The Implementation of E-Governance Initiatives Plays a Crucial Role in Ensuring the Realization of a Digital Bangladesh

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Abstract. *The ideas of e-governance and Digital Bangladesh are intricately interconnected. E-governance pertains to the utilization of information and communication technology (ICT) with the aim of enhancing the provision of government services to the general populace. Digital Bangladesh, on the other hand, is a vision for a technologically advanced society where ICT is used to foster a knowledge-based environment and improve the lives of all citizens. The implementation of e-governance initiatives plays a crucial role in ensuring the realization of a Digital Bangladesh. By providing citizens with convenient and efficient access to government services online, e-governance can help to reduce corruption, improve transparency, and promote accountability. It can also help to bridge the digital divide and make government services more accessible to all citizens, regardless of their location or socioeconomic status. In order to realize Digital Bangladesh, the government of Bangladesh is dedicated to e-governance. A number of e-governance initiatives have already been implemented, such as the National Portal, the Digital Center Network, and the One Stop Service (OSS) Centers. These initiatives have made it easier for citizens to access a wide range of government services online, such as paying taxes, applying for passports, and registering businesses. Nevertheless, certain obstacles must be confronted to effectively achieve the goal of Digital Bangladesh. One challenge is the lack of digital literacy among a large section of the population. Another challenge is the need to improve the reliability and affordability of internet access. Furthermore, it is essential to devise and execute e-governance initiatives that are customized to cater to the distinct requirements of various segments of the population, including those experiencing poverty, the elderly, and those with disabilities. Despite the challenges, the government of Bangladesh is making significant progress in the implementation of e-governance and the realization of Digital Bangladesh. The adoption and execution of e-governance projects are significantly benefiting both individuals and companies across the nation. The primary objective of this study is to examine the many programs and efforts implemented by the Government of Bangladesh in its pursuit of establishing Digital Bangladesh. To conduct a comprehensive and thorough study, the following goals have been identified: To get information about the initiatives. To analyze the roles of the programs.*

Keywords: *E-Governance, Digital Bangladesh, ICT, Technology, Government Services*

INTRODUCTION

E-Governance pertains to the governmental implementation of Information and Communication Technology (ICT) in order to facilitate administrative functions. (Editor Mina Aryal, 2018). The use of digital platforms is employed to enhance and optimize service delivery. It is considered highly esteemed for a nation to be able to provide its services to its citizens via

digital means. E-governance, often known as electronic governance, refers to the practice of government agencies using ICT in a wide variety of contexts. Its primary objective is to facilitate the dissemination of information and provision of electronic services to the general populace (Rahman, 2016).

E-Government can be broadly categorized into four basic classifications, with a primary focus on key stakeholders such as individuals, business entities, government personnel, government agencies, and other governments. The dissemination of essential information from the government to its citizens, known as Government to Citizen (G2C), encompasses various activities such as facilitating the completion of forms for important documents like passports and income tax filings, issuing licenses and certificates such as birth certificates and driving licenses, as well as assisting citizens in accessing fundamental services such as education, healthcare, entertainment, and employment. The term "Government to Business" (G2B) pertains to the provision of services between the governmental entities and the corporate sector. This encompasses activities such as the development and communication of pertinent laws and policies, the issuance of required licenses and permits, and the payment of taxes and tariffs, among others. The term "Government to Employee (G2E) communication" pertains to the transmission of information between a governing body and its workforce. This form of communication encompasses various aspects, such as the submission of leave applications, notifications regarding job promotions, dissemination of salary reports, and facilitation of staff training programs. The concept of Government to Government (G2G) entails the sharing of information between various government agencies at the local level, as well as between different governments on a worldwide scale (Ahmad, 2021).

E-Governance pertains to the utilization of technological tools by public administration systems in order to provide services to the populace of a certain country. However, the notion of Digital Bangladesh entails the creation of a society that is technologically sophisticated and places a high emphasis on the use of ICT (information and communication technology) to cultivate an environment centered on knowledge. In this envisioned society, information is readily accessible via online platforms, and all administrative functions of the government, semi-government, and private sectors are efficiently carried out using modern technology. Bangladesh, a nation characterized by high population density, has set out an ambitious goal of achieving digital transformation by the year 2021 under the previous government established in 2009. The inclusion of this development plan in the electoral platform of the present administration of Bangladesh before to the ninth parliamentary election in 2008 was noted. The aforementioned approach is often referred to as "Digital Bangladesh - Vision 2021." This statement attracted the attention of whole nations, particularly their youth populations, resulting in the governing party coalition securing a significant victory and gaining power over the country. The main purpose of this article is to provide a comprehensive analysis and elucidation of the concept and language associated with the idea of "Digital Bangladesh." This article will elucidate the fundamental parts and essential outcomes associated with the concept of "Digital Bangladesh". The government is now prioritizing the implementation of E-Governance via several programs aimed at establishing a digital Bangladesh, while encountering many obstacles

