



Digest

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Post-Pandemic Digital Transformation: Opportunities and Challenges for South Asia and the World

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System for Developing
Countries (RIS).

Syed Munir Khasru*

Abstract: The South Asian region has experienced rapid digitalisation across sectors, most prominently during the COVID-19 pandemic. Through digital transformation developing economies can gain new opportunities and insights, accelerate infrastructure development and spur industrial growth. Despite significant role of digital technology in increasing, complementing, or altering important services and areas of daily life, the digital divide in the Global South is stark and perhaps has increased. This article highlights the avenues for developed, poor, and underrepresented countries to benefit from digital transformation and its components for improving the quality of life. Investment in human capital, necessary infrastructure development and policies would help leverage digitalisation for development.

Digital Transformation: The Global Context

COVID-19 has led to a significant rise in the value of digital technology in enhancing, complementing, or shaping essential services and everyday lives such as healthcare, education, employment, and limited mobility. Despite the increasing acceptance of the utility and benefits of digital technology worldwide, the digital divide is blatantly evident and has considerably widened. The G20 needs to mobilise resources

and insights to support the developing countries achieve a secured and socially inclusive digital transformation amidst these challenging times. In doing so, the G20 will substantially contribute towards capacitating developing nations to envisage and construct a full-fledged and rights-based digital ecosystem, garnering engagement of both public and civil society organizations.

Digital transformation is a progressive and beneficial strategy which can be applied for narrowing down the digital

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divide in the Global South. Apparently, there is considerable disparity in usage of digital technology between the underdeveloped and industrialised countries. The digital divide is a pressing matter impacting the livelihoods of developing countries whereas the privileges enjoyed by developed countries enable them to reap the benefits of cutting-edge technology by placing it in the forefront of socio-economic development. The debilitating culture-lag is posing barriers for poorer regions and small and medium enterprises across South Asia. Meanwhile regions such as Europe are utilising tools such as 3D Printing and Smart Robotics to enrich competency in operational technology. However, Europe is lagging in terms of market convergence and inclusion.

Poorly planned and underfunded infrastructure continues to hinder digital connectivity in the Global South. A minimum of four billion people is deprived of access to a steady internet connection with a meagre 35 per cent of the population from developing countries receiving access to the internet (The World Bank, n.d.). Though broadband connection is available in some of the less developed areas, the connection speed is quite slow. In fact, the download speed in countries with the slowest internet connection is 40 times slower than the download speed in countries with faster connections. Even when the accessibility and speed of the internet connection is ensured, disruptions in electricity obstruct the connections. For instance, only 16 per cent of rural households in India have access to power supply for one to eight hours per day with only 33 per cent having nine to twelve hours and 47 per cent having over 12 hours of access to power supply per day (Alexander and Padmanabhan, 2019). Additionally, affordability and willingness to pay

tampers with the usage of internet. Lack of internet use is often associated with digital literacy (69 per cent), affordability (15 per cent) and relevance (12 per cent) (Kaka et al., 2021).

Innovation often fails to thrive in developing regions because there is an absence of an innovative, transparent, and accountable ecosystem. Discrepancies in the formulation and implementation of policies points toward inconsistency and incoherence. Furthermore, the process of setting up an ecosystem becomes tedious as a result of unnecessarily complex organizational practices and burdensome bureaucratic procedures. Highly competent workers reap more benefits from digital technologies in comparison to their less competent counterparts; thus further widening the digital divide. Digitisation seldom sustains in developing countries as non-affordability coupled with exorbitant costs is a non-negligible issue.

Digitisation is not confined to technological implementation but extends towards the inclusion of governments, institutions, MSMEs, entrepreneurs, doctors, students etc. Digital Transformation entails the holistic utilization of digital technology for effective communication, transference of knowledge, and business development among others. Therefore, digital transformation should function as a tool for social change, ensuring that no one is left behind through inclusive, sensitive, and insightful strategies backed by support of the G20.

There is still a significant gap in the use of digital technology between the industrialized and underdeveloped worlds. While industrialized economies are driving the majority of digital innovation, developing economies are lagging behind due to a variety of

difficulties. Even within developed areas, the gap between large and small businesses, as well as poorer and wealthier regions of the country, is expanding. While certain regions, such as Europe, excel at operational technology like as smart robotics and 3D printing, they fall behind in market inclusion and convergence.

