the foreground problems faced by small producers, businesses, and consumers in developing countries and least-developed countries. The need for affordable and reliable ICT infrastructure has never been felt so much.

As the scale of the pandemic challenge is global, the response to it needs to be global too.

As the COVID-19 virus rampaged through continents, the need for a collaborative approach in vaccine development, patient-care, supply of medicines and protective gear was evident. Developed countries like the United States provided ventilators to countries like India. On the other hand, India exported personal protective equipment to the United States. While healthcare remains an area where collaboration, rather than competition, should seem natural, we still see competition between companies in developing vaccines and between countries in acquisition of the same. Such competition further reinforces the need of developing a collaborative global framework for sharing of technologies between the rich and the poor, the developing and the developed nations. A starting point for developing such a technology-sharing framework could be the bilateral technology cooperation between developing and developed countries like India and the United States.

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Keeping the centrality of the digital economy in the global response to the pandemic, it is expected that the pandemic may strengthen international cooperation in the field of new and emerging technologies. Narrowing the digital divide within and between countries and levelling the playing field for small- and medium-sized enterprises should be the top priority of any global dialogue on technology such as the Osaka Track at the G20 or the e-commerce negotiations at the World Trade Organization (WTO).

As countries look towards developing new frameworks of cooperation in global digital governance, there are also some apprehensions. A genuine fear about AI is that capital-rich countries will benefit more, and labor-rich countries will suffer as jobs shift towards automation. It is true that developed countries have an advantage, as innovation tends to benefit

countries that have an abundance of intellectual capital. Some of the biggest companies in the world today either operate on digital platforms or deal in digital technologies. While the innovators and investors have made huge profits and those with high skills have benefitted, there is a crisis at the lower-skill end of the spectrum. Until the time when low-skilled labor in advanced countries shifts to higher skills required in the new world technology industry, wages are likely to stagnate. This is likely to amplify inequities in developed societies as well.

Moreover, there are genuine fears that some machine learning does not work as it should. During the COVID-19 crisis, when in-person examinations were cancelled by some educational institutions and students were graded through algorithms, the grading showed inherent bias against students from underprivileged backgrounds.[9] Similarly, algorithmic assessment systems used for recruitment systems can be manipulated easily.[10]

At the same time, new age technologies have provided many benefits to developing countries. India has used technology for connecting more than 400 million people to banking services. The digital identity provided by the "Aadhaar" card has been successful in rooting out corruption by enabling direct benefits transfer to the poor. Access to the Internet in remote parts of India has provided farmers crucial information regarding their produce and has also improved skill levels of the youth. Another example is found in the work of Solomon Kembo, of the University of Zimbabwe, who has brought AI to one of the poorest communities in Harare. He uses AI in the off-grid Urban Farming projects and has been able to attract youth to "Internet of Things" projects.[11] These examples show that developing countries can use new technologies to reduce inequalities in their societies—but this is only possible when labor-intensive industries are not hurt by increasing automation.

EXISTING MECHANISMS FOR GLOBAL TECHNOLOGY GOVERNANCE

The United Nations plays an important role in developing norms for information and communication technologies through its specialized International Telecommunication Union (ITU). ITU was founded in 1865 and since then has facilitated international communication by allocating satellite orbits and spectrum for radio networks. While ITU strives to develop global technical standards for seamless connectivity, it has still not focused on the new emerging technologies based on "big data." For its part, the World Bank, in its World Development Report 2016, noted that the digital economy transcends the Information and Communications

Technology (ICT) sector.[12] However, many governments and international organizations continue to treat digital economy with a focus on developing ICT infrastructure.

The differences in approach on global cyberspace governance among major powers were evident when in November 2018, the UN General Assembly adopted two resolutions. Under a Russian initiative, one resolution established an "Open-Ended Working Group" on developments in the field of ICTs in the context of international security. This group was established to study the existing norms and identify new norms, and it called for a regular institutional dialogue within the UN. Another resolution sponsored by the United States created a new "Group of Governmental Experts" (GGE) focused on compliance of existing cyber norms by states.[13]

Additionally, the WTO started its work early on digital technologies. In May 1998, the Second Ministerial Conference of the WTO made a "Declaration on Global Electronic Commerce." Through this declaration, WTO members committed to work towards a "comprehensive work program to examine all trade-related issues relating to global electronic commerce."[4] Since then, the WTO has shown limited success on e-commerce and digital economy. E-commerce rules are yet to be debated at the WTO and therefore agreements look daunting in the short-term. Early steps towards developing a global framework for a digital economy were taken in June 2019, when on the sidelines of G20 summit in Japan, the "Osaka Track" was launched.[14] This is an initiative to show the commitment of members of the G20 to support policy discussions and rule-making on trade-related aspects of e-commerce at the WTO. As digitalization of international trade gathers momentum and presents new opportunities, initiatives like the Osaka Track need to gather momentum at the WTO.