METHODS

Justification of this Research

This study aims to investigate the actions implemented by the Government of Bangladesh in order to actualize the vision of Digital Bangladesh. Bangladesh, being a developing nation, has a substantial population size. Bangladesh is passing a critical time but it is also going towards with implementation of technologic al advancement which helps to make digital Bangladesh.

Research Design

Employing a qualitative research methodology, this study draws upon a comprehensive collection of data gathered from various online sources, including research articles, newspapers,

reports, government websites, and books. This approach ensures the incorporation of diverse perspectives and a thorough understanding of the subject matter.

Research Objective

The primary objective of this study is to ascertain programs and initiatives taken by the Government of Bangladesh to build Digital Bangladesh. To facilitate a more comprehensive examination two are some objectives; (1) In order to get information pertaining to the various efforts; (2) In order to examine the functions of the programs

Research Questions

What is the role of the initiatives taken by government to ensure Digital Bangladesh?

Ethical Consideration

Researchers are inextricably bound to public accountability. All ethical standards were followed during this investigation. In most cases, conversations on ethics start with ideas of social normativity about ethics. When collecting information and doing research, it is important to uphold ethical standards. This study does not include copying and pasting, plagiarism, or the use of unneeded data. The research will not violate any participants' human rights, and none of the participants will intentionally provide inaccurate information. The data that were obtained are reliable and have been appropriately referenced.

RESULTS AND DISCUSSION

Present Status

Label for the Nation	Putting nations in order	Global position out of a possible 193
Sri Lanka	1st	74
Maldives	2nd	94
India	3rd	118
Bhutan	4th	143
Bangladesh	5th	148
Pakistan	6th	158
Nepal	7th	165
Afghanistan	8th	173

Source: (Rahman, 2019)

The method of implementation is neither satisfactory nor apparent. Several areas are still not completely operational in the digitalized system. It is impossible to identify a single government entity that is entirely controlled by a computerized system. As a result, Bangladesh's e-governance status is so bad on a global and regional scale Bangladesh is ranked fifth among the countries. South Asia has eight nations. Sri Lanka currently holds the First place goes to the Maldives, followed by India and Bhutan in third and fourth place, respectively.

Online Birth Registration Information System

To better prepare and provide for the needs of its citizens, Bangladesh's government introduced an online version of the Birth Registration information System (BRIS) in 2010. At the moment, there are a total of 5029 registration offices working throughout the nation. This number is broken down as follows: There are a total of 4571 union councils, 319 municipalities, 15 cantonment boards, and 124 zonal offices that exist inside the administrative structure of 11 city corporations. Furthermore, there are 53 registrar offices affiliated with Bangladesh missions situated in 42 other countries, contributing to a total of 5082 register offices that possess the capability to conduct online birth and death registration (Ahmad, 2021).

Agriculture in Bangladesh

Farmers may now video contact agricultural inspectors to solve crop issues. Thus, farmers can quickly resolve issues. Our nation also makes several applications that farmers use to analyze and solve agricultural difficulties. Traditional farmers are becoming digitally aware by adopting such technology. Internet-based technologies can improve people's conventional life and jobs. The government should be applauded for opening the way for digital agriculture for the neglected and undereducated farmer population. In 2016, the ministry launched many A2I-based projects to digitalize agriculture. The government has established many digital projects to alleviate farmers' workloads. Technology-based agricultural programs have been introduced. The government has other projects in the works. These policies have helped farmers and agriculture, according to experts. Farmers may get guidance, information, and services via the "Krishi Batayon" app. This is a central farmer and agricultural database. The app has 82 lakh farmer data. The government is adding 26 million farmers to the app. This plan continues. The database contains names, locations, and phone numbers of fertilizer and pesticide retailers across the nation. The app has 5500 "haats and bazaars" data. The software lets farmers discover nearby markets and fairs. The app shows the country's agricultural land distribution, crop production regions, farmers' names, and phone numbers. The names, phone numbers, and affiliations of agricultural organizations in each district and upazila are also mentioned. Also included are government subsidy dates and amounts. New crop diseases are also covered. Government-manufactured agriculture goods, manufacturing data, and other relevant information are also presented. Farmers' phone numbers and current training are also included (Mostafiz, 2022).

