INDIA'S G20 PRESIDENCY:

PROMOTING TRUST AND INCLUSIVITY
IN A DIGITAL WORLD

May 2021 | *No. 008*

ESYA
centre

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ABOUT THE ESYA CENTRE

The Esya Centre is a New Delhi based technology policy think tank. Its mission is to generate empirical research and inform thought leadership to catalyse new policy constructs for the future. It aims to build institutional capacities to generate ideas that will connect the triad of people, innovation, and value to help reimagine the public policy discourse in India. More details can be found at esyacentre.org.

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SUMMARY

- Since its inception in 2008 amidst the global financial crisis, the G20 has emerged as the premier forum for discussions and rulemaking on international finance. A clearly defined mandate, and limited yet representative membership, have helped it succeed in dealing with financial issues. Its initiatives in labour and employment have not yielded similar success, owing to the lack of global consensus and an ill defined mandate.

- Over the past few years and especially since 2016, digital technologies form a central part of the G20 agenda. Their similarity in characteristics to the global financial system makes the G20 a suitable forum to discuss the regulation and use of digital technologies. Growing assertions of national sovereignty threaten to fragment the digital landscape, and require a global, inclusive discussion.

- India will assume the G20 presidency in 2023. As an emerging digital powerhouse it must set the agenda on digital technologies to benefit the international community while serving domestic interests. This report outlines the foundation of such an agenda.

- We base the digital agenda on two central objectives: developing a language of trust among member nations, and augmenting knowledge and capacity building to reduce the digital divide. Pursuing these objectives will also prevent fragmentation of the digital landscape, creating a level playing field between developed and developing economies.

- We identify seven focus areas to pursue these objectives during India's tenure. They are founded on a survey of previous developments and initiatives at the G20. They also demonstrate the progress made by the Government of India in creating effective public-facing digital goods and services for its Digital India mission.

    1. **Digital corridors**
    The creation of digital corridors to facilitate free flows of data, skills, and expertise beyond borders in specific domains. Such corridors could be developed first in the healthcare domain. The pandemic shows the need for international cooperation to address emerging threats to the health of citizens, as well as the role of technology in achieving positive health outcomes. India should propose a working group to discuss crossborder flows of health data, and standards and adequacy requirements for crossborder telemedicine.

    2. **Digital infrastructure**
    The efficiency of traditional infrastructure is substantially increased by superadding digital sensors, machines, and other devices. Digital infrastructure has formed a key part of the G20 agenda over the past two years. As regional differences in digital readiness can skew the benefits of digital infrastructure, it is important to bridge gaps in digital readiness across member states. India could pilot a 'digital twins' initiative that would pair cities across member nations and assist them in implementing projects in digital infrastructure.

    3. **MSME capacity building**
    The G20 has on several occasions recognised the important role played by MSMEs in the world economy, identifying measures for member states to make MSMEs more competitive, such as by adopting digital technology. India should build on these developments by promoting inclusive global value chains. This can be achieved by promoting investments in MSME technology adoption, and by easing the regulatory compliance burden for MSMEs trading internationally.

    4. **Open data and innovation**
    The Government of India has attended considerably to the use of public data for evidence based policy making and efficient public service delivery. This domestic experience could be used to review the implementation of the Anti-Corruption Open Data Principles adopted by G20 member states in 2015. India could propose to broaden the scope of these principles to include other uses of open data, such as service delivery through the cloud, or to create interoperable digital ecosystems.

5. Technical cooperation

The transformative and cross-cutting impact of digital technologies requires member states to adopt new and innovative forms of regulation. Prior G20 initiatives have sought to identify global best practices for technology regulation to help member states implement urgent structural or regulatory reforms. India could take this a step further, by convening regulatory bodies and stakeholders into an engagement group called the R20. The R20 would be a forum to discuss key issues in digital technology regulation, such as international standards for information security and privacy, or regulatory sandboxes to enable experimentation and innovation in financial technology.

6. Regional cooperation

The last decade has seen an increase in the importance of regional blocs and groups. The Indo-Pacific is one such region centrally important to the global community. Besides traditional maritime and security issues it is faced with the growing threat of cybercrime, a threat that can be combated by building synergy and promoting cooperation between concerned organisations in the region. As several Indo-Pacific nations are members of the G20, India could pilot joint training initiatives bringing together officials from law enforcement agencies and CERTs, to build capacity and facilitate crucial information sharing to tackle cybercrime swiftly and securely.

7. Framework for emerging technologies

Emerging technologies such as artificial intelligence and 5G have the potential to revolutionise society. To ensure they are used to achieve positive outcomes, it is important to agree upon common frameworks in keeping with 'Society 5.0' or a human centred approach. The regulation and use of such technologies must align with fundamental values of justice and equity. In its tenure India should propose to evolve common frameworks for three transformative technologies: artificial intelligence, machine-to-machine communication, and central bank digital currencies.

1/ **OVERVIEW**

The first G20 leaders' summit was held in 2008 in Washington, D.C. to devise a unified and comprehensive response to the global financial crisis. G20 initiatives to improve financial reporting and accountability have made great strides since the conference.[1] Yet in areas such as labour and employment the G20 has taken on a mandate too wide and ill defined, and the missing global consensus in these realms has greatly hindered the efficacy of its initiatives and proposed interventions.[2]

The success of early G20 initiatives in finance stemmed from the urgency of the challenge of the global financial crisis. Deep institutional linkages between financial bodies compelled governments to undertake a unified response, and create international financial institutions such as the Financial Stability Board. The G20's representative but limited membership, consensus building approach, and forums that include countries beyond its membership catalysed the success of these initiatives.