For the developing economies, information technologies are rays of hope as they provide new opportunities for growth as well as new challenges. Adopting latest digitalisation tools and techniques could provide with an array of new opportunities in relation to improved efficiency and productivity, the creation of new jobs and services and better connectivity among agents. The level to which the developing nations are able to acquire these impending benefits is highly dependent on numerous social, economic and institutional magnitudes. Despite surging economic growth and heightened productivity expected from rapid digitisation, digital divides and interrelated forms of segregation and inequalities are commonly observed across countries in the region. This paper sheds light on pathways that will assist developed, underdeveloped, and underrepresented countries to positively exploit digital transformation and leverage its components for achieving a better quality of life.

Challenges of Digital Transformation in South Asia

The COVID-19 pandemic has compelled South Asia to step out of its comfort zone and take a leap toward digitalisation. These changes were the by-product of social-distancing measures followed by a virtual-education and work-from-home culture. Hence, South Asia witnessed an unprecedented spike in

internet penetration, integrating smaller countries such as Nepal into the process. Nepal recorded an approximate 11 per cent boost in the use of broadband internet connections (Nepali Times, 2020). The National Digital Health Mission, an initiative by India is one of the outcomes of India embracing and accelerating digitisation in a post-COVID setting. The National Digital Health Mission features a unique health ID for every citizen in India, increasing the organizational efficiency of health-care service providers. As frequent lockdowns during the pandemic led to the closure of bricks-and-mortar businesses in South Asia, firms resorted to adopt e-commerce platforms supported by digital payment systems. For instance, in Bangladesh, there was a hike by 70-80 per cent in online sales in 2020, shoring up revenues by approximately \$708.46 million (Hasan, 2020).

Despite boasting the world's second largest online market, South Asia is one of the world's poorest regions with a widening disparity of access and affordability in pursuit of digitisation. To comprehend the enormity of the situation, one need not venture further than India, Bangladesh, and Nepal, seeing that respectively 50 per cent, 59 per cent, and 65 per cent of the population do not have access to the internet. In the wake of digitization, with monetary, health, and education assistance schemes distributed online, a large fraction of South Asians were left behind. An estimate of 51 per cent of South Asian women were unable to access and benefit from social protection measures during the pandemic (UNICEF, n.d.). Children too were deprived from home schooling with 88 per cent requiring access to the internet. A disruption in education places children at imminent risk of first, dropping out of school, second, resorting to child labor,

and third, increasing the incidence of child marriage. These disruptions incur economic losses, potentially costing billions of dollars.

Many South Asian organisations have failed to incorporate e-commerce and other cloud-based technologies into their businesses. Hence, several businesses were unable to avert financial chaos and bore the brunt of dilemmas such as a 64 per cent decline in sales. Small enterprises, which were led by women fared the worst amidst the COVID-19 pandemic. As organisations begin to absorb and assimilate digitisation during the pandemic, the gaps in competent skills among the youth will continue to broaden, potentially leading to unemployment.

India has experienced technological advancements in recent years which are often highlighted in other parts of the world. However, despite significant rise in cell phone users, roughly 900 million, there are still huge gaps in access to internet especially the poorer sections of the society. With growing pace of digitalisation in certain segments of population and industries, the digital divide could widen unless enabling policies are in place.

Indian government has put in numerous efforts in promoting digitalisation for many years now. It comprises of efforts to make available majority of public services to all the citizens on the websites of ministries or government agencies or electronically and make the transactions transparent and smooth. In spite of the government's efforts towards increasing digital goods and services in the country, there is evidence of digital divide in the country, which is a reflection of the economic and social well-being of families.

Digital Infrastructure in South Asia

According to the World Bank, even a 10 per cent increase in broadband penetration in Low and Middle Income Countries (LMICs) results in a commensurate increase of 1.38 per cent in GDP (The World Bank, 2009). Digitisation, therefore, can play a crucial role in the recovery of economies. Such a hypothesis turned into reality as a growing number of people and businesses began transitioning towards a “work-from-home” model as the pandemic brought economies to a standstill. Digitization of existing processes became imperative to survival. As a result, investments towards the deployment of digital infrastructure, including cloud-based services, correspondingly accelerated to improve logistics and existing supply chains.