The government has plans to advance technological development in several domains such as agricultural land mapping, weather and agriculture forecasts, crop insurance, and related areas in the foreseeable future. If they can be put into practice, it will be a huge step forward for the growth of our agriculture.

Ministry of science & Communication Technology

To encourage positive social development via the use of scientific and technical knowledge, the government has established a Ministry of Science and Technology. It also seeks to strike a balance between economic growth and protecting the environment. For the sake of maintaining national stability and economic growth, this organization has been working nonstop to implement cutting-edge solutions. On January 31, 2002, the Bangladesh Telecommunication Act 2001 came into effect, giving rise to the independent, statutory Regulatory Commission known as the Bangladesh Telecommunication Regulatory Commission (BTRC). The Telecommunications Act gives the Commission several responsibilities. The most important ones are providing citizens with access to a wide range of telecommunications services throughout the nation and developing and administering these facilities. Customers are charged fees, services are guaranteed, and individual rights are safeguarded as part of BTRC's additional obligations. The establishment of the Bangladesh Communications Regulatory Commission (BTRC) on January 31, 2002, was driven by the objective of facilitating rapid and consistent socioeconomic progress and ensuring reliable communications services. This regulatory body was established in accordance with the provisions outlined in the Bangladesh communications Regulatory Act 2001. Yet in 2010, lawmakers once again passed the Telecommunications Act (Corrected) (*Bangladesh Telecommunication Regulatory Commission (BTRC)*, n.d.).

State Policy & Action

On February 2, 2015, the Cabinet granted approval to the draft of Bangladesh's National Information and Communication Technology (ICT) Policy, 2015. The primary objective of the strategy is to enhance the quality of government service provision by promoting greater use and accessibility of information and communication technologies (ICTs). The strategy's objective encompasses many different areas, such as ensuring the development of qualified human resources and delivering public service through public-private partnerships. Its ultimate goal is to help Bangladesh advance to the status of middle-income nation by the year 2021 and

developed nation by the year 2041. This policy encompasses a comprehensive framework that includes ten explicitly stated aims, fifty-six overarching themes, and thirty-six detailed objectives. These objectives are to be handled by short-term, medium-term, and long-term strategies. These three schedules will be implemented by various departments between 2016 and 2018, and then between 2020 and 2021 (Josh, 2015).

Bangladesh national Portal

The National Information Delivery Framework (www.bangladesh.gov.bd) is a unique project/service developed funded by the United Nations Development Programme and led by the Cabinet Department and the Department of Information and Communication Technology. The National Information Management system is an e-architecture that has a user- and community-friendly structure. The program seeks, among other things, to standardize the websites of all government agencies in order to cut down on the resources needed to provide e-services to the public. The National Information Delivery Framework is also a tool for making government data and services more accessible. Information and services from all of the country's 52 thousand government agencies are centralized at www.bangladesh.gov.bd. This site has been designed with a set of aims and objectives in mind to make it more current and content-rich.

Emergency Call to 999

People all around the world have praised this excellent service for how helpful it has been to them. Before this line was established, customers had to memorize the direct-dial numbers for each service area in case of an emergency. As a result, this line quickly gained a lot of popularity.

Before the Information and Communications Technology division in Bangladesh started its pilot project in December 2017, such a notion was unheard of in the country. The Bangladesh government has introduced a new emergency number, "999," in coordination with the Bangladesh Police, the Bangladesh Fire Service, the Civil Defense Headquarters, and the Department of Health. Here we have our very own national emergency hotline, ready to assist us at any moment. The service's finest feature is that it doesn't cost anything to use. If you or someone you know is ever in immediate danger or requires urgent medical attention, you may dial this number even if you have no minutes left on your phone. You may call the 999 service, and professional operators will help you get in touch with the police or an ambulance, whatever you need. This is not a regular service, so you'll need to know when to contact Individuals using emergency contact numbers worldwide concur that it is essential to always reach out to these services, irrespective of whether the circumstances really meet the criteria of an emergency. ("When to Dial 999," 2019).

