

POLICY PAPER - 01

TECH-GEOPOLITICS AND BANGLADESH'S ASPIRATION AND REALITY: UNPACKING INTERNAL AND EXTERNAL DRIVERS AND CHALLENGES

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ABSTRACT

Global and regional tech competition significantly shapes aspiring tech countries' technological development. The paper takes Bangladesh as a case study. The Bangladesh government has taken various tech policy initiatives such as 'smart Bangladesh' to fulfil its tech vision. Bangladesh has been emphasizing the role of technology in civil and security affairs. But, in the age of rapidly changing world of technology, Bangladesh needs support of the advanced tech states to overcome internal challenges. The growing tech rivalries on regional and global scales could be substantial challenges for Bangladesh to achieve its tech dream. However, various internal and external factors shape Bangladesh's tech policy development and initiatives; the paper analyses how these drivers (external and internal) play out in national tech initiatives and the outcome.

1.0 INTRODUCTION

This is an era of technology. National-to-human security, state-to-individual, and all other areas directly depend on technology. The positive part is that due to technological globalization, all countries are aware of the importance of technology in civil and military affairs. However, technological development spread differently, and major powers still leverage advanced science and technology to demonstrate their power and influence geopolitics. The dependency on technology is increasing daily, and no one state can deny the reality. Bangladesh is no exception; with the growing economic development, the country has focused on adopting various advanced technologies (a combination of emerging and cutting-edge technologies) and increased investment in various tech infrastructures for not only the betterment of the nation and to improve people's lives and to make a technologically advanced society but also projecting development. Bangladesh is an aspiring state regarding technological development; till today, the country is largely dependent on other technologically advanced states. However, the global and regional technological landscape is also changing. Global techno-geopolitics and competitions have evolved into something akin to China vs. Quadrilateral Security Dialogue (QUAD), with regional competition between China and India evident in various domains. So, the existing techno geopolitics directly and indirectly affect aspiring tech nations like Bangladesh. Therefore, the study analyses how external and internal drivers shape Bangladesh's tech aspirations, initiatives and policy progress.

The paper has six sections. Section one talks about the conceptual framework of the study; Section two discusses the emergence of Bangladesh as an aspiring tech nation; Section three analyses the role of external drivers in Bangladesh's tech aspiration and talks about existing tech-geopolitics and how it creates an opportunity or challenges; Section four investigates how internal drivers shape Bangladesh tech-vision and policies; Section five includes limitations of Bangladesh tech initiatives, policy and development; Section six concludes the paper.

2.0 METHODOLOGY

The study uses qualitative approaches, applying questions, hypotheses and observation to understand the research problem. The study hypothesis is "Do External and Internal factors play a substantial role in shaping Bangladesh's tech-ambition and policies?" The study collected data from secondary sources like articles, newspapers, books, and government and international organization websites. The study's primary limitation is that it could not conduct field research due to time constraints. This paper uses external and internal drivers to understand Bangladesh's tech aspiration.

3.0 CONCEPTUAL FRAMEWORK

Advanced technologies are not equally accessible worldwide. Meanwhile, technological inequality is increasing, and many least developed or developing countries need access to modern technologies and are left behind socio-economically. Technological backwardness also creates threats against national security for these nation. At the same time, the growing tech war and polarization can create challenges for emerging economies. Bangladesh's tech aspiration grows from geopolitical factors and internal drivers like political will, socio-economic needs and security. The study has taken a structured approach to examine the interplay between external and internal factors influencing Bangladesh's tech ambition.

Moreover, the paper also tries to investigate the existing tech policies' success and limitations and also asses Bangladesh tech visions like "Digital Bangladesh and "Smart Bangladesh". By doing so, the study carefully considers how the present tech rivalries and geopolitical complexities affect aspiring tech nations like Bangladesh, emphasizes the country's internal tech ecosystem and analyses the government's various tech initiatives and policies. Furthermore, the study highlights how Bangladesh cooperates with regional and extra-regional actors for technological development to build a tech nation.

What do we understand by the word tech nation? And Tech Power? In a general overview, tech nation categories are those capable of producing, developing and innovating technologies to achieve civil and military ambitions. The concept of tech nation is closely linked with other popular terms like tech nationalism, tech power, and cyber power. Major tech nations have weaponized technological capabilities to influence international and regional geopolitics and also used in hard power and soft power strategies. However, Techno-geopolitics is the interplay between technology and geopolitics, where countries use technology to project power, leverage geopolitical interest and influence or dominate other countries. During the Cold War, a significant shift occurred in techno geopolitics, shaping the superpower's tech policies and investments. The competition in computer and satellite technologies occurred between the two superpowers during the 1960s and 1970s.

To this day, the race for technological superiority continues. However, the difference is that many actors are now involved, not limited to just two superpowers. Instead, it is more about Asian countries like China, Japan, South Korea, Taiwan and India. For instance, the current US policy aims to contain China's technological strategy and expansion by implementing export sanctions on semiconductors. QUAD (Quadrilateral Security Dialogue) countries met in Japan during a side-line meeting of the G-7 (Johnson, 2023) and announced a de-risking strategy to contain China. Therefore, the ongoing tech-geopolitical rivalries can pose more challenges for aspiring tech nations like Bangladesh. In addition to the challenging techno geopolitical competitions and rivalries, Bangladesh faces several internal drivers and challenges in establishing a tech-based state.

4.0 EMERGENCE OF BANGLADESH AS AN ASPIRING TECH NATION

The country's first tech policy was initiated in 1986. In 2002, the Ministry of Science and Technology was renamed the Ministry of Science, Information, and Technology (MOICT), and in the same year, the first ICT policy was formulated. However, the ICT policy underwent multiple revisions, posing a significant challenge for an aspiring nation. The country began shaping the ICT Act in 2006, with the primary objective of diversifying the use of ICT to establish an accountable and responsive government. In the ICT policy 2009, the Bangladeshi government emphasized socio-economic development to achieve

middle-income status. This policy prioritized social equity, integrity, education, employment, healthcare, universal internet access, climate, and disaster management.