COOPERATIVE FRAMEWORKS FOR A TECHNOLOGY-LED FUTURE

As the race for AI and next-generation technologies heats up, we may find them not only at the core of contestations, but also at the center of new frameworks for cooperation between countries. New alliances, as well as bilateral, plurilateral and multilateral structures, may give technology cooperation much higher salience than before. The existing security frameworks put territory at the center and are mainly regional in approach. On the other hand, the complementarities of the developing and the developed societies for the progress on new technologies may push nation-states away from regional approaches and toward architectures that give more importance to shared values.

The recent developments regarding Huawei's 5G technology show that several countries will develop alternative 5G networks. [13] The security concerns regarding Huawei will also force like-minded countries to come together to develop interoperability with the alternative 5G networks. The United States has launched "The Clean Network" program in order to safeguard American assets, privacy of citizens, and sensitive information of companies against attacks by malignant actors.[16] Washington has also identified several telecommunications companies around the world that have vowed to use non-Huawei 5G networks, and has called them "Clean Telcos." Although security concerns seem to be driving these initiatives, a collaborative framework is definitely in the cards.

CAN INDO-U.S. TECHNOLOGY COLLABORATION EMERGE AS A MODEL FOR THE WORLD?

Technology cooperation between India and the United States could be a great example of how countries from the Global South can collaborate with advanced countries in the development of data-driven technologies. Both countries have worked closely on multilateral platforms on confidence building measures, capacity building, and norm-setting in cyberspace. India and the United States signed a Cyber Framework in August 2016 and have since had multiple consultations on digital technologies and cyberspace.[17] This framework of cooperation has led to cooperation in the fields of law enforcement, capacity building, computer emergency response cooperation as well as cooperation in the field of testing and standards. Both countries have also worked closely on multilateral platforms on norms of state behavior and confidence building measures in the cyber sphere.[18]

The complementarities between the two countries are obvious. While the United States is the most advanced cyber power, India is the largest digital democracy in the world. The technology industry in the United States is powered by the talent and hard work of Indian engineers. At the same time, India's IT services industry is reliant on U.S. clients. The booming digital platform economy in India has attracted significant investments from American behemoths like Walmart and Facebook. The strong base for this cyber-cooperation is provided by the shared values of freedom and democracy.

The Cyber Framework of 2016 provides a good starting point for both countries to develop a joint cooperation framework in the new emerging technologies, since they have a shared interest in mutually beneficial models of data governance. This Framework provides for a commitment by both

countries to an open, interoperable, secure, and reliable cyberspace environment, a commitment to promote the internet as an engine for innovation and economic growth, and a commitment to promote free flow of information. The new policy frameworks for cooperation between India and the United States should not only protect the national interests of the two countries but should be able to act as a model for the world for developing an inclusive global digital ecosystem.

LOOKING TO THE FUTURE OF DIGITAL GLOBAL GOVERNANCE

As data-centrism or "datafication" of the global economy accelerates with the rise of the digital platform economy, advancement in big data management, and development of artificial intelligence, there is no option but to develop a sustainable digital global governance model. Any such model should not only be able to regulate but also to encourage participation. A global regulatory policy environment that facilitates innovation across geographies is the need of the hour at this juncture in the development of emerging technologies.

As the process of digitalization gathers pace and data becomes a more important resource for economic growth and production, there is a need for countries to see this process in the context of global supply chains as well as their own domestic environments. This is especially important for developing countries, as they may not be ready with their digital infrastructure to fully leverage emerging technologies for development. Digital inclusion of developing countries on a global scale will not only result in more efficient use of limited resources, but will also be important in ensuring peace and stability in many conflict-prone regions of the world.

The universal impact of AI and related technologies requires a global governance model so as to avoid conflict and confrontation between stakeholders. The power of data as well as digital solutions emanating from data could benefit humanity without any geographical and sectoral discrimination. Those who have access to data and those who have the tools to understand and analyze that data need to come together. This is important to prevent a new "digital divide" emerging among nations. Poorer countries in Asia, Africa, and South America face the risk of being left behind in this new race for AI enabled technologies. This will adversely impact future of these emerging technologies as inclusive tools.

Technology has been at the forefront of promoting globalization by promoting interactions which could transcend the tyrannies of geographical separations. However, a lack of collaboration on technology could

very well become an important factor in the retreat of globalization. The global governance of the new digital world need not follow the realist paradigm, which has marked global security governance. A liberal institutional approach can lead to the development of a transnational agency. Regulation of the new and emerging technologies and harnessing data for mutual benefit is the need of the hour. ***f***

ENDNOTES

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