Yet, huge swathes of people across South Asia continue to lack a stable access to internet and digital services. According to the International Telecommunications Union (ITU), there has been a steady decline in the costs of internet connectivity over the years. Fixed broadband connection within the Asia-Pacific region (APAC) remains at 3 per cent of Gross National Income (GNI), higher than the 2 per cent target recommended by the Broadband Commission's affordability target (International Telecommunication Union, 2021). Promoting inclusiveness through commercial aggregation and structuring could help increase demand among investors. Likewise, sharing digital infrastructure such as towers and fibre cable could also help reduce overall capital expenditures, making connectivity more affordable to end-users, particularly in rural establishments.

Back in 2015, India was the only South Asian country to have IT-specific Memorandum of Understanding (MoUs) with over 25 countries, making the need for greater cooperation over best practices in e-governance and bridging digital divide even more critical. But as the number of people going online increases, so will investments in infrastructure. A recent report by Ernst and Young, for example, states that digital infrastructure in India would require investments of up to \$23 billion by 2025 to support growing demands and increasing online traffic (Press Trust of India, 2022) with an estimated 330 million people using 5G even as the government aims to add as many as 800,000 new mobile towers by 2024 with three out of every four connected via optical fibre (PTI,2022).

It is, in addition, important to make such efforts sustainable. Data centres are heavy consumers of electricity with considerable base-loads that may require wider use of renewable sources of energy. Offsetting such industrial requirements through indigenous power generation sources could help flatten peak electricity usage patterns within such systems. 5G, the Internet of Things (IoT), Artificial Intelligence (AI), and cloud computing are expected to collectively generate a demand of 15 to 18 million square feet for data centers, all of which may fuel a rise in investments across Tier II and Tier III cities (Babar, 2021). While investments such as the Asian Infrastructure Investment Bank's (AIIB) \$150 million to develop data centers for LMICs throughout the Asia-Pacific region is a welcome relief, leveraging the consumption potential of emerging digital technologies will demand cogent multilateral funding and institutional support (Asian Infrastructure Investment Bank, 2022).

However, expanding digital infrastructure will also require robust cyber security measures to ward off potential attacks and protect data against vulnerabilities. Global cyber security and digital privacy company Kaspersky estimated that India and Pakistan, among others, will remain among the top five targets for cyber attacks throughout the Asia Pacific Region. Despite the fact that India's cyber security industry nearly doubled in value from \$4.3 billion in 2019 to \$8.5 billion in 2021 with cyber security products growing from \$740 million in 2019 to \$1.37 billion in 2021, serious efforts towards building risk mitigation infrastructure, investing in research and development, and improving talent are needed (PTI, 2021). Bilateral and multilateral cooperation between governments with the involvement of the private sector will be key to building robust cyber security capabilities, similar to the visit of a Bangladesh delegation to the United States in November 2021 to discuss IT and cyber security cooperation.

Enabling digital transformation will also require the right personnel equipped with the necessary capacity to install and deploy technologies such as smart grids, tunneling systems, and rolling out fibre communication suited for transformative accessibility. Such a system would also require the presence of a strong telecommunications regulator to ensure policies governing infrastructure deployment remain sound, competitive, and conducive to innovation. India already remains on track to set up a National Fibre Authority along the lines of other industry regulators, while similar plans are afoot among its South Asian neighbours. Pakistan, for example, approved the Ministry of Information Technology and Telecommunications' (MoITT) plans for "Digital Pakistan" in

2019 that lays out a concrete vision and a conducive environment for technology startups and digital business models. As the pandemic forced digital technologies to take centre-stage, South Asia's service-driven economy would need to reform institutional and regulatory environments and encourage market-oriented training programmes to improve technical skills among industry professionals and an emerging workforce.

According to available data, 41 per cent of small and mid-cap companies in emerging markets currently lack access to sufficient finance. Bridging such a gap through appropriate, affordable, and accessible funding mechanisms will be key in deploying the next generation of communication technologies. Leveraging commercial bank debt for digital infrastructure for mid- to long-term periods could help lower costs, providing an interesting proposition for financiers. AIIB's announcement in November 2021 to invest \$60 million in small and medium enterprises in digital and green energy infrastructure sector in emerging markets could probably address the estimated \$5 trillion funding gap in emerging markets but requires wider private capital mobilisation to improve productivity and reduce the odds of falling behind a technological revolution (World Bank Group, 2020).