The development of Bangladesh's tech policy can be divided into two key phases: the first phase aims to achieve middle-income status by 2021, and the second phase aspires to attain upper-middle-income status by 2041 (Aziz, 2020). In the first phase, the government sought to leverage ICT services to enhance productivity, encouraged youth to receive ICT training, and made ICT education compulsory in secondary, vocational, and technical education. The government also pledged support to software and ITES companies. In 2020, Bangladesh passed the National Industrial 4.0 Policy to modernize the country's manufacturing sector. The government, private sector, and startups are now harnessing advanced technologies to enhance productivity, efficiency, and competitiveness (Mazumdar & Alharahsheh, 2020). This policy outlines the digitization and automation of industrial processes using IoT, AI, and Big Data. 4.0 technologies are a pivotal part of the Digital Bangladesh initiative, which aims to build a digital ecosystem in the country (Mazumdar & Alharahsheh, 2020).

However, Bangladesh's major tech transition is engaging with cyber security issues. Though the government established the ICT Act, mainly focusing on combating cybercrime and establishing norms governing cyber activities, the country still needs to follow the global standard of cyber acts and policy. In 2018, the government enacted the 'Digital Security Act,' which aims to prevent any forms of communal, racial, or offensive comments on digital platforms directed against individuals, communities, or groups. The most contentious section of the DSA is section 25, addressing offences and punishments for transmitting and publishing offensive, false, or threatening information on the internet. Section 31 of the DSA outlines penalties for disturbing law and order by posting communal, racial, and disrespectful comments on digital media.

The primary goal of these acts is to prevent all forms of racism, extremism, or hate speech against individuals and ethnic or religious minorities through digital platforms such as social media or any other electronic media. During the pandemic, the government observed a significant increase in reported cybercrimes. Although the country is still adapting to emerging technologies, certain areas, such as cyber norms and how digital platforms can potentially mislead and incite communal violence through misinformation, need more comprehensive addressing because some individuals may misuse their constitutional rights to freedom of expression. "Article 39(2) of the constitution of Bangladesh guarantees the right of every citizen to freedom of speech and expression and freedom of the press" (Kumar, 2021). Therefore, the state should clarify how digital platforms can pose extreme national security risks through false/misinformation or propaganda and can impact individual mental health, family life, and social life. Simultaneously, the state should ensure citizens' rights to free speech and raise public awareness of appropriate cyber-space activities. The government is currently working on new cybersecurity laws to provide more clarity regarding cyber activities and norms.

Nonetheless, Bangladesh is an aspiring country in terms of building critical infrastructure for emerging technologies, and significant challenges lie ahead in implementing a national tech policy to establish indigenous tech capabilities that meet global standards. After the vision of making 'Digital Bangladesh,' the country is working on building 'Smart Bangladesh.' Various sources primarily clarify that "Smart" refers to the capability of using advanced technologies or cutting-edge technologies in all sectors. The "Smart Bangladesh" contains four strategic pillars – Smart Government, Smart Economy, Smart Society, and Smart Citizen. Through this project, the government wants to reshape the country with a tech-based society, a governance system, a cashless digital economic ecosystem, and a tech-advanced nation.

The Bangladesh government aims to implement the "Smart Bangladesh Policy" to leverage advanced technologies, such as the Internet of Things, artificial intelligence, blockchain, big data, robotics, drone technology, 3D printing, and other cutting-edge technologies to enhance various aspects of society (Kabir, 2022, para: 3). While the country is relatively new to utilizing AI in various sectors, it proposed the 'Artificial Activities Act' in 2020. According to Accenture research in 12 developed economies, AI has the potential to double annual economic growth rates by 2035, and labor productivity can increase by up to 40 percent by leveraging emerging technologies in industries (Information and Communication Technology Division, Government of the People's Republic of Bangladesh, 2020).

5.0 EXISTING TECH-GEOPOLITICS AND EXTERNAL FACTOR : OPPORTUNITY OR CHALLENGES FOR BANGLADESH

In the age of the new tech cold war, technological competitions have evolved with multiple actors on regional and global scales. Ongoing tech wars among major powers challenge aspiring tech nations in South Asia. The technological competition between the USA and China is intensifying. The Chinese Government introduced the 'Made in China 2025' initiative to attain technological power with economic benefits (McBride & Chatzky, 2019). India is a regional leader in Information Communication Technology (ICT) and aims to digitize its manufacturing industry by 2030. India has already taken steps to counter Chinese techno-expansionism (Chikermane, 2023). India banned 138 Chinese apps within the country (Sunilkumar, 2023), and after obtaining the G-20 presidency, it has focused exclusively on critical technology cooperation areas like cyberspace security and data sharing (Pany, 2022). Developing nations cannot ignore the reality of tech domination, and aspiring tech nations are becoming victims of ongoing tech competitions. In the case of Bangladesh, it did not become part of the existing tech polarisation nor join any alliances.

However, major tech states' increasing techno-polarization and containment policies can disrupt the global tech supply chain. For instance, to promote mobile manufacturing and assembler industries like smartphones, the country allows many global tech giants to establish mobile manufacturing and assembly companies to establish factories in Bangladesh. Currently, the country has 14 mobile manufacturing companies. Foreign mobile manufacturing companies like Samsung, Vivo, Nokia, Oppo and Xiami have set up factories in Bangladesh. Besides these, local companies of Bangladesh like Pran Ref Group, Fair Electronic, Walton, and Edison also boost indigenous electronics and mobile manufacturing industries. However, tech-war disrupted the supply chain of raw materials, which may causes hurdles for emerging mobile manufacturing and assembler industries in Bangladesh.

