



Task Force 4  
**Digital Transformation**

**Policy brief**

# EXPLORING THE DEVELOPMENT-TECHNOLOGY NEXUS VIA A DIGITAL TRANSFORMATION: PARADIGM SHIFT IN DEVELOPMENT STRATEGY IN THE DIGITAL AGE

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# ABSTRACT

The COVID-19 pandemic has amplified the significance of digital technologies, with expectations of benefits growing in terms of ensuring basic services like employment, education, healthcare, coping with mobility restrictions etc. While much of the world has availed itself of the benefits, the divide in the digital realm has been exposed and widened. The G20 needs to throw its collective weight behind support for developing economies to create a comprehensive, rights-based digital ecosystem with a clear roadmap and robust public sector and civil society transformation to make the digital world secure, inclusive, and sustainable.

*PS: The opinions of Boutheina Guermazi and Tania Begazo-Gomez are their own and do not necessarily represent the view or position of the World Bank*



# CHALLENGE

Digital transformation has been heralded as one of the key means of addressing the global development gap. However, there remains a great disparity between the developed and developing world in the adoption of digital technologies. While most of the innovations in the digital arena are being driven by developed economies, developing economies lag behind in their adoption due to manifold issues. Even within developed communities, there is a widening divide between large and small firms, as well as between poorer and richer regions within the country. Regions such as Europe have shown that, while they are strong in operational technologies like smart robotics and 3D printing, they are lagging behind in market inclusion and convergence (Hallward-Driemeier, Gaurav, Fengler, Aridi, and Gill, 2020).

At a surface level, infrastructural issues remain the key barrier to accessing digital connectivity. Over 4 billion people globally lack access to a stable internet connection with only 35% of the population in developing countries having access to the internet (Luxton, 2016). Even when broadband connections are available, the speed can be poor in under-developed regions. Countries with the lowest internet speeds have download speeds 40 times slower than those of the fastest countries (Kazeem, 2017). When internet access and speed are ensured, access to electricity becomes another major concern. For instance, it was reported that in the villages of India only 16% of households received 1–8 hours of electricity daily, 33% received 9–12 hours, and only 47% received more than 12 hours a day (Alexander and Padmanabhan, 2019). Furthermore, the issue of affordability and willingness to pay limit actual use of the Internet; the most frequent explanations for lack of Internet use are related to digital literacy (69 %), affordability (15 %) and relevance (12 %) (World Bank 2021).

Delving further into these issues, developing regions lack an ecosystem in which innovation can thrive in a transparent and corruption-free environment. Lack of consistency and coherence between policies makes it difficult to develop such an ecosystem while cumbersome organisational practices and bureaucratic red tape add further barriers. The sustainability of digital development initiatives is another issue as they are often associated with additional costs that organisations in developing economies are unable to afford though wanting to stay competitive. In addition, digital technologies have also widened the inequality gap as they often benefit high-skilled workers, who are already better off (UNESCAP, 2018). All this can lead to a digital divide that acts a barrier to sustainable development.

Overall, the challenge of digital transformation today lies in fostering inclusivity and providing access for millions around the world, especially those marginalised and left behind. Through the recommendations in this Policy Brief, we highlight pathways that will help developing, under-developed, and under-represented populations around the world to leverage the fruits of digital transformation, primarily defined and guided by advanced internet and communications technology.



# PROPOSAL

Based on the above challenges the following **recommendations** are put forward for the G20 to ensure that digital transformation initiatives support today's global development agenda.

## ***PRIORITISE THE DEVELOPMENT OF AN ENABLING ECOSYSTEM WHERE DIGITAL TRANSFORMATION CAN THRIVE***

When it comes to promoting innovation in developing economies, one of the more common suggestions is to increase financial support for research and development. However, history has shown us that investing more into research and development while organisational policies remain corrupt or incompetent does not bring about the desired results. It is thus essential for foundational issues to be tackled first before developing economies can build an innovation ecosystem. This means that the country itself needs to develop a robust digital transformation and innovation framework, customised according to available resources, needs, and national aspirations. This framework should consider economic opportunities as well as education, health, community, service delivery, and social connections.

Policies need to be supported by an environment conducive to prosperity, in which managerial and organisational practices encourage development of the ecosystem. This requires addressing issues such as transparency of the information flow, access to data for both commercial and public good purposes, the ability of researchers to work independently, encouraging collaboration, the sharing and testing of ideas and solutions, public-private partnerships for the design of solutions that address user needs, elimination of political interference, ensuring the rule of law, eliminating corruption etc. Within this context it is further necessary to identify which parts of the framework involving technological innovations should be made publicly available i.e. open access.