When to Call	Do not call 99
Medical emergencies	For information
Heart attack or stroke	Power cuts known as "load-shedding"
House fire	In order to have a wall crack repaired
Domestic violence	When water pipes break in your home,
Burglary or theft in progress	A trip to the doctor's office
Injuries from a car crash that might become fatal	For paying tickets
Fraudulent behavior	For your pet
Everything else that seems like an urgent situation	As a prank

Smart NID Card in Bangladesh

The National Identity Card (NID) or Voter ID Card pertains to the official photographic identification card issued by the Election Commission (EC) of Bangladesh, which is obtained by eligible voters. The government of Bangladesh has issued Smart NID cards to all legal adults as of October 2016. An integrated circuit is built into the chip of this plastic card. Application procedures for the Smart NID Card in Bangladesh have been digitized by the government. One's

smart NID card is a crucial piece of identification in the country of Bangladesh. It's needed for things like getting a driver's license, registering a car, getting a passport, buying or selling property, establishing a bank account, getting a loan, getting a teen certificate or mobile SIM card, or receiving government benefits. Therefore, every citizen of Bangladesh must have their own NID identification. (*Smart NID Card in Bangladesh: Online Application Process, Documents Needed, Fees*, n.d.).

Union digital Center

Many obstacles stand in the way of Bangladesh delivering high-quality public services. The challenges faced by people in accessing government data and services include the reliance on manual processes, the reluctance to change within the civil service, and a prevailing lack of transparency. When service delivery is not clear, rent-seeking is more likely to occur. E-governance, often known as digitization, is a set of practices that helps governments at all levels become more responsible, transparent, and inclusive in their operations, including the provision of public services. Therefore, the implementation of digital governance has become an official policy goal.

The government established digital centers at unions, upazillas, and local enterprises to serve as one-stop-shops for residents in need of electronic services. In November 2009, a pilot project called Union Information and Service Center was launched, and thirty digital union centers were built. Union Digital Centers (UDCs) were established and eventually grew to serve about 4500 unions throughout the United States. An estimated 45 million people used UDCs between 2013 and 2015, according to data collected in 2016. These UDCs aim to improve the efficiency, effectiveness, and openness of union parishad activities, as well as to bring a variety of government, commercial, and information services to citizens' doorsteps, making it easier and cheaper to access these services without having to travel great distances (Rahman et al., 2020).
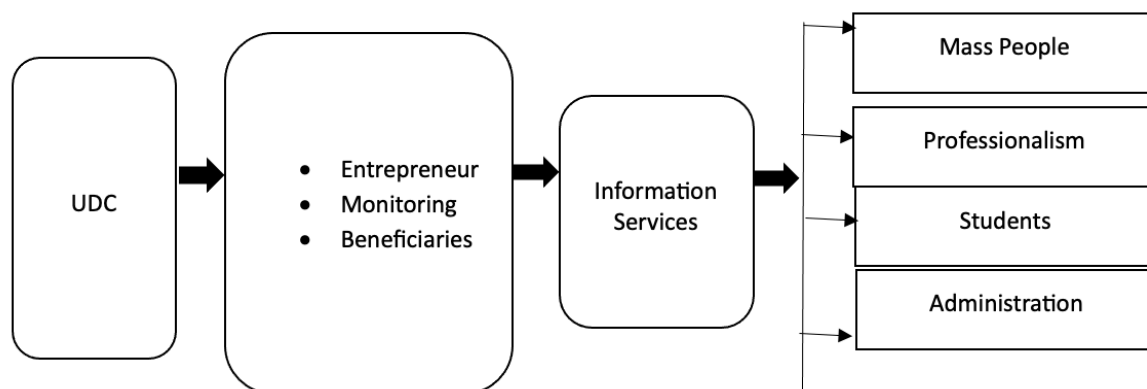