Bangladesh is located in a complex and the world's least integrated region. India and Pakistan's hostility and competition are observed in every sphere. The worrisome fact is that both countries have nuclear capability, though India is more developed in terms of technological development. Additionally, China's influence often puts other regional states, including Bangladesh, in a dilemma when choosing trade partners or friendly neighbours. In this context, existing geopolitical conditions have yet to facilitate Bangladesh's efforts to overcome its tech challenges with the assistance of India and China. The country adheres to a non-aligned foreign policy and has actively pursued technological support from India and China, encompassing economic, military, disaster management, and e-governance systems.

Bangladesh and India have signed several MoUs in technological fields in recent years. For example, Bangladesh signed an MoU with India in 2017 to extend cooperation in the field of space science, technology and applications, including remote sensing of the earth; satellite communication and satellite-based navigation; Space science and planetary exploration; use of spacecraft and space systems and ground system; and application of space technology" (Press Information Bureau Government of India Cabinet,2017); In 2022, the 7th Joint Consultative Meeting, the External Affairs Ministers of both India and Bangladesh called for expanding their strategic partnership to enhance cooperation in emerging technologies such as AI, cybersecurity, and fintech (Joint Press Release-7th Round of India-Bangladesh Joint Consultative Commission, 2022). This year, another MoU took place between both countries on a "Digital Payment Mechanism". During "Prime Minister Hasina's recent participation in the G20 summit in New Delhi, she engaged in bilateral talks with PM Modi of India, and both countries signed three memorandums of understanding (MoUs), including cooperation on digital payment mechanisms. The MoU on cooperation in the digital payment mechanism was signed between the National Payments Corporation of India (NPCI) and the Bangladesh Bank."(Chaudhury, 2023).

On the other hand, China is not only a significant trade partner of Bangladesh but also a technological support provider. Bangladesh joined the Belt and Road Initiatives in 2015, leading to China's involvement in tech infrastructure and investment. Chinese technology transfer (TT) has gradually increased in Bangladesh through Foreign Direct Investment, though the TT was primarily related to the RMG (Ready-Made Garments) industry. Furthermore, China has assisted Bangladesh in developing ICT infrastructure and technological research and development as part of Belt and Road Initiative (BRI) assistance. "China's leading technology company, Huawei, has planned to build the first ICT Academy at BUET, providing training for students to meet the country's ICT sector needs, with 250 students from BUET participating in this training, ultimately creating an ICT ecosystem." Several joint ventures between the two countries have accelerated the pace of technology transfer to Bangladesh from China (Akter et al., 2023). China has financed the sixth-largest data center in Bangladesh, which will be the first Tier IV data center in South Asia. The country also shares deep collaborative ties with China in the Information and Communications Technology sectors. China has assisted Bangladesh in developing 'Info-Sarker' phase 2 (a national infra network for the Bangladesh government) and is also funding the 'Info-Sarker' phase 3 project. Bangladesh has sought Chinese funds for the 'Modernization of Telecommunication Network for Digital Connectivity project. Apart from BRI projects, it has been observed that China has tried to convince Bangladesh to join the BeiDou network and Space Silk Road policy. India remains skeptical regarding China's engagement in Bangladesh's tech sector, but Bangladesh has maintained a balanced friendship with both Asian powers so far.

No doubt, techno-geopolitical events and regional and global tech trends have influenced Bangladesh's tech aspirations, and it would be unwise for any country to ignore the digital wave. As the country is in a transitional period, the state needs meaningful tech diplomacy and policy initiatives to overcome tech barriers and safeguard national priorities and interests in the tech spectrum.

However, the challenge for Bangladesh is to survive in the ongoing technological race and trade-offs between the USA and China. The US and European Countries are Bangladesh's major export partners in ready-made garments (RMG). Furthermore, China is the country's key trade partner and arms supplier. Although Bangladesh is not directly involved in this major power competition and containment policies. However, there is a growing risk that tech rivalries can affect tech supply chains, potentially impacting Bangladesh's growing tech industry. Despite the country's declared neutrality through the "Indo-Pacific

Outlook," the ongoing tech war and technological containment policy between regional tech powers China and India could pose more significant challenges. Till today, Bangladesh is utilizing a non-alignment policy and balancing approaches to maintaining good relations with India and China.

Nevertheless, the essential factor to remember is that more than these approaches are needed to preserve the country's tech interest in today's geopolitical era. For instance, India has announced to counter China in the cyber and space domain, so if the tech competition and rivalry complexity increases, Bangladesh will be caught between two regional tech powers. Therefore, Bangladesh must take a stronger techno-diplomacy and strategy to approach other regional tech players like South Korea, Japan and Taiwan to reduce dependency only on India and China. The global tech market is flourishing, and Bangladesh can be a hub of tech manufacturing, so more than national tech policy is needed; the country needs techno diplomacy and cooperation with other tech nations.

5.1 Projecting Development on Global and Regional Stages

Bangladesh aims to invest in modern technologies to showcase development on the regional and global stage. Bangladesh is no exception in this regard. Its closest neighbor, India, launched the 'Digital India' policy in 2015 (Sheokand & Gupta, 2017; Dani, 2022), and Pakistan also initiated its first 'Digital Pakistan Policy' in 2018 (Jamil, 2021). Comparatively, Bangladesh is still catching up in adopting a tech-centric national policy. This regional trend has led the government to invest in many high-expenditure projects as part of its economic success and the intention to acquire technology for a better regional and global position. Through the 'Bangabandhu-1 satellite, Bangladesh joined the space club in 2018 and became one of 57 states. It was a challenging feat for Bangladesh to enter the Geostationary Orbits. The country initially did not receive the orbital slots, but due to its strong relations with Russia, it could secure an orbital slot and complete its first space mission. "With India and China being the central space-faring states of the region, and Pakistan aspiring to be a regional space power, Bangladesh could not afford to ignore the immediate need for outer-space technology like a satellite to safeguard its national interests and sovereignty" (Sharmin, 2022, p.169). Through the first satellite launch, Bangladesh was able to project its technological desire and economic capability in the regional and global states.