The global financial system bears several similarities with digital technologies. Both are staggeringly complex, involve large volumes of data, and evolve rapidly. Much like the global financial system, the evolution of various digital technologies including the internet has been led by consensus-based multistakeholder institutions such as the Internet Corporation for Assigned Names and Numbers, or ICANN.[3]

By contrast in the past few years there has been a trend toward deglobalisation, or reduced interdependence and integration between nation states. Deglobalisation is evident in the sustained drop in FDI inflows since 2015-16, which have plummeted since the Covid-19 pandemic (Figure 1).

The digital realm shows evidence of a similar strain upon the international rules-based system, with member states increasingly asserting their sovereignty over the internet and data.[4]

The assertion of sovereignty, or state control, contrasts with the largely laissez faire, borderless, unregulated approach intrinsic to the development of digital technologies since the end of the Cold War. In the early years of the commercial internet the laissez faire approach sheltered the fledgling industry, accelerating its growth, but commercialising the internet and digital technologies revealed two crucial shortcomings in this framework,[5] compelling governments to expand the regulation and control of cyberspace.

1. Laws and regulations were insufficient to address privacy and cybersecurity concerns, which led to breaches of private and sensitive data. For example in 2017 the American consumer credit reporting agency Equifax announced a data breach that had exposed the personal information of 147 million people and placed them at risk of identity theft and

FDI financial inflows (Quarterly and annual)
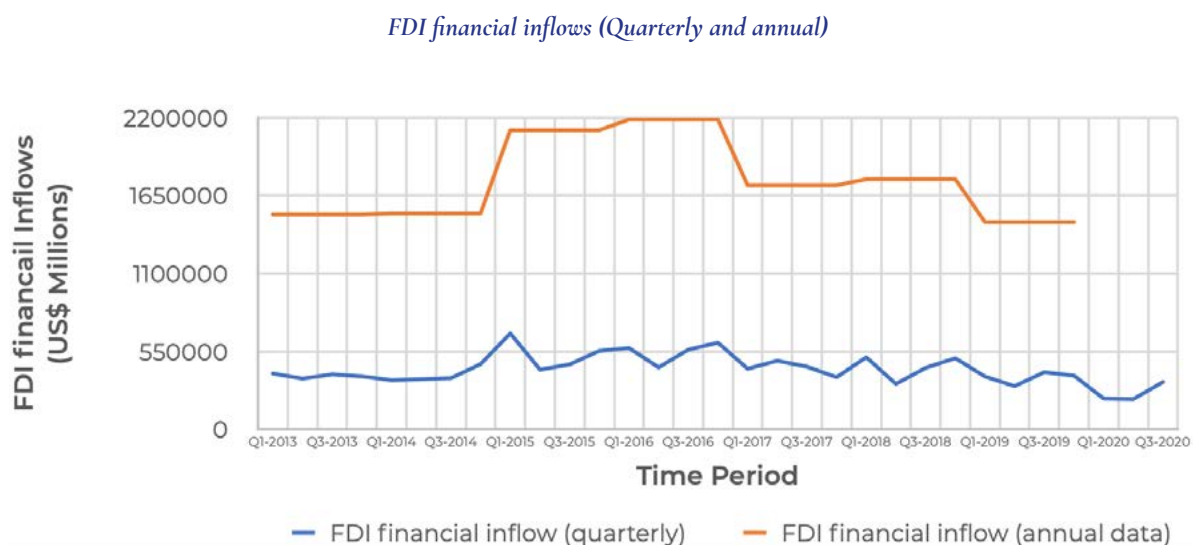
Figure 1. Annualised data is unavailable for 2020, so quarterly data is used to illustrate the significant reduction in FDI since the pandemic (Source: OECD)

fraud.[6] Consequently, states have begun to enact laws and regulations that extend their control over citizens' data. Over 70 states have introduced laws in the last few years mandating local storage of various kinds of data. This shows the failure of non-interventionist policy to engender adequate **trust** among states, that citizens' private information will be protected in the hands of foreign entities.[7]

2. Early non-interventionism in technology led to the asymmetric distribution of digital technologies, creating **digital divides** that exacerbate the existing global vertical and horizontal inequalities. These manifest in an extreme concentration of knowledge, expertise and wealth in a small number of individuals, countries, and corporations.[8] To correct these inequalities states have adopted measures to restrain the functioning of multinational entities, and promote the development of domestic knowledge and capacity.

While the interests digital sovereignty seeks to protect are legitimate, they must not erode the prospective benefits of global connectivity. Excessive digital sovereignty – or digital statism, characterised by overregulation and absolute control by the state – can throttle the innovation and development of digital technologies.[9] Statism will also lead to divergent approaches being adopted internationally, balkanising the interconnectedness that defines the digital era.

A high level panel on Digital Cooperation appointed by the United Nations Secretary-General noted that fragmentation of the digital landscape is likely to increase the digital divide between member states, reducing the potential of these technologies to deliver a global impact that moves toward realising shared objectives and values, such as the Sustainable Development Goals.[10] Much like FDI flows overall, crossborder investments in technology are likely to suffer due to the fragmentation caused by digital statism, as it becomes harder and more expensive for businesses to operate in foreign markets.[11]

A sound approach would balance state regulation to protect legitimate interests with the interconnected and global nature of digital technologies. Such an approach requires collaboration, cohesion, and consensus-building among nation states. A strong mechanism is required to coordinate and guide national actions to foster such collaboration, and to ease the frictions introduced by assertions of digital sovereignty.