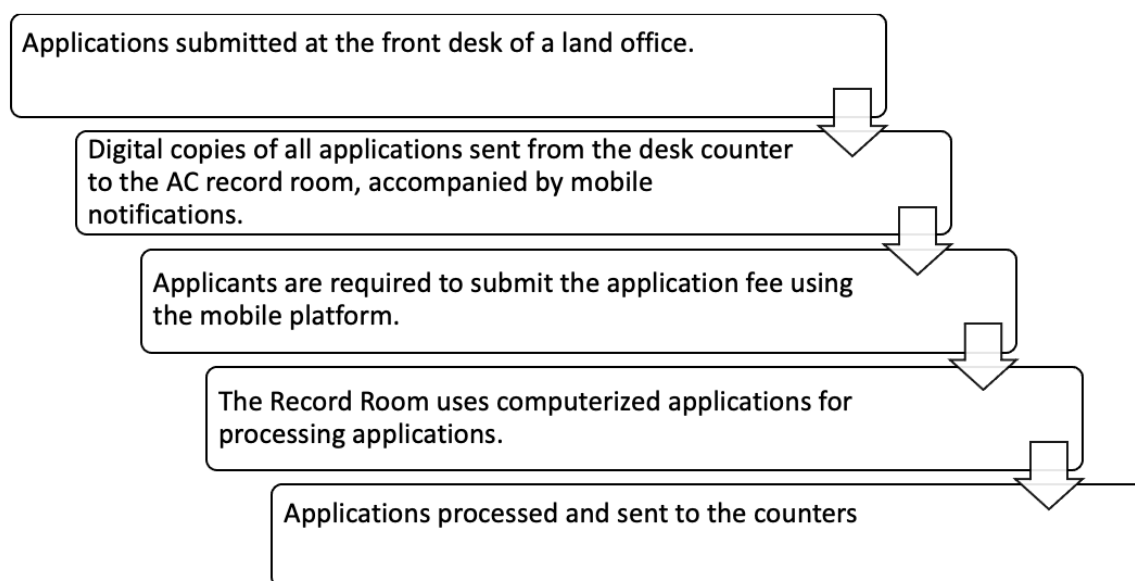Figure 1. Work Flow and Information Service of Delivery.

Table 1. service-Wise Reduction in TCV (a2i, 2022)

Services	Before UDC			After UDC		
	Time (in HRS)	Cost (USD)	Visit	Time (in HRS)	Cost (USD)	Visit
Birth Registration	211.52	1.6	2.19	7.58	0.9	1.23
Citizen Certificate	24.9	0.7	1.71	2.97	0.5	1.07
Exam Registration	6.27	1.2	1.07	2.30	0.2	1.03
Death Registration	39.39	1.9	2.5	4.52	0.6	1.09
Photocopy	5.55	0.9	1.14	0.49	0.2	1.01
Computer Compose	16.84	1.5	1.44	0.63	0.5	1.02
Photography	39.7	1.6	1.82	1.36	0.4	1.04
Internet Browsing	3.02	1.7	1.28	0.53	0.4	1.02

Electricity Bill Payment	4.31	0.9	1.21	0.343	0.2	1
Job Search	12.47	2.6	1.5	0.75	0.7	1

The alterations in land records in Bangladesh:

In the context of land transactions in Bangladesh, it is essential to update the official land record and issue a new Record of Right whenever there is a transfer of ownership, whether it by sale or inheritance. The process of land record modifications, also known as mutations, is conducted by civil officers holding the status of Assistant Commissioner Land (AC Land). In the organizational structure, it is observed that each Administrative Circle (AC) Land assumes responsibility for the supervision and management of a distinct sub-district, commonly referred to as an Upazila, within the administrative framework of the land office. The government has mandated that land record changes take no more than 45 working days, but in practice, delays are common. The Land Reforms Board of Bangladesh and a2i, a government agency tasked with fulfilling the vision of "Digital Bangladesh," are currently implementing an e-governance system known as the "eMutation system" throughout Bangladesh. The objective is to enhance the efficiency of land record modification procedures for both applicants and the public workers responsible for their processing. The e-governance technology furthermore has the advantage of generating administrative data pertaining to changes in property records. Nevertheless, before to the commencement of our investigation, the aforementioned data had not been provided in a manner conducive to the assessment of the efficacy of individual AC Lands. (*Using E-governance Data to Improve Public Service Delivery: Evidence From Land Record Changes in Bangladesh*, 2020).

Applications submitted at the front desk of a land office.

Digital copies of all applications sent from the desk counter to the AC record room, accompanied by mobile notifications.

Applicants are required to submit the application fee using the mobile platform.

The Record Room uses computerized applications for processing applications.

Applications processed and sent to the counters

Challenges of Implementing E-governance in Bangladesh

Both technical and financial hurdles have slowed Bangladesh's progress toward fully embracing electronic government. Given that the government of Bangladesh has never attempted anything like this before, several obstacles have been found.