5.2 Lesson from Geopolitical Event

Global geopolitical events have significantly shaped any country's tech infrastructure and policy process. The Russia-Ukraine war highlighted the importance of technology like Starlink Satellites for communication services and preserving national security. Competition over technological advancement or tech power is intertwined with territorial interests. Countries have become more techno-centric to leverage national interests.

Bangladesh also diversifies economic sources and employment opportunities by integrating the digital economy. The country's online employment sector has experienced significant growth, particularly during the last pandemic. "Currently, the state has more than 650 thousand IT service freelancers, contributing 500 million US dollars to the economy yearly" (Kabir, 2022). Bangladesh aims to reduce the gender gap in employment opportunities by leveraging technology and online platforms. Government data indicates that 900,000 women work as freelancers in the online domain, but concerning the total female population of 84,641,942, the number of female freelancers is comparatively low.

5.3 Competing in the Global Economy

Technology is a compulsion in the new economic order. After the Fourth Industrial Revolution (4IR), digitalization, automation, and emerging technologies have reshaped the economic structure. Bangladesh's primary economic sector is RMG, and the future of this sector depends on the adaptation of emerging and cutting-edge technology. Buyers are demanding more tech-driven products. Bangladesh has to change its traditional manufacturing system to maintain global standards. Bangladesh's major competitor in the global apparel market is China, which is applying emerging technologies in the RMG sectors.

6.0 INTERNAL DRIVERS AND TECHNOLOGICAL DEVELOPMENT: POLITICAL FACTOR

Bangladesh has been actively engaged in technological and economic transformation since 2006. The concept of 'Digital Bangladesh' was a significant component of the Awami League's election manifesto. Countries are utilizing digital technologies to communicate with billions of people, and the digital domain has become an integral part of the liberal democratic system. The digital platform now plays a crucial role in political activities such as elections and public movements. This is why political parties in the global South invest in mega tech projects to gain popularity and support, both domestically and internationally. Social media platforms like Facebook, Twitter, and even TikTok have become essential tools for political movements.

6.1 Tech for Fostering Economic Development

The country has announced plans to build a technology-driven and digitally developed nation, enabling a knowledge-based society where everyone has easy access to technology. Bangladesh was hit by an extreme heatwave, challenging food security systems this year. Therefore, the government is adopting digital technologies in agriculture to enhance production. For example, using the internet can provide farmers with information regarding early floods and knowledge about modern agricultural systems. However, in this case, the major challenge before the government is to ensure access to technologies and internet data at a low cost, or the government can provide tech support and training to the country's farmers by building IT centres. The Bangladesh government has made another move towards science and technology by investing in the first geostationary communication satellite, Bangabandhu-1. The satellite, launched in 2018 to provide internet coverage to the country's remotest areas, will enhance e-learning and e-banking support in the periphery. The government has also invested in the second satellite, 'Bangabandhu-2,' in cooperation with ROSCOS, Russia.

Furthermore, recently, the country signed a bilateral agreement with France to build an earth observatory system. Besides agriculture, the country's major economic source is the apparel industry, with the Ready-Made Garment (RMG) sector contributing 11.2% to the country's Gross Domestic Product (GDP). The country also plans to adopt the Internet of Things, Blockchain, and Artificial Intelligence to increase efficient RMG manufacturing and markets. However, there are challenges due to the need for more infrastructure, expertise, and technological resources to adopt emerging technologies. However, the country has to overcome these barriers to survive in the competitive apparel industry.

6.2 Cyber Security: National Security and Human Security aspect

Lastly, the technological revolution has made security affairs more challenging for states. Protecting state data through robust cybersecurity measures is essential for every state. Any state's sovereignty can be challenged by technological interference and cyber threats. State data is more sophisticated than territorial borders, and developing nations are more vulnerable to cyberattacks due to weak tech infrastructure. For example, in 2007, Estonia fell victim to a cyberattack, and Georgia faced a virtual war against Russia (Deibert, Rohozinski, & Crete-Nishihata, 2012). Therefore, national security now relies on a state's ability to protect the digital domain.

Another critical aspect of integrating technology into governance and citizen life is ensuring cyber security and transparency. Hackers have targeted not only state agencies but also individuals in Bangladesh. "A hacker group called 'Hafnium' has launched attacks on more than 200 organizations in Bangladesh, including the Bangladesh Telecommunication Regulatory Commission (BTRC), Bangladesh Bank, commercial banks, and internet service providers" (Egok, 2021, para. 1). In his recent participation in UNGA78, the ICT minister Zunaid Ahmed Palak talked about Bangladesh's Cyber Policy. He said, "Bangladesh has a good share in the online market, so we need to secure our cyberspaces; otherwise, our financial, trade, commerce, and even our country's image will be affected. So, to mitigate this risk, Bangladesh must invest in robust cyber security." He also proposed information sharing, capacity building, international agreements, incident response, and improving cyber security standards and public-private partnerships.

Technological development has also brought many aspects to our lives. Communication technology, such as mobile devices and digital platforms like Facebook or Twitter, enhances freedom of expression, but at the same time, these sources complicate human security issues. Cyber-attacks, data fraud, and cyberbullying affect civilian life. The country has 66.94 million internet users and 44.70 million social media users. The government has taken several key initiatives to counter cyberattacks and made a cyber act/ digital security act to control cybercrime and offences.

6.3 Inclusion of Technology to achieve sustainable development goals

Bangladesh, representing 163 million people, is an emerging economic power in South Asia. However, the country still faces numerous socio-economic challenges. It grapples with severe global warming and is one of the most disaster-prone regions in South Asia. According to a study by UNOOSA (United Nations Office for Outer Space Affairs) and the European Global Navigation Satellite System Agency (2018), 65 Sustainable Development Goals (SDGs) directly benefit from using Earth observation and navigation satellite systems (Pippo, 2018). The Bangladesh government has emphasized incorporating modern technologies, such as satellite space technologies, to achieve SDG targets.