The G20 can play a significant role in this context. It has emerged as a premier forum for discussions on the equitable, fair and inclusive use of digital technologies. **Beginning with the 2016 Hangzhou summit, the digital economy has formed a key part of the G20 agenda.** Since 2017, ministers responsible for the digital economy have met annually at the Digital Economy Ministerial Conference to discuss issues of digital innovation, employment generation, and the regulation of emerging technologies. Amidst the pandemic, under the presidencies of Saudi Arabia (2020) and Italy (2021) the convergence between healthcare and technology has become an area of focus at the G20.

The sustained focus on technology has resulted in a **framework of principles, guidelines and information repositories that could build the foundation for India's digital agenda.** As G20 president in 2023 India will have the opportunity to host the Summit, Ministerial Conferences, Working and Engagement Groups, as well as other special events during its year's tenure. This presents a unique opportunity to set the agenda and steer conversations on a range of pressing global issues, such as crossborder data sharing and the creation of inclusive global value chains. As a leading proponent of a rules-based international order, India can use its presidency to reinvigorate non-binding global rules, standards and principles that would govern the actions of members and non-members in the digital realm.

More specifically, India can use its presidency to address the tension between claims of digital sovereignty and the global nature of digital technologies. This would benefit the national interest in two ways. First, its budding digital ecosystem has benefited from foreign investment. As the Government of India frames policies to expand its sovereignty in the digital realm, it must be mindful of the impact on foreign investment, and thus on the domestic technology ecosystem.[12] India can learn from the experiences of G20 member nations in protecting their legitimate interests without obstructing flows of investment in digital technologies. Second, the Government's focus on digitisation has yielded many public facing technology applications for better governance and service delivery. As president it can highlight the success of these technologies, and help member states develop similar frameworks.
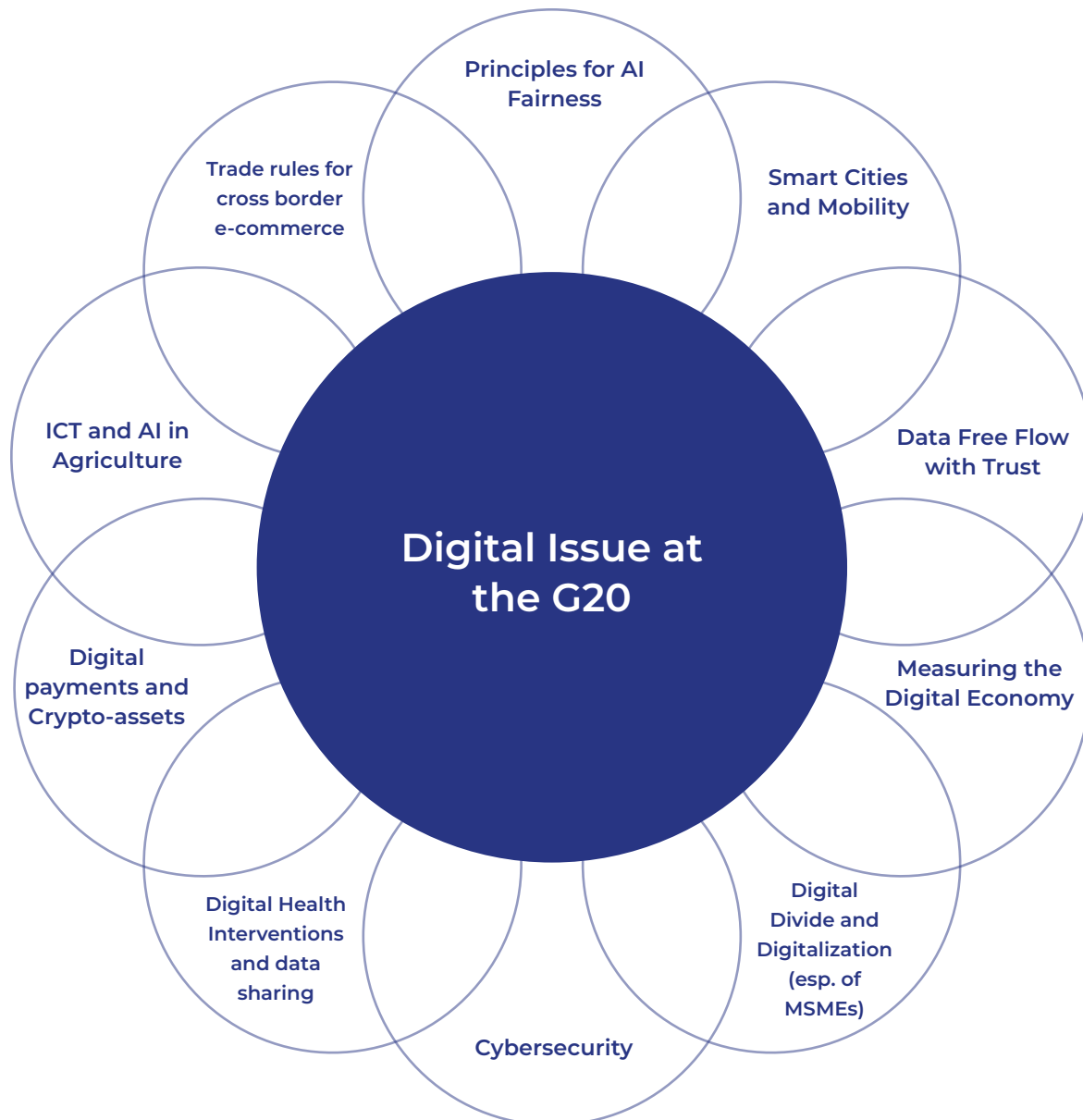
Figure 2. Digital issues discussed by the G20

An agenda to address these tensions must give importance to the factors underlying the expansion of state control over digital technologies – a lack of trust, and digital divides. It should look to achieve two specific objectives:

- developing a language of trust among member states, by agreeing on regulatory ideals and standards for the use, development, and exchange of digital technologies;
- augmenting knowledge creation and capacity

building in member nations, to minimise existing differences in technology adoption and application.