Uninterruptable inter service

In order to realize Bangladesh's potential as a digital nation, uninterrupted internet access was required. On the other hand, the administration of Bangladesh is still not close enough. Despite its best efforts, the government has been unable to establish stable inter-service ties. Some citizens are thus denied access to essential government programs. Concurrently, the formal operations of the government are not functioning as they should.

Limited internet speed

According to a recent study on worldwide mobile and fixed broadband internet performance released by speedtest.net, Bangladesh is positioned at the 120th rank out of 122 nations in terms of mobile internet speed. With a score of 78th out of 133 nations, Bangladesh has a performance that is much greater in comparison in terms of internet speed. Furthermore, it is worth noting that the mean download speed provided by mobile internet services in Bangladesh is recorded at 5.17 megabits per second, but broadband connections give a higher average speed of 15.91 megabits per second. Norway's mobile internet exhibits an average download speed of 52.59 Mbps, whereas Singapore's fixed broadband internet has an average download speed of 154.38 Mbps. Norway has the fastest mobile internet speed, while Singapore has the highest fixed broadband internet speed("Bangladesh Ranked 120th in Mobile Internet Speed," 2017).

According to Ookla's released data, these are the download speeds Bangladeshi internet consumers may have anticipated in the beginning of 2022; (1) Using a cellular network, the average mobile internet connection speed is 10.42 Mbps; (2) The median download speed for a home connection is 30.16 Mbps.

According to Ookla's findings, in the year leading up to the beginning of 2022, the median mobile internet connection speed in Bangladesh rose by 3.19 Mbps (+44.1%). Ookla's statistics, however, reveal that within the same time period, fixed internet speeds in Bangladesh climbed by 8.92 Mbps (+42.0 percent) (Kemp, 2022).

Very high cost of internet service

Fast Internet is essential for the growth of the digital society. On the other hand, the truth couldn't be farther from that. Internet is also incredibly costly. The mobile internet is quite pricey and has little capacity. The Internet is predicted to have minimal prices and be simple to use. However, there is a universal connection cost for broadband users. This makes Internet access challenging for persons with little financial resources and for students. More importantly, no one makes a universally accepted mobile intern package. The price of 10 Mbps internet is now set between Tk800 and Tk1,000, while the price of 20 Mbps is set between Tk1,100 and Tk1,200 ("Broadband Internet Price Set at Tk500 a Month," 2021).

Lack of electricity supply and computer accessories

With the goal of transforming the nation and guaranteeing the provision of electronic services. The availability of power is crucial. Without a reliable source of electricity, digital Bangladesh would remain a pipe dream. Despite the rise in power generation and storage capacity. Despite government initiatives, the problem persists. Nonetheless, load shedding remains a problem for those living in Bangladesh. The administration must adopt several measures to end load shedding for good. However, this problem can't be solved without more money being invested and without discovering and developing new sustainable green energy sources. Contrarily, the price of computer peripherals has been falling, making them more accessible to consumers and so increasing the number of people who use computers and the web.

Lack of Technological Expert

To install and make changes to society's information technology, a huge number of IT professionals were required. In spite of the fact that a huge number of engineering institutions have been established and that these universities create a significant number of human experts, the current supply is not enough. At the same time, colleges are responsible for producing IT engineers that are capable and skilled. Still, we are a long way behind other countries in terms of the export of information and communications technology facilities, while countries in our region, such as India, and other Asian countries, such as the Philippines, make a tidy profit from outsourcing. The government is essential to take the necessary actions in this sector in order to guarantee that a sizeable number of computer professionals will be able to find employment in it.

CONCLUSION

Policy papers and research reports shed light on the importance of e-Government as a tool to improve administrative and governance systems in developing countries. Bangladesh is highly motivated to exploit the potential opportunity. Through a comprehensive examination of pertinent policies and legislation, coupled with an analysis of diverse e-Government programs, this research has determined that the nation has made significant advancements, particularly in the realm of public service delivery. With the goal of making government services more open and accessible, Bangladesh is aggressively implementing e-government programs in a wide range of fields, such as learning, farming, poverty alleviation, well-being, business, and commerce. However, there exist some challenges such as inadequate infrastructure and the need for effective change management that must be addressed before achieving comprehensive benefits. The notion of "Digital Bangladesh" encompasses the utilization of not only information and communication technology (ICT), but also sophisticated technologies like Cloud Computing, across all sectors of the nation by its population. The objective of this research is to provide a thorough comprehension of the possible influence of Information and Communication Technology (ICT) on the fundamental elements and consequences linked to the concept of "Digital Bangladesh".

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