6.4 Investment in Critical Tech Infrastructure and Aim of Good Governance

The government initiated digitalization projects to modernize public services and governance patterns. The Government of Bangladesh has invested in costly critical technology projects and infrastructure, such as 'Bangabandhu-1' and 'Bangladesh-2' satellites and ground station projects, 'Data Centre,' and 'High-Tech City.'

The government aims to diversify the country's economic sources by promoting digital employment. Bangladesh ranks second in South Asia in terms of online freelancing. The state recognizes the importance of building cybersecurity to protect the state and its citizens in the digital domain. As part of this initiative, Bangladesh established Hi-Tech City in Joydebpur, the seventh-largest data centre in the world. The National Data Centre has become a significant source of foreign investment for the country and has reduced its reliance on other countries for data protection. The Tier-IV data center ensures the safety of state and citizen data, saving 353 core BDT annually (2021). However, in today's world, no single country can guarantee cybersecurity. After the Bangladesh Bank heist in 2016, Bangladesh became more vigilant. The country also adopted "Oracle Cloud Infrastructure Dedicated Region Cloud@Customer" to accelerate digital government activities such as the digital economy, digital payments, e-health services, e-voting, e-filing, and virtual court systems, among others (The Government of the People's Republic of Bangladesh, through BDCCL and the ICT Division, Selects Oracle Cloud Infrastructure, 2021). In a recent sideline meeting of UNGA78, the ICT Minister discussed cyber vulnerability and sought multilateral cooperation and capacity building.

6.5 Integration of Technology in Education Section

The government has transformed the educational system and infrastructure by integrating technology. During the pandemic, the state recognized the importance of online education and its relevance. The country's educational institutions have adopted various educational apps, podcasts, learning management systems (LMS), video conferencing software such as Google Meet and Zoom, and social media as teaching methods. Several online platforms, including 10 Minute School, Shikho, Interactive Cares, Ostad, EduHive, Sohopathi, Konnect, and Muktopaath, are gaining popularity in the educational tech market (Shesheir and Ahmed, June 23, 2023). However, a significant percentage of the country's population needs more technological knowledge and needs to learn how to make the best use of it. The government has made ICT education compulsory for grades 6 to 12 and has established 18,000 ICT labs for school and college students. Nevertheless, several areas, such as tech infrastructure, technical knowledge and training, and cyber norms and regulations, need more emphasis.

6.6 Technology for Climate Action

Another critical objective of the digital economy is to reduce carbon emissions. As a victim of climate change, Bangladesh planned to promote digital industries. According to the World Economic Forum, if digital technologies can be used in industrial sectors, they could reduce global carbon emissions by at least 20% by 2050 (George et al., 2022). Bangladesh, like other developing countries, has realized the importance of emerging technologies during the pandemic. The COVID-19 pandemic opened up the possibilities of digital platforms as employment opportunities and helped reduce the high percentage of carbon emissions during the pandemic. The Bangladesh government intends to launch the Remote Sensing satellite "Bangabandhu-2" to mitigate threats related to climate-related extremes like floods. Remote Sensing Satellites can be used to understand, prevent, and mitigate climate change and disasters (Subraelu et al., 2022).

6.7 Reducing Digital Devine: Inclusion of women and underprivileged community with Technology

The government has proposed to create a society and an innovative country by incorporating technology into every governance sector. The country's major economic sectors are ready-made garments and agriculture. Nevertheless, during the pandemic, the state observed a significant economic transformation through remote work and social media as a platform for businesses and marketing. Many homemakers ventured into online businesses and generated employment opportunities in 2020. That is why the state has introduced the Smart Bangladesh initiative to reduce the digital divide and provide equal opportunities for all.

7.0 LIMITATIONS OF BANGLADESH TECH INITIATIVES, POLICY AND DEVELOPMENT ACCESS AND AVAILABILITY OF INTERNET, PRICE AND SPEED

The government's first tech-based initiative was ensuring smooth communication facilities for all. No doubt, the country is capable of providing smooth internet communication facilities. Nevertheless, the hindrance remained in many areas. As per Ookla's Speedtest Global Index of 2023, Bangladesh ranked 120th among 141 counties regarding mobile internet speed (NEWAGE, 2023). So, the government still needs to work on increasing internet communication speed. 66.94 million People currently use the internet. Bangladesh launched 4G in 2018. Bangladesh has 95% coverage of 4G but only around 50% smartphone penetration. The government promised to ensure the availability of fifth-generation internet service and 5G internet facilities nationwide by 2023. According to the Global Mobile Communication Industry Association (GSMA), "only 6 percent of the total mobile network users of Bangladesh will able to enjoy 5G internet facility". Through the 5G launch, the country will ensure the fastest connectivity, but the data price of mobile internet still burdens a more significant section of users in the country. As per Worldwide Mobile Data Pricing 2022 (by UK firm Cable.co.uk; it is a British organization that reviews mobile data price and speed), "

7.1 Access of Smart Phone/Android

As per Global Mobile Communication Industry GSA Association(GSMA), 'Till 2019, only 40 percent mobile user had smartphone or android, which could increase 69 percent by 2025, however, comparing with Bangladesh's neighbouring states in India and Pakistan the number of smartphone users could rise up to 70-80 percent by 2025'(Bhuiyan and Hossain, 2020). The Networked Readiness Index report states, "The country ranked 88th among 131 countries. The index shows some strengths in areas such as the rate of internet use, affordable prices, investment in telecommunication services, and reducing discrimination in digital transactions in both the city and rural areas. At the same time, weaknesses persist in e-commerce policy and the gender-based gap in internet use" (Network Readiness Index 2022). Bangladesh ranked 12th among 233 countries in terms of mobile data prices. 1 GB of mobile data costs about \$0.32 or Tk33 in Bangladesh (The Daily Star, 2022).