To achieve these objectives the agenda must be guided by certain first principles. The adoption of principles is in keeping with the G20's approach to designing outcomes. It provides also the flexibility and agility needed to address the impacts of constantly evolving digital technologies. In identifying such principles reference was made to ministerial declarations, blueprints and other G20 documents from the last six

years.[13] These reveal certain common principles that member states agree are crucial to developing the digital economy. Broadly these are:

- **Openness.**
  Digital technologies provide many avenues to generate knowledge, the bedrock of growth and positive change in the digital age. G20 initiatives should seek to ensure that individuals in all nations have equitable and transparent access to information, as well as the agency to participate in creating new forms of knowledge.

- **Fairness.**
  Member nations differ vastly in the extent of technology adoption. A uniform approach to rulemaking for technology may exacerbate these differences and increase inequality. Any outcome at the G20 must therefore strike a balance between the imperative of global cooperation and the different levels of technology adoption and readiness among member nations. It must also foster open, non-discriminatory environments that protect the interests of consumers and small businesses in the face of increasing global competition.

- **Inclusivity.**
  The potential of digital technologies should be harnessed so as to reduce inequalities, moving closer to the universal value of no one left behind. The design and development of these technologies must accommodate the varying levels of digital skill and literacy, and the significant cultural, historical, linguistic diversity in nations of the world.

- **Multi-stakeholderism.**
  Wide ranging impacts and overlapping interests in these technologies require an approach informed by the views of a broad foundation of interested parties, including technical experts, businesses, and civil society.

- **Collaboration.**
  Member states will need to establish effective mechanisms to work together, to leverage the ability of digital technologies to create positive outcomes beyond national boundaries. Moreover a collaborative and harmonious approach bringing together expertise and resources across member nations will maximise the positive effects of these technologies for people around the world.
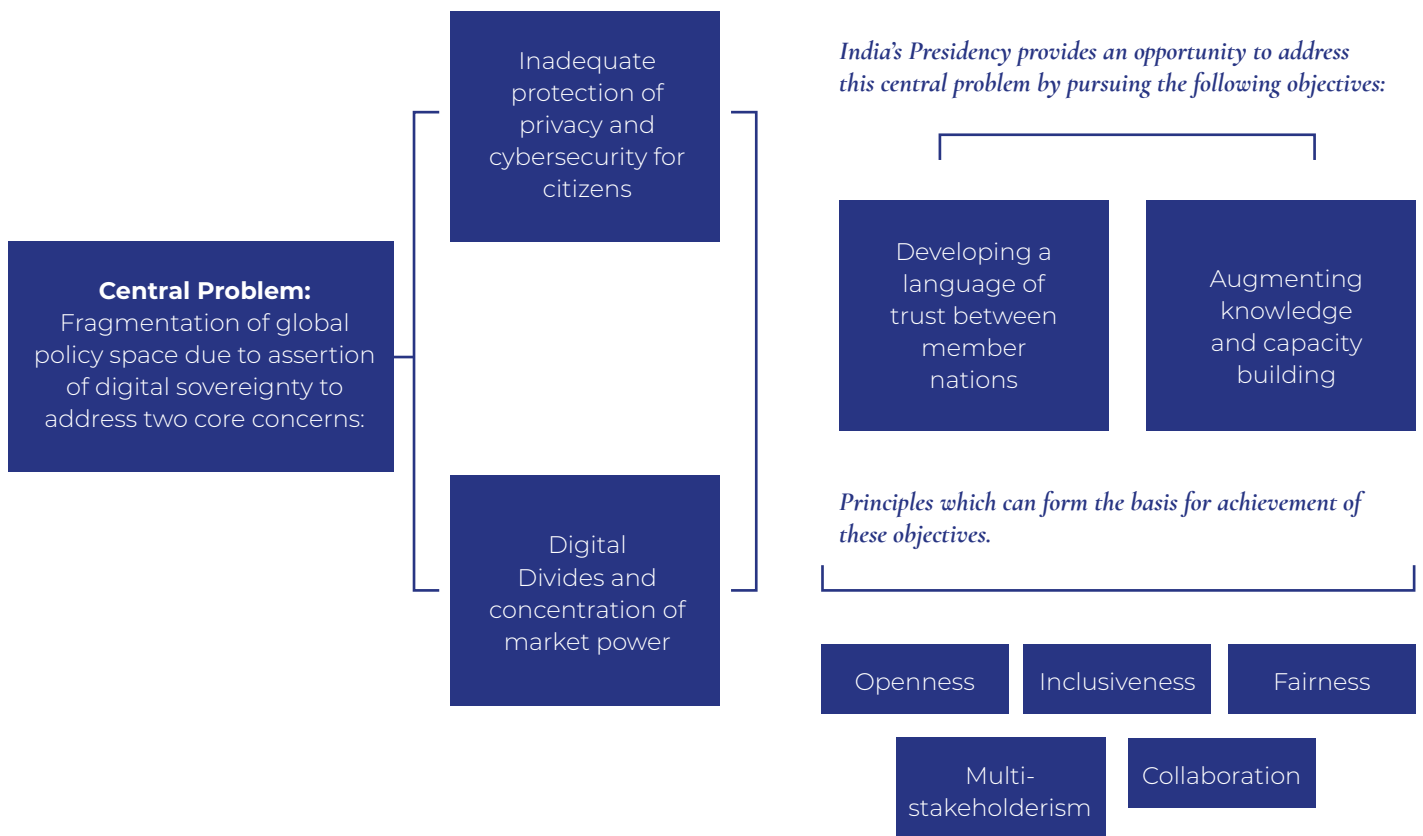

Figure 3. Foundations of a digital agenda led by India as G20 president in 2023

1/ **FOCUS AREAS**

Seven areas to form the core of India's digital agenda at the G20 are identified here. These were determined by analysing developments related to digital technology at the G20 in the past few years – the proposals in each area harness and build upon the prior collective and individual contributions of member states. They also yield significant scope for collaboration, consensus building and capacity augmentation, allowing India to explore path breaking initiatives in its tenure.