A World Bank study found that despite the immense potential, many firms in developing economies are unsuccessful in adopting the advanced technologies used by developed counterparts for their manufacturing facilities (Cirera and Maloney 2017). Their ability to develop systems to promote innovation in products, processes, and quality is hampered by flaws in the organisational practices that form the foundational blocks of the ecosystem. Hence, before allocating funds to research and development, governments need to take measures to develop an enabling environment and support facilities that can foster the desired digital transformation.

Among other aspects, support systems should include efficient policy design for digital transformation according to the country's needs, strong public management practices in the digital arena, policy coherence and consistency, and an approach to innovation that encourages rapid testing at local or enterprise levels followed by scaling up where innovations are demonstrated to be of value from a social or economic perspective. Successful G20



economies such as the US, UK, Japan, Korea, etc. that already have robust frameworks need to come forward with comprehensive strategies to share their success cases with under-developed, developing, and under-represented economies that require support in developing a digital transformation support framework.

## ***DEVELOP A ROBUST ROADMAP TO TECHNOLOGY ADVANCEMENTS***

Many countries in the past have fallen into the trap of wanting to “attract more tech firms” without developing the required environment for technology firms to thrive. For example, Tanzania’s tech ecosystem has failed to attract large funds and investors despite showing positive growth, primarily due to its socialist past and a current business environment that controls foreign investment and disincentivises cross-border data flows. Developing countries need to develop a clear roadmap that outlines their own individual value proposition based on their unique attributes. Countries such as Singapore and the United Arab Emirates provide interesting case studies that have leveraged their unique strengths to achieve high rates of development through innovation. These economies have made it very easy and appealing for large innovative organisations to establish their bases there. Roadmaps need to be multifaceted and string together all the necessary components. These components in turn may include the development of a mature legal system, attractive tax rates and predictable tax administration, access to a large, skilled population base, access to reliable digital and energy infrastructure, etc. One of the key guiding principles in this regard should be “If you want great technological advancements, you need great technologists, doing great things.” It is therefore important to create social and environmental benefits as well as economic benefits.

## ***MAKE SUSTAINABILITY A CORE AGENDA OF DIGITAL TRANSFORMATION POLICIES***

Sustainability is the crux of today’s global development agenda, and digital technologies of the twenty-first century have demonstrated their ability to promote green and sustainable growth. Artificial Intelligence technologies have been able to track and respond quickly to natural disasters, improve the generation of and access to renewable energy, create energy-efficient systems, document supply chains, and much more. However, a considerable section of global policymakers and stakeholders are still averse to adopting sustainability given its high initial investment costs. The same sentiment is echoed in developing economies where a different reasoning takes priority.

A common thinking among developing economy policymakers is that developed economies are using the momentum created from economic growth achieved through unsustainable practices to promote sustainability today. They therefore think it unfair to force developing economies into incorporating sustainability, which is often more expensive and hence hampers their competitiveness. However, sustainability in production, consumption, and develop-



ment is the only way to go in the long run, and countries that do not take this opportunity now will ultimately fall behind in competition. The cost of renewable energy is falling and there are opportunities to use digital technologies in new ways to cost-effectively address social challenges such as homelessness<sup>1</sup> and build opportunities such as social enterprise networks<sup>2</sup>. Furthermore, new digital technologies are more energy efficient. Therefore, technology upgrading can help both environmental sustainability and productivity (World Bank 2021).

Given the existing aversions, developed economies, many of which are in the G20 group, need to help create mechanisms to incentivise developing economies to adopt sustainable practices. Digital transformation policies and initiatives in developing economies need to have sustainability built into them, and these economies need to be adequately compensated financially as well as through the transfer of technology and skills to foster innovation. There are likely to be opportunities where developed and developing country NGOs could partner in solving social and environmental challenges.

Stakeholders in this area include enterprises and industry groups promoting jobs in clean technology, impact investors seeking opportunities in which there is both a social or environmental impact and a financial return, universities who can provide training and shared digital platforms (for example, Social Enterprise Impact Lab, Swinburne University); philanthropists who can support educational and social enterprise opportunities, and government agencies.