7.2 Risk of Unemployment

There is a need to foster collaboration between the state and private sectors. Bangladesh plans to adopt emerging technologies like AI in the RMG sector and diversify the economy through a digital economic structure. However, the government has to be careful because automation and AI may increase productivity and, at the same time, challenge employment sectors. Most of the population may lose jobs, so the state should train and make the RMG labor into human capital. Government funds and incentives are essential to promote the digital industries.

7.3 Lack of funding in the Research and Development sector

Bangladesh tech initiatives' major limitation is the need for more research and development funding. There is an urgency to build knowledge-based academic institutions, research centers, and ICT industries to train and create a skilled ICT community. Currently, the country's central population comprises the young generation, which can be a tremendous human capital for a growing ICT-based economic structure. The government has established many universities to enhance STEM education, but every university needs to make the Research and Development department compulsory. The most worrisome fact is that female students are lacking in STEM education. Funds and scholarships are urgently needed to increase the number of female students in STEM education.

7.4 Technology and Question of Digital Devine

Though the government of Bangladesh tries to attract and engage more underprivileged women in the digital economy, the country's female children and women do not have equal technological access due to the patriarchal family system. So, state tech policy should address these issues and establish equal opportunities. Other than digital inequality, women are also victims of cyberbullying and harassment, which is a potential barrier to women's empowerment in the digital domain. 'Cyberbullying is a growing human security issue in Bangladesh, where 80% of respondents are women and girls. Bangladesh government launched 'Police Cyber Support for Women in 2020' (Parvin & Tushar, 2023). According to the Action Aid Bangladesh report, 63.51% of women respondents said that they faced online violence, which was 50.19% in 2022' (Study: 63.51% of women in Bangladesh in Bangladesh face online violence, 2022).

7.5 Legal Aspect: Public Discontent

There is a need for a clear national technology strategy, regulations, and ICT norms because a lack of a clear legal framework creates ambiguity and misused. Earlier, the study discussed the controversy and ambiguity regarding some DSA laws/Acts, which shows a clear gap between the government and the people. The state should clarify tech-based laws and norms because the digital domain is the most critical regarding human security, and the state has a more significant role.

7.6 Increasing use of tech devices and Risk of E-waste

Bangladesh introduced fifth-generation wireless network technology (5G) in 2023, which enables faster download speeds, low latency, and increased connectivity for billions of devices. However, there is growing concern about the immediate impact of 5G on the country's environment and whether the government has sufficient policies to monitor the environmental effects. The state will require a considerable number of smartphone imports to utilize the 5G network, which will result in significant technological waste, potentially harmful to Bangladesh. In addition to environmental concerns, 5G may also pose risks to human health. According to Dr Pall, prolonged use of 5G can lead to issues such as blindness, hearing loss, skin cancers, male infertility, and thyroid problems. It also has long-term effects, including cancers and DNA damage. It can impact children and carry a risk of autism and asthma (Mozumder, 2019, para. 3). On One side, people are moving towards the tech age and on the other side, increasing e-waste has become an environmental challenge before Bangladesh. 'It takes ten years to establish E-waste Management rules. However, the government has established a reliable recycling system at the Bangabandhu Hi-Tech Park, which needs to be improved compared to the increasing e-waste management challenges (Jamil, 05, June 2023). There needs to be more investment in e-waste management infrastructure. The government should address the e-waste management issue in national tech initiatives.

8.0 LACK OF TECH DIPLOMACY AND BI-LATERAL TECH COOPERATION

National tech policy needs to clarify how Bangladesh should approach other countries to cooperate or collaborate. There should be a link between Bangladesh's national tech policy and external tech strategy. Bangladesh's vision of becoming a smart nation by 2041 result of global and regional changes. Bangladesh's tech policy and initiatives should consider the techno geopolitical changes; the country can approach more countries for techno-cooperation.

9.0 CONCLUSION

No wonder the Bangladesh government has tried to incorporate digitalization in every sector to enrich economic growth, individual or even community growth in education, countering poverty and hunger, or even environmental security-related issues. The reality of Bangladesh's tech initiatives and development presents many obstacles and challenges, which can be overcome by paying more attention to tech investment, capacity building, public-private partnership, tax relaxation and incentives, and bilateral and multilateral cooperation. Bangladesh already entered the technological era, and it is time to act with adequate policy, which will turn our dream of a smart Bangladesh into reality.