Related developments in international fora were also considered, such as the U.N. Secretary-General's Roadmap for Digital Cooperation. The focus areas also highlight digital initiatives by the Government of India to improve public service delivery and governance outcomes for citizens, which may serve as examples for other member nations. The framing of proposals in each area is guided by the two overarching objectives, of trust building and knowledge creation, informed by the principles identified above.

1. DIGITAL CORRIDORS

The pandemic comes as a reminder, in a fragmenting world, of the importance of collaboration to resolve global concerns. Vaccines could be developed at a historic pace, directly because of the rapid publishing and free availability of the coronavirus genome structure to researchers worldwide.[14] Similarly, lockdowns in response to the pandemic underscored the potential of technology in affording crucial services such as healthcare (telemedicine) and education (EdTech). Yet persistent digital divides exclude large sections of people from these benefits.

Considering the advances in technology and perspective, as well as marked inequalities, India should propose **discussions** on digital corridors. Broadly these would facilitate the seamless and trust-based exchange of data, services, and expertise across member nations in critical areas such as education and healthcare. Discussions in the ambit of a Working Group could focus on the following mandate, initially limited to health, and scaled up later depending on the outcome.

A. FRAMEWORK TO FACILITATE CROSSBORDER FLOWS IN HEALTH DATA.
Sharing health-related data can spur innovations along each step of medical care: diagnosis, treatment, and prevention. Limitations on sharing such data beyond borders are due to concerns about security and privacy, and differences in standards governing the collection, storage or processing of health related data. The importance of cross border sharing of health data was recognised at the recently concluded G7 summit in the United Kingdom. To lead these discussions, India could draw on lessons gleaned from the National Digital Health Mission, which has addressed similar concerns.[15] The Mission created an online platform to supply health-related information to a wide range of stakeholders in the health ecosystem, securely and confidentially, by using digital systems based on open and interoperable standards. The role of **federated learning** to engender confidence and trust in crossborder health data flows could also be part of the Working Group's agenda.[16]

B. DEVELOPING UNIFORM STANDARDS AND CERTIFICATION FOR TELEMEDICINE.
There has been a marked increase in the use of telemedicine during the pandemic. A study by the Center for Disease Control and Prevention reported a 50% increase in telemedicine encounters in the first quarter of 2020 over the first quarter prior.[17] A leading digital health platform operating in India witnessed a doubling of teleconsultations, week on week during March 2020.[18] The sharp increase shows the importance of telemedicine in providing equitable health access, particularly in emergencies or remote locations.

The Government of India released the Telemedicine Practice Guidelines in 2020 to harness the potential of telemedicine, clarify the legal status of telehealth services, and establish the procedures and safeguards to be followed by medical practitioners.[19] The National Teleconsultation Service or the eSanjeevaniOPD, a first of its kind virtual outpatient department, was rolled out last year to provide an end to end solution for telemedicine through the existing network of Health and Wellness Centres.[20]

These developments leave Indian medical practitioners well versed in the use of telemedicine – their expertise can be channelled to help bridge existing care gaps in other member nations. The Working Group should therefore initiate conversations on non-binding rules and standards and voluntary certification procedures for healthcare entities to provide their services in other member nations. Discussion of such standards will also help Indian policymakers learn from other members' experience, and identify avenues for improvement in domestic guidelines and regulations.

2. DIGITAL INFRASTRUCTURE

Digital infrastructure – or InfraTech – is defined by the G20 Infrastructure Working Group as 'the integration of material, machine and digital technologies across the infrastructure lifecycle'.[21] A World Bank report finds that incorporating digital technology into traditional forms of infrastructure can increase their impact by (i) improving efficiency and reducing costs (ii) enhancing economic, social and environmental value, and (iii) creating new markets that reshape infrastructure demand. For instance, the use of 5G technologies in infrastructure is expected to unlock close to $4 billion in efficiency gains across several industries.[22]

InfraTech adoption is determined by the technological and regulatory preparedness of individual nations. Differences in preparedness let some countries leapfrog others to emerge as industry leaders. Figure 4 shows how early movers such as France and the United States are consistently above the G20 average, while digital readiness in India and South Africa is low but growing. This shows the need for global collaboration in InfraTech to promote inclusion and multi-stakeholderism in a vital realm in the global economy.

At the 2020 Summit the Working Group on Infrastructure's focus was expanded to include digital infrastructure. The Riyadh InfraTech Agenda that emerged aims to advance the adoption of new and existing infrastructure technologies by (i) providing high level policy guidance for national authorities (ii) promoting investment in digital infrastructure development through private and public channels, and (iii) supporting innovation to develop new kinds of digital infrastructure.[23] India should continue the work begun under this Agenda.

An outcome of the Riyadh InfraTech Agenda was a stocktake of 65 use cases of digital technology in infrastructure across various sectors.[24] The use cases so identified can be translated to real world outcomes during India's tenure by piloting some of them in member nations. To streamline the process, a city in each nation could be paired with a 'digital twin' in another, a city it would collaborate with to implement suitable use cases.