## ***CONSIDER DIGITAL PRIVACY AND SECURITY***

The interconnectedness of the digital sphere means that data privacy and security concerns cannot be considered in isolation anymore. Countries need to work together in developing the tenets of data privacy and security and also ensure adherence to agreed norms to ensure that flexibility based on country-specific context and interoperability form part of the global digital ecosystem. However, keeping data private and secure is gradually reinforcing the digital divide, given rising costs. Global cybersecurity spending is expected to reach US\$ 60 billion in 2021 (Arboleda, 2021). Such astronomical growth shows the importance of data privacy and security today, and this service needs to be paid for. Naturally, most people in the developing world are unable to bear the costs of keeping their data private and secure. More importantly, most of these people are unaware of the need to keep their data secure, which exposes them to a greater risk of data breaches. In many places, personal data is misused to target people in poverty for predatory financial products or educational programmes. Governments in developing and developed countries need to increase focus on educating and training across all sectors (business, government and not-for-profit) to acknowledge the importance of keeping data secure and must adopt these practices in their digital footprints.

## ***BRIDGE THE DIGITAL DIVIDE***

While digital capabilities have provided the world with easy access to goods and services, the digital divide has also been widening due to infrastructural barriers such as lack of electricity and digital infrastructure. An estimated 2.2 billion children and young people (two-



thirds) lack access to a fixed internet connection at home (United Nations Children's Fund and International Telecommunication Union 2020). Even in high-income countries like Italy, one-third of families with access to internet were unable to fully engage in digital learning due to a lack of sufficient connectivity or devices (Mascheroni et al. 2021). And globally, the proportion of women using the internet is 12 % lower than men, with 200 million fewer women than men owning a mobile phone (Taylor 2018).

At a very core level, policymakers and donors need to ramp up efforts to develop hard infrastructure like electricity networks, connectivity and good quality digital devices, especially for the most vulnerable populations. This should be adequately complemented by online resources made available by technology companies. For example, educational materials should be made available in documents, sizes and formats that are easily and cheaply accessible over a low-speed internet and can be integrated with existing devices. At the same time, these resources should also be accessible offline to ensure use in settings with low/no connectivity. Governments also need to work with telecommunication companies to design effective programmes to increase usage, such as targeted subsidies for data, devices and digital platforms. For subsidisation programmes to succeed, however, governments also need to consider regulatory reforms that promote competition and reduce unnecessary regulatory burdens, before designing the programmes themselves. Pricing should also provide attractive options for not-for-profit users (e.g. health and community services), who may not be able to pay full commercial rates.

## **RELEVANCE FOR THE G20**

Globally, the G20 represents over 90% of global Gross Domestic Product (GDP) (What is the G20, n.d.), over 95% of billion-dollar startups (unicorns) (CBInsights 2021), over 90% of e-commerce (UNCTAD, 2018), and 93% of billionaires (Togini 2021). Given that this group of countries includes some of the most advanced economies (US, Germany, Japan etc.) as well as leading developing countries (India, Indonesia etc.), it is an ideal platform to initiate intellectual discourses and implement policy instruments that can make digital technology the harbinger of economic development by making an apt connection between economic empowerment and digital transformation.

As a platform of the world's strongest 20 economies, the G20 needs to act together to take and promote initiatives that not only benefit their own individual countries, but the world as a whole. The economies of the digital world are more intertwined than ever before. Every single product produced today makes use of resources (raw materials, human, financial etc.) that originate from multiple countries. For sustainable global development, digital transformation needs to be inclusive of all economies. Progress on social, economic, health and sustainability levels is increasingly interrelated.

The G20 needs to agree upon a sustainable framework that enables the transfer of technology skills and innovative thinking into developing and under-developed economies to help their growth, address social and environmental challenges, and implement digital



technologies. Support needs to be provided not simply by providing additional funds for development, but also by helping the developing world create an ecosystem in which they can gradually reduce their reliance on external support and develop systems that foster innovation internally. In this regard, support for education, research, and digital technology capacity building is crucial to help develop peoples' skills. Support for opportunities to share accessible digital tools and skills in the NGO sector, such as impact reporting in support of new financing and funding models, is also desirable.

The G20's support should also include transparent and regular monitoring and evaluation to ensure that digital transformation in developing economies actually reduces inequality and follows a sustainable agenda. Most importantly, the goal should always be to ensure that digital transformation helps make the world not just better, but more inclusive and sustainable too.



# NOTES

<sup>1</sup> <https://justiceconnect.org.au/our-services/homeless-law/>

<sup>2</sup> <https://movingfeast.net/>



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