10.0 REFERENCES

- Adams, J., & Albakajai, M. (2016). Cyberspace: A new threat to the sovereignty of the state. *Management Studies*, 4(6), p.258
- Afrin, S. (2022) Digital Bangladesh unfinished, now govt's new vision Smart Bangladesh, Prothom Alo English, <https://en.prothomalo.com/bangladesh/government/y7hpqsqs47>
- Ahmed, L. C. N. U. (2019). Emergence of Artificial Intelligence in future warfare: Preparedness of Bangladesh Armed Forces. *NDC E-JOURNAL*, 18(1), 179-209.
- Ahmed, S. (2021) Why Bangladesh should invest in artificial intelligence, <https://www.thedailystar.net/views/opinion/news/why-bangladesh-should-invest-artificial-intelligence-2196116>
- Akter, S. N., Bi, S., Qiu, X., & Sarker, M. N. I. (2023). Technological prospects of Belt and Road Initiative in Bangladesh. *Heliyon*, 9(7).
- Allen, G.C. (2023) China's New Strategy for Waging the Microchip Tech War, <https://www.csis.org/analysis/chinas-new-strategy-waging-microchip-tech-war>
- Aziz, A. (2020). Digital inclusion challenges in Bangladesh: The case of the National ICT Policy. *Contemporary South Asia*, 28(3), 304-319.
- Bangladesh has 7th largest data centre in the world: Here's how it can earn foreign currency (2021) *The Daily Star*, <https://www.thedailystar.net/tech-startup/news/bangladesh-has-the-worlds-7th-largest-data-centre-heres-how-it-can-earn-foreign-currency-2928846>
- Bangladesh moved 8 steps in UN EGD I 2022(2022) Press Release, <https://a2i.gov.bd/press-release/bangladesh-moved-8-steps-in-un-egdi-2022/>
- Bhuiyan, M. & Hossain, M.(2020) Bangladesh to see only 6% 5G network users in 2025, *The Business Standard*, <https://www.tbsnews.net/bangladesh/telecom/bangladesh-see-only-6-5g-network-users-2025-103087>Chau dhury, D. R. (2023) India, Bangladesh sign MouU on smoother cross-border payment transactions, *The Economic Times*, <https://economictimes.indiatimes.com/news/india/india-bangladesh-sign-mou-on-smoother-cross-border-payment-transactions/articleshow/103517972.cm>
- Center, S. & Bates, E. (2019) Tech-Polititik: Historical Perspectives on Innovation, Technology, and Strategic Competition, Centre for Strategic and International Studies, <https://www.csis.org/analysis/tech-politik-historical-perspectives-innovation-technology-and-strategic-competition>
- Chikermane, G. (2023) A brief history of India-US relations: Nehru to Modi, Truman to Biden, Observer Research Foundation, <https://www.orfonline.org/expert-speak/a-brief-history-of-india-us-relations/>
- Egok, H. (2021) Cyber-attacks hit over 200 organizations including Bangladesh Bank, BTRC, Dhaka Tribune, <https://www.dhakatribune.com/bangladesh/242875/cyber-attacks-hit-over-200-organizations-including>
- Fukuda-Parr, S. (2003). New threats to human security in the era of globalization. *Journal of human development*, 4(2), 167-179.
- Given, L. M. (Ed.). (2008). *The Sage encyclopedia of qualitative research methods*. Sage publications.
- Godinho, M. M., & Simões, V. C. (2023). The Tech Cold War: What can we learn from the most dynamic patent classes?. *International Business Review*, 102140.

- Hasan, M. (2023) Global Innovation Index, Bangladesh moves up 14 notches, The Daily Star, <https://www.thedailystar.net/business/economy/news/bangladesh-moves-14-notches-3221211>
- Information and Communication Technology Division Government of the People's Republic of Bangladesh (2020), ICT, Portal, Bangladesh, p.2, https://ictd.portal.gov.bd/sites/default/files/files/ictd.portal.gov.bd/legislative_information/c2fafbbe_599c_48e2_bae7_bfa15e0d745d/National%20Strategy%20for%20Artificial%20Intelligence%20-%20Bangladesh%20.pdf
- Jamil, S. (2021). From digital divide to digital inclusion: Challenges for wide-ranging digitalization in Pakistan. *Telecommunications Policy*, 45(8), 102206. <https://www.tbsnews.net/thoughts/e-waste-growing-menace-bangladesh-644198>
- Jamil, Y.(05 June, 2023) E-waste is a growing menace in Bangladesh, The Business Standard,
- Johnson, J. (2023) 'Quad leaders to meet on sidelines of G7, White House says, the japan times, <https://www.japantimes.co.jp/news/2023/05/19/national/politics-diplomacy/biden-quad-meeting-g7-sidelines/>
- Joint Press Release-7th Round of India-Bangladesh Joint Consultative Commission (2022) Ministry of External Affairs, Government of India, <https://www.mea.gov.in/press-releases.htm?dtl/35427/Joint+Press+Release+7th+Round+of+IndiaBangladesh+Joint+Consultative+Commission>
- Kabir, F. (2022) Bangladesh on the way to become a global freelancing hub, The Financial Express, <https://thefinancialexpress.com.bd/views/bangladesh-on-the-way-to-become-a-global-freelancing-hub-1650786303>
- Kabir, R. (2023) Road to Smart Bangladesh, The Daily Star, <https://www.thedailystar.net/business/economy/news/road-smart-bangladesh-3254121>
- Kamrul, H. (2018). Human security in cyberspace and climate change: A reflection from the European high North. *European Journal of Human Security*, (2), 55-74.
- Kastner, A.(2021) 7 views on how technology will shape geopolitics, World Economic Forum, <https://www.weforum.org/agenda/2021/04/seven-business-leaders-on-how-technology-will-shape-geopolitics/>
- Khan, K., Su, C. W., Umar, M., & Zhang, W. (2022). Geopolitics of Technology: A new battleground?. *Technological and Economic Development of Economy*, 28(2), 442-462.
- Kumar, R.(2021) Bangladesh's Digital Security Act, FRIEDRICH NAUMANN FOUNDATION, <https://www.freiheit.org/bangladesh/bangladeshs-digital-security-act>
- Lakshman, S. (2023) PM Modi's US visit yields many vital agreements, TheHindu, <https://www.thehindu.com/news/national/pm-modis-us-visit-yields-many-vital-agreements/article66998726.ece>
- Leese, B.(2023) The Cold War Computer Arms Race, Marine Corps University, <https://www.usmcu.edu/Outreach/Marine-Corps-University-Press/MCU-Journal/JAMS-vol-14-no-2/Cold-War-Computer-Arms-Race/>
- Malik, M. (2012). Technopolitics: how technology shapes relations among nations. *The Interface of Science, Technology & Security*, 12, 21-29.
- Mazumdar, DA and Alharahsheh, H.H. (2020), "Digital Bangladesh – vision 2021: what is the digital Bangladesh concept?", *South Asian Research Journal of Engineering and Technology*, Vol. 2 No. 1, doi: 10.36346/sarjet.2020.v02i01.002