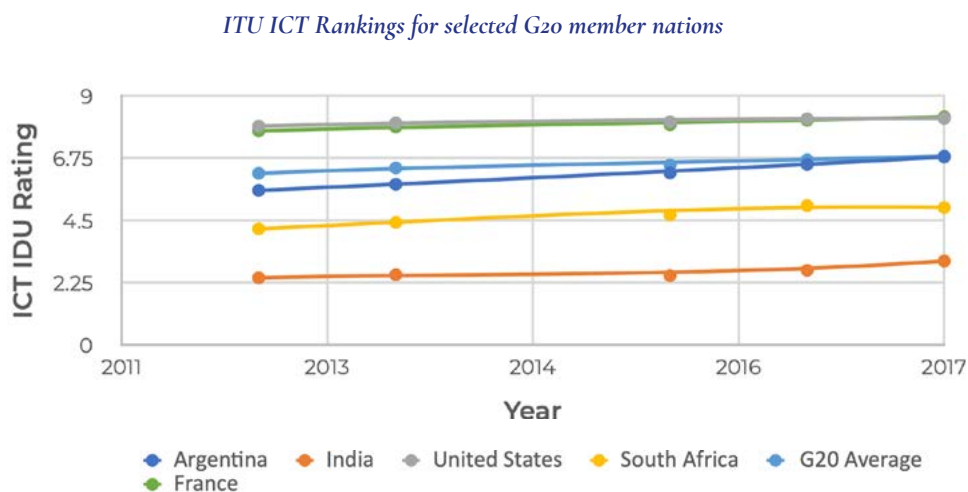*ITU ICT Rankings for selected G20 member nations*

Figure 4. The ICT Development Index measures nations' digital preparedness through a range of factors including internet connectivity and digital literacy (Source: International Telecommunications Union)

The Government of India has nurtured the Smart Cities Mission since 2015 with the stated purpose of ameliorating deficiencies in governance and infrastructure in Indian cities.[25] Analysis of the Mission shows the development sectors that have received the most funding – about 60% – are transport, energy, and sanitation and water.[26] These three sectors also account for nearly all of the use cases identified in the stocktake. India should leverage this convergence to effectively steer a digital twins initiative, and implement such use cases as smart street lighting, real time traffic management, and digital service platforms for transport hubs.

3. MSME CAPACITY BUILDING

The growing role of digital technology in the world economy gives MSMEs tremendous opportunity to increase their international competitiveness and their participation in global value chains. Growth in digital retail and trade over the past decade has reinvigorated talks to finalise an e-commerce treaty under the Joint Statement Initiative at the WTO,[27] as well as the Osaka Track launched at the G20 summit in 2019.[28] While membership of the initiative has grown to 86 states, developing economies including South Africa and India have stayed away citing concerns about the competitiveness of their domestic enterprise and the need to frame their own e-commerce laws before being bound by an international agreement. The marked differences in MSME digital technology adoption across members has also stalled trade discussions (Figure 5).

The G20 agenda has focused on bridging this gap, to foster the equitable and inclusive digitisation of MSMEs in member nations. This has yielded a set of guidelines, principles, and best practices. India can leverage these previous developments as well as institutional linkages within the G20 to facilitate MSME integration with global and regional value chains by promoting the adoption of digital technology. Such an initiative would build on the twofold Draft G20 Strategy for Promoting Inclusive Global Value Chains,[29] which comprises:

A. PROMOTING INVESTMENT IN DIGITAL CAPACITY BUILDING FOR MSMES.
Existing relations between the G20, Multilateral Development Banks and International Organisations can be used to increase the availability of funds for states to invest into MSME capacity building and to accelerate progress toward SDG 9.[30] Investment promotion could also take the form of digital or e-haats that use technology solutions such as augmented or virtual reality to showcase traditional industries (handicrafts and textiles).[31]

B. PRIORITISING INTERVENTIONS TO FACILITATE MSME CROSSBORDER TRADE.
The G20 can be a forum to advance discussion on policy and regulatory measures to improve the ability of MSMEs to operate seamlessly across borders. Policy interventions outlined in the aforementioned Draft Strategy, for instance, include adopting the trade facilitation agenda to ease MSME compliance burdens, and technical assistance to help MSMEs understand the procedures and regulations to import or export goods and services.
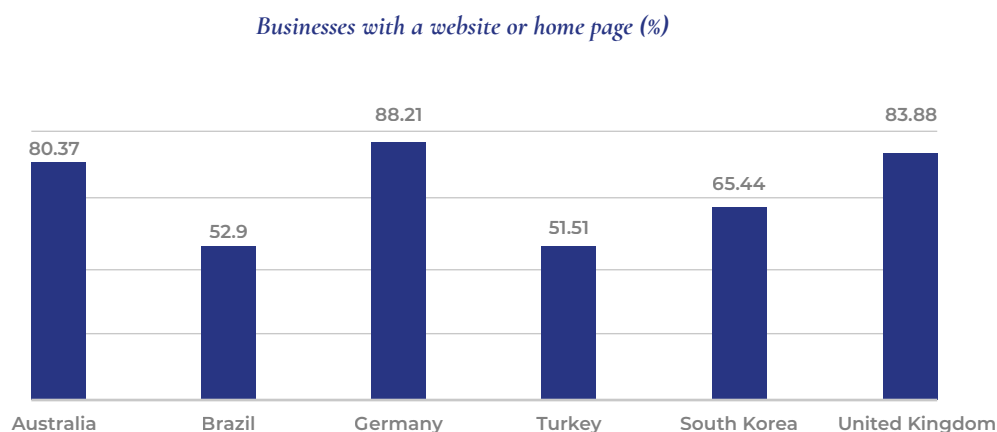
Businesses with a website or home page (%)

Figure 5. Ownership of a website for business purposes is used as a proxy for business ICT adoption (Source: OECDStat)