Doing so through institutional and stakeholder collaboration to enable the sharing of best practices, learning, and gleaning from the success stories of its counterparts across Southeast Asia such as Singapore and an ecosystem of enterprises would be instrumental in bolstering industrial growth and output. Southeast Asia's internet economy, for example, was on track to exceed \$170 billion in 2021 and to double by 2025 to become one of the world's fastest

growing digital markets, particularly in one key area – online transactions (Baijal et al., 2021). Indonesia, for example, plans to continue developing telecom under the Digital Indonesia Roadmap throughout 2022 with additional support through blended finance schemes.

Indonesia's digital economy is currently valued at \$44 billion alone (Kramadibrata, 2021) – the highest in ASEAN – and is expected to rise eight fold by 2030 with venture capitalists (VCs) remaining bullish on the growth of e-commerce firms and the wider market. Strengths in developing digital infrastructure have enabled South Korea and Japan to promote cross-border trade, logistics, and e-commerce. Engaging in digital public goods (DPGs) and digital public infrastructures (DPIs) for an increasingly "online" population throughout South Asia would yield valuable lessons for emerging markets that can be replicated to similar levels of success; not as blueprints but as reference models for building customized and context-specific foundations with the Sustainable Development Goals (SDGs) in mind.

Summary & Recommendations

Several nations have fallen prey to the trap of applying "short-cuts" to attracting more tech firms whereas they should have simultaneously concentrated on developing the appropriate environment for tech-firms to flourish. For instance, due to its past engagement with socialism, restrictive business environment, and limited cross-border data flows, the tech-ecosystem in Tanzania has failed to garner investments from investors despite exhibiting growth. Developing countries need to assess and pinpoint their unique selling point by leveraging

valid and reliable data & attributes and utilize it to outline their individual value proposition. Case studies from United Arab Emirates and Singapore depict how the two countries have capitalised their unique strengths and utilised it to ensure development through innovation-oriented investment opportunities appealing for large organisations.

Roadmaps for digital transformation need to be intricate and considerate of all essential components such as the legal system, regulation of tax rates, simpler tax administration procedures, and access to energy and digital infrastructure which are reliable. Human capital and skill-enhancement should be guiding principle for sustaining vigorous and consistent digital transformation.

Developing economies may acquire new opportunities and insights through digital transformation which, in turn, would accelerate infrastructure development and spur industrial growth. In fact, digital transformation may be utilized as an impetus for change amidst the challenging times in a post-COVID backdrop. First, digital transformation enables countries to procure production possibilities across borders. Second, it enables MSMEs and both public and private companies in developing countries to improve the operational and business functions. Third, businesses can enrich and enhance their value creation process, and fourth, as digital transformation provides scope for robust cross-border communication, it would enable businesses in developing countries to align their operations as per global business standards.

However, to reap the benefits of and join the fourth industrial revolution, countries must proactively exercise transformative strategies which would accelerate digitization. Developing

countries may utilise technology to generate valuable data that can be utilised as leverage whilst trading and bargaining with suppliers and purchasers from developed countries. However, core countries should engage and cooperate with periphery countries to bridge the culture lag by funding opportunities for development in climate action, SME financing, trade and investment through digital transformation. Of course, effort must be put forth jointly, and countries who want to assimilate the fourth industrial revolution into their economies must firstly, ensure localization through effective planning and budgetary provisions.

Policy makers must direct governments to invest in human capital to oversee successful implementation of a digital revolution. Thirdly, adequate data should be reviewed for sound decision-making and for reviewing institutional competence. Lastly, countries must assert on technology acquisition to leverage information and knowledge spill-overs, which is plausible through inflows of foreign direct investment, migration, academic exchange, use of open platforms, and the use of free software.

One of the most common recommendations for promoting innovation in developing economies is to increase financial support for research and development. Investing more in research and development while organizational practices remain corrupt or ineffective, however, has not produced the expected results in the past. As a result, it is critical to address foundational issues before developing economies can build an innovation ecosystem. This means that the country must create a strong digital transformation and innovation framework that is tailored to the country's resources, needs, and

goals. Economic opportunities, as well as education, health, community, service delivery, and social connections, should all be considered in this framework.

Policies must be supported by a prosperous environment, in which managerial and organizational practices encourage ecosystem development. This necessitates addressing issues such as information flow transparency, access to data for both commercial and public good purposes, the ability of researchers to work independently, encouraging collaboration, sharing and testing of ideas and solutions, public-private partnerships for the design of solutions that meet user needs, elimination of political interference, ensuring rule of law, and eliminating corruption, among others. In this context, it is also important to figure out which parts of the framework involving technological innovations should be made open to the public, i.e. open access.

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