- McBride, J. & Chatzky, A. (2019) Is 'Made in China 2025' a Threat to Global Trade?, COUNCIL on FOREIGN RELATIONS, <https://www.cfr.org/backgrounder/made-china-2025-threat-global-trade>
- Mordini, E. (2014). Considering the human implications of new and emerging technologies in the area of human security. *Science and Engineering Ethics*, 20(3), 617-638.
- Mozumder, T. (2019) Negative effect of 5G implementation on Environment, daily observer, <https://www.observerbd.com/news.php?id=209056>
- Network Readiness Index 2022 Bangladesh (2022) PORTULANS Institute, <https://networkreadinessindex.org/wp-content/uploads/reports/countries/bangladesh.pdf>
- NEWAGE (2023) Bangladesh placed 121st in internet speed ranking, <https://www.newagebd.net/article/192611/bangladesh-placed-121st-in-internet-speed-ranking>
- Parvin, R. A. & Tushar, A. H. (2023) Impact of cyberbullying on female students in Bangladesh, 2023, <https://www.observerbd.com/details.php?id=416075>
- Pandey, D. (2023) China leads global critical-tech race, India among top five: New Report, India Today, <https://www.indiatoday.in/world/story/china-leads-global-critical-tech-race-india-among-top-five-new-report-2342525-2023-03-04>
- Pany, PN (2022) G20 Presidency: India's Best Bet To Building Emerging Tech Narrative, NEWS18, <https://www.news18.com/business/g20-presidency-indias-best-bet-to-build-emerging-tech-narrative-6580345.html>
- Patil, S. & Mishra, V. (2022) Democracy, Technology, Observer Research Foundation, Geopolitics, <https://www.orfonline.org/expert-speak/democracy-technology-geopolitics/>
- Pippo, S. P. (2018) Space Technology and the Implementation of the 2030 Agenda, Nos. 3 & 4 Vol. LV, "New Technologies: Where To?", UN Chronicle, <https://www.un.org/en/chronicle/article/space-technology-and-implementation-2030-agenda>
- Press Information Bureau Government of India Cabinet (2017) Cabinet apprised of MoU between India and Bangladesh on cooperation in the peaceful uses of outer space, <https://pib.gov.in/newsite/PrintRelease.aspx?relid=162105>
- Study: 63.51% of women in Bangladesh in Bangladesh face online violence (2022) Dhaka Tribune, <https://www.dhakatribune.com/bangladesh/299185/study-63.51%25-of-women-in-bangladesh-face-online>
- Schmidt, E.(2023) Innovation Power, Why Technology Will Define the Future of Geopolitics, Foreign Affairs, <https://www.foreignaffairs.com/united-states/eric-schmidt-innovation-power-technology-geopolitics>
- Shadat, et al. (2020). Digital literacy of rural households in Bangladesh, BRAC Institute of Governance and Development Studies, BRAC University, https://bigd.bracu.ac.bd/wp-content/uploads/2020/10/Working-Paper_Digital-Literacy-of-Rural-Households-in-Bangladesh.pdf
- Sharmin,F.(2022) Bangladesh in the Outer-Space: Space Diplomacy, Techno-nationalism and Economic Strength, Journal of Bangladesh and Global Affairs, Volume 01, Number 01, 2022 <https://doi.org/10.55875/jbga.bd.may22.010>;<https://www.cbgbad.org/wp-content/uploads/2022/07/9.-Farjana-Sharmin.pdf>
- Sharmin, F. (2022). Bangladesh in the Outer-space: Space Diplomacy, Techno-nationalism, and Economic Strength. *Journal of Bangladesh and Global Affairs*, 1(01).

- Sheokand, K., & Gupta, N. (2017). Digital India programme and impact of digitalization on Indian economy. *Indian Journal of Economics and Development*, 5(5), 1-13.
- Shesheir , M.H. & Ahmed, F. (23 June ,2023) Edtech is only beginning in Bangladesh, Dhaka Tribune, <https://www.dhakatribune.com/opinion/op-ed/314120/edtech-is-only-beginning-in-bangladesh>
- Subraelu et al. (2022). Global Warming Climate Change and Sea Level Rise: Impact on Land Use Land Cover Features along UAE coast through Remote Sensing and GIS. *J Ecosys Ecograph*, 12(329), 2.
- Sunilkumar, S.R. (2023) Chinese apps were banned because...Foreign Secretary explains, *HindustanTimes*, <https://www.hindustantimes.com/india-news/chinese-apps-were-banned-because-foreign-secretary-explains-101677953479895.html>
- The Daily Star (2022) Bangladesh has 7th largest data centre in the world: Here's how it can earn foreign currency, <https://www.thedailystar.net/tech-startup/news/bangladesh-has-the-worlds-7th-largest-data-centre-heres-how-it-can-earn-foreign-currency-2928846>
- The Daily Star (2022) Bangladesh offers 12th cheapest mobile data in the world, <https://www.thedailystar.net/tech-startup/news/bangladesh-ranks-12th-worldwide-terms-receiving-data-low-prices-3156891>
- The Government of the People's Republic of Bangladesh, through BDCCL and the ICT Division, Selects Oracle Cloud Infrastructure Dedicated Region Cloud@Customer to Provide Sovereign-Hosted Cloud Services to Government (2021) Press Release, <https://www.oracle.com/bd/news/announcement/bdccl-gobd-selects-oracle-drcc-2021-12-20/>
- United Nations, E-Government Development Index (EGDI) (2022) UN E-Government Knowledgebase, <https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/14-Bangladesh>
- Wahid-Uz-Zaman, M. G. M. (2019). Bracing artificial intelligence for socio-economic development: Opportunities, implications and challenges for Bangladesh. *Ndc E-Journal*, 18(1), 1-22.
- Wilson III, E. J. (2008). Hard power, soft power, smart power. *The annals of the American Academy of Political and Social Science*, 616(1), 110-124.
- Wong, P. N. (2021). *Techno-Geopolitics: US-China Tech War and the practice of digital statecraft*. Taylor & Francis.
- George, et.al. (2022). Digital solutions can reduce global emissions up to 20%, *World Economic Forum* <https://www.weforum.org/agenda/2022/05/how-digital-solutions-can-reduce-global-emissions/>
- Yeli, H. (2017). A three-perspective theory of cyber sovereignty. *Prism*, 7(2), 108-115.



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