NATION	SCORE ON OPEN DATA BAROMETER (OUT OF 100)
Australia	75
Brazil	50
Canada	76
Germany	58
India	48
Saudi Arabia	25
South Africa	36

Figure 6: The table highlights the marked difference in progress made by various G20 member nations in the adoption of the AC-ODP (Source: Open Data Barometer)

4. OPEN DATA AND INNOVATION

At the leaders' summit in Osaka in 2019 the G20 outlined principles for crossborder Data Free Flow with Trust.[32] Developing countries including India expressed reluctance to adopt such a framework, arguing that most nations had yet to determine their data governance policies domestically.[33]

It is advisable therefore to adopt a bottom up approach to evolve a data sharing mechanism at the G20. Such an approach would focus on improving openness and crossborder sharing of government or public data. Open access to government data will increase transparency and accountability and enable its use and analysis to create solutions beneficial to citizens.[34]

The utility of Open Government Data in tackling corruption is highlighted in the G20 Anti-Corruption Open Data Principles.[35] These comprise six principles encouraging member states to make their data open, accessible, usable, comparable, and interoperable on a best effort basis. Although adopted in 2015, progress in implementing these principles has been slow and varied (Figure 6). A review of the implementation processes adopted by different states would help identify best practices and assist other members in their adoption efforts.

Domestically, India has a proactive approach towards open government data. It has adopted a National Data Sharing and Accessibility Policy and launched an Open Government Data platform to provide access to shareable government data in open machine-readable formats.[36] The Government of India has also signalled its intent to facilitate solutions and applications based on government data by the private sector or civil society by implementing National Open Digital Ecosystems.[37]

India could propose to expand the scope of Open Government Data principles beyond the domain of anti-corruption. Potential innovations based on such data, developed in collaboration by the public and private sectors, can ensure better policy outcomes for member nations. Emphasis could be laid on creating a standardised, interoperable, integrated cloud framework and infrastructure to enable the seamless sharing of data available with different levels of government. This unified framework would help governments arrive at policy decisions based on evidence and verifiable data. It would also improve the delivery of e-services to citizens by the use of scalable applications deployed throughout the network. The Government of India's unified cloud framework, known as GI Cloud or MeghRaj, is an example of how Open Government Data can be used to accelerate public service delivery.[38]

5. TECHNICAL COOPERATION

The cross-cutting nature of digital technologies poses a significant challenge to regulatory institutions in member states. Digital platforms and services have a multidimensional impact and require a new approach to regulation that focuses on agility, flexibility, and transparency. The regulation of digital markets, for instance, now focuses on collaboration between a diverse set of stakeholders to frame evidence-based rules. Nations such as Singapore (IMDA) and Malaysia (MDEC) have created specialised regulatory institutions to promote public-private collaboration to help realise the potential of the digital economy.

Given the complexity inherent in digital technologies, it is no surprise that G20 member states have instituted vastly different mechanisms to regulate ICT (Figure 7). While states such as Italy and France have relatively mature regulators, others like Russia have yet to develop the requisite capacity to effectively regulate the digital economy. The varying maturity of ICT regulators can translate to differing outcomes for member nations, compounding the problem of divergence in the digital landscape.

To bridge the gap between member states, the G20 Digital Economy Development and Cooperation Initiative (DEDC) has focused on building capacity to implement regulatory reforms.[39] It aims to encourage the exchange of views, promote mutual understanding, and strengthen cooperation in digital policymaking and regulation. The G20 has also been pursuing an Enhanced Structural Reform Agenda (ESRA) that identifies reforms in nine crucial areas to promote policymaking that will lead to balanced and sustainable growth for member nations.[40]

India can build on the progress made under the DEDC and ESRA to formalise channels of cooperation between institutions and regulators for the digital economy. It should also reinvigorate work under the Digital Economy Task Force, and continue work on consolidating policies under the G20 Repository on Digital Policies established in 2018.[41]

Further, it could create another **engagement group**, called the **R20**, as a forum to facilitate the sharing of information and best practices among stakeholders involved in regulating the digital economy. Existing engagement groups at the G20, such as the T20 for think

ICT Regulatory Generation	Characteristics of each generation	G20 member states
1G	• Regulated public monopolies • Command and control approach	1G
2G	• Open markets • Partial liberalisation and privatisation across layers	China, Russia
3G	• Enabling investment, innovation, access • Dual focus : stimulating competition in service or content delivery, and consumer protection	India, Indonesia, Japan, South Africa, South Korea
4G	• Integrated regulation • Led by economic and social policy goals	Argentina, Australia, Brazil, Canada, Germany, France, Italy, Mexico, Saudi Arabia, Turkey, UK, USA

Figure 7. Comparative development of ICT regulators in G20 members.
(Source: ICT Regulatory Outlook 2020)

tanks and B20 for the business community, provide the blueprint for a multistakeholder engagement group focused on the digital economy.

A specific area for cooperation in the R20 could be the creation of standards and controls for information security and privacy protection, which would in turn increase trust and promote greater crossborder information sharing. The International Organization for Standardization and the International Electrotechnical Commission have already begun work on framing worldwide standards for secure information systems, with the proposed ISO/IEC DIS 27002.[42] Member states and other interested stakeholders could build upon this in the R20.

Further, the G20 can help build consensus, mutual understanding, and universal standards for the **creation of regulatory sandboxes**[43] to promote innovation in the digital economy, especially in financial technologies. Discussion of standards for regulatory sandboxes should be a key part of India's agenda under the Finance Track, which brings together finance ministers and central bank governors of member states through various working-group level engagements for detailed technical analysis of economic and financial matters.[44] The Reserve Bank of India's experience in creating sandboxes for retail digital payments and crossborder payments would help anchor such a dialogue.

6. REGIONAL COOPERATION

There has been a strong trend of regionalism in the last decade, and regional blocs and groupings have come to the fore in global policymaking. The growing importance of these blocs is reflected in India's elevated level of engagement with bodies such as ASEAN, BIMSTEC and the African Union among others. In keeping with its 'new orientation for a reformed multilateral system', India should use its tenure as president to build cooperation with other regional nations.[45] Regional initiatives that have seen successful cooperation include the sharing of maritime information across countries in the Indian Ocean Region. India has pioneered the Information Fusion Centre–Indian Ocean Region, which adopts a technologically advanced and collaborative approach to ensuring the region's maritime security.[46]

The Indo-Pacific is a regional group that has acquired considerable importance, and is viewed as a global centre of gravity, both for its economic and demographic potential, and for the security challenges that could frustrate these possibilities. The prevalence of cybercrime is a new and emerging challenge to Indo-Pacific security. The first G20 Cybersecurity Dialogue, hosted in 2020, highlighted the growing importance of the issue in international relations.[47] Weak cybersecurity systems cost the Indo-Pacific upward of $300 billion a year.[48] The region also lacks in digital skills, resulting in great vulnerability and lower technology adoption for entrepreneurs and small businesses. This demonstrates the need for international cohesion and collaboration to address challenges to the region's cybersecurity.

As several Indo-Pacific nations are members of the G20 (including Australia, South Korea, Indonesia and the United States) India should propose a joint training initiative for Computer Emergency Response Teams or CERTs.[49] The initiative would bring together CERT officials in the region to undertake collaborative learning, skill development, and share best practices. It would also develop trust and understanding between CERTs. An area of focus could be to train officials to enable timely and secure information sharing under the Information Exchange Policy developed by the Forum for Security Incident Response Team or FIRST,[50] which brings together security incident response teams from government, commercial and educational organisations to work collaboratively to prevent or respond to cybersecurity incidents. As a FIRST member, CERT-In could provide the administrative expertise required for the joint training initiative.

The growing incidence of cybercrime can be effectively dealt with if Indo-Pacific law enforcement agencies are able to share crucial data with each other in a timely manner. To this end, a training exercise bringing together law enforcement officials from these countries could also be conducted during India's tenure. The exercise would focus on building capacity and trust and enabling officials to request the necessary data through appropriate mechanisms for data exchange, such as Mutual Legal Assistance Treaties.

7. FRAMEWORK FOR EMERGING TECHNOLOGIES

Emerging technologies have the potential to generate significant socioeconomic benefits and accelerate progress in fulfilling the Sustainable Development Goals. They also threaten to exacerbate social divisions, biases,

and inequalities. Their use requires a human-centred or 'Society 5.0' approach,[51] focused on common values, principles, and standards to benefit citizens – a value that finds repeated mention in the G20 Digital Economy Ministerial agenda from 2018. With this background it is advisable for India to facilitate conversations to create shared frameworks for emerging technologies. Such frameworks would incorporate principles to facilitate fair, inclusive and transparent use of these technologies. The initiative could focus on these specific technologies:

a. **Artificial intelligence.**
    At the 2019 summit member states adopted the G20 AI Principles, which seek to promote fairness, transparency, explainability and inclusivity in operating artificial intelligence.[52] Effectively translating these principles to actionable outcomes requires that they be understood and implemented by developers and researchers working on AI, who are not always able to grasp the techno-legal jargon these documents express. Plugging the gap between principles and their implementation is a goal India could target in its tenure. For instance it could propose to create an online portal for developers in member nations to access simplified, easy to understand versions of the G20 principles. The portal could also host training videos created by experts, intended to resolve common challenges faced by developers and researchers.

    A portal for information on artificial intelligence already exists in the form of IndiaAI,[53] a joint initiative by MeitY, NeGD and NASSCOM that provides updates and information on key developments in AI. In partnership with NITI Aayog, which has already released a report on responsible AI, the IndiaAI portal can be scaled to meet the challenges faced by AI practitioners as outlined above.[54] Association with NASSCOM would be helpful in identifying and bringing on board experts from the private sector.

b. **M2M technologies.**
    There has been exponential growth in the past decade of technologies that enable autonomous information exchange between machines via telecommunication networks.[55] As noted earlier, significant efficiency gains can be made by embedding traditional infrastructure with digital devices and machines. The applications of machine-to-machine or M2M technologies extend to climate monitoring, agriculture, and manufacturing.[56] To harness the potential of these technologies to create positive outcomes for member nations, it

is crucial to agree upon standards to facilitate interoperability, security and privacy for M2M devices. The Telecom Regulatory Authority of India has recognised the importance of such standards and pursued a defined roadmap to create the necessary standards, policies and regulations since 2015.[57] India could leverage this domestic experience in its tenure to lead conversations on standards agreeable to all parties. Discussions of standards for M2M technologies could be part of the agenda for the Digital Economy Ministerial, as well as the R20 engagement group proposed above.

c. **Central bank digital currencies.**
    Several G20 members including Japan, China and the European Union have issued or are considering the issue of central bank digital currencies to enhance and simplify digital transactions.[58] Recent reports suggest the RBI is also considering the introduction of a CBDC.[59] By late 2022 the G20 in collaboration with the IMF, World Bank, Bank for International Settlements and others will have completed research into CBDC designs, technologies and experiments.[60] There is an opportunity for India to transform this research into principles to facilitate CBDC adoption by member states, promote interoperability between currency frameworks, and enable crossborder digital transactions. The development of frameworks and principles for CBDCs to aid this process should be part of deliberations under the **Finance Track**.

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