

E-Government Services for Sustainable Development: The Challenges and Strategies of Implementing E-Government in Bangladesh

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Abstract: The nature of good governance in a wide range of government operations lies in the successful implementation of e-governance. In order to make public works open and efficient, to increase government efficiency, accountability and boost service delivery and public participation in all aspects of government operations, e-Governance is mandatory. The Bangladesh E-Government Index is very poor compared with the SAARC countries. Bangladesh has many barriers to introducing the system for E-Government in Bangladesh. In today's digital and ICT-based world, it is hard to have good governance without e-government. The goal of this study is to examine the performance of the implementation of the Bangladesh e-government, recognize some of the challenges and suggest some of the likely ways of overcoming them. The difficulties arise from a change of government strategy with a change of government, a lack of sufficient skilled, well-trained human resources, adequate budgets for such a capital-intensive project to be implemented, etc. The situation can, however, be altered by taking the necessary steps, such as political consensus, the creation of human capital, the penetration of ICT and a proper long-term plan to implement e-government in Bangladesh.

Keywords: E-Government, ICT Infrastructure, Online Service Index, e-Participation Index, Public Service, Sustainable Development, Bangladesh.

I. INTRODUCTION

In order to create a citizen-centric, more open and more responsive government system, governments around the world have begun to resort to newly discovered information and communication technology (ICT). Accessible ICT infrastructural facilities and the ability of the government to adopt e-governance have already succeeded in e-government programs around the developed world (Robins & Burn, 2001). Although steps have been taken by some developing countries in this context, the benchmarks for reforming their system of governance and related effects are often short-lived. In this regard, a number of challenges remain that need to be identified and addressed by developed countries in the implementation of e-government goals. With the widespread use of ICT, the difference between developed and developing countries is rising, and the divide is increasing day by day. In developed countries, the rate of growth is much greater than in developing countries. Through developing IT infrastructure growth, policy reform, change management, the reshaping of business structures, etc., ICT is used by developing countries around the world to achieve maximum value. As a result, developing countries are unable to keep pace with developed countries, nor can they sustain a steady gap. But in order to alter their age and ICT lifestyles, it is time for developing countries to turn around (Hassan, M. R, 2013). Countries without improved resource levels, such as Bangladesh, can expect social and economic growth to accelerate if they are able to develop awareness which, combined with adequate ICT-related technologies, will allow knowledge-based economies to be implemented effectively. It is expected that only the use of ICT in the functioning of the government can bring about a significant transformation in this area.

Electronic-Government refers to the use of information and communication technology (ICT) by governments over the internet for people, the private sector or other government organizations to facilitate participation of citizens, improve service delivery, enhance accountability, increase transparency or improve government efficiency (Krishnan et al., 2013). E-government relates to the use of ICTs by governments to operate more efficiently, exchange information and provide the public with better services. In essence, it is more about the government reform process and the associated gains than about the use of particular technical technologies or facilities. A well-planned e-government approach will allow strides in creating a government that is more effective, accountable and transparent. E-government applications will restore public faith in government, stimulate economic and sustainable development by enhancing business interfaces, and enable people to engage in the advancement of effective governance. On the other hand corruption is the abuse of public power, office or authority for private gain through bribery, extortion, influence peddling, nepotism, fraud, speed money, or embezzlement. The lack of institutions and the ability to regulate society by means of a system of social, judicial, political and economic controls and balances is primarily a problem of governance (UNDP, 2006). The objective of e-governance is to create a partnership between government officials and people, by making the government available to any part of the country or even the world, providing greater access to government information and services; promoting citizen engagement in government affairs by enabling individuals to interact more effectively with government officials, such as by requesting government service and submitting the required documents through the website; improving government accountability by making their acts more transparent, thereby reducing opportunities for corruption; and facilitating development goals by providing knowledge, opportunities and communication capabilities to industry, rural and historically undeserved communities (Asaduzzaman et. al. 2011).

E-government implementation presents new possibilities that have reinvented the conventional operation of governments and introduced new aspects to the functionality that helps to increase productivity (Imran & Gregor 2010). Research shows that e-government has the potential to offer a strategic advantage to the nation by creating skills that are difficult to replicate. Citizens and businesses also need more efficient public sector services in developing nations, as in developed countries. While there are many benefits of e-government adoption in developed countries, it is still at the stage of childhood and several factors such as low national income, shortage of human resources and high economic vulnerability hinder the rate of e-government adoption (Rahman et. al., 2014). Several developing nations have recently undertaken e-government initiatives. Studies suggest that efforts by the government, political leaders, bureaucrats and private entrepreneurs to encourage the growth of e-government need to be organized (Bonham et al. 2001). In order to achieve substantial progress in adopting e-government, the Government of Bangladesh has been formulating policies. In 2002, government of Bangladesh formulated its first comprehensive ICT Policy Plan called ICT Policy 2002.

By 2006, its aim was to make Bangladesh a society driven by ICT. However, it was noticed at the end of the planning process that the outcomes of the 2002 project did not satisfy the expectations (National ICT Roadmap Action Plan, 2008). The government subsequently implemented a revised strategy in 2009 to extend and maximize the use of ICT to create an open, sensitive and accountable government (Star Business Report, 2013). However, government implementation committees are still facing difficulties when assessing the basic enforcement elements of ICT. This study seeks to explore, taking into account this context, the key factors associated with the introduction of e-government in Bangladesh. In the context of Bangladesh, numerous studies have been carried out, but most studies have used either case studies or qualitative approaches. To examine the crucial factors in the implementation of e-government, this study uses a multi-criteria approach to decision-making. Consideration of the views and opinions of each stakeholder is essential for the effective implementation of ICT in Bangladesh, as many stakeholders are involved. The findings of this study should also be recognized in order to develop ICT implementation strategies, and the method of analysis is appropriate and accurate.

II. PROBLEM STATEMENT

E-governance is necessary in order to make government work transparent and efficient, increase government productivity, transparency and improve service delivery and public engagement in all aspects of government operations. Compared to the SAARC countries, the Bangladesh e-Government Index is very weak. The introduction of the e-government system by Bangladesh faces several challenges. The key constraints and challenges of e-government implementation in Bangladesh are the online service index, the e-participation index, weak ICT infrastructure, inadequate human resources, lack of confidence, the telecommunications infrastructure segment and lack of knowledge. Significant opportunities may be created to turn public administration into a sustainable development tool for Bangladesh. E-government is often referred to in public administration as the use and application of ICT to streamline and automate workflows and processes, manage data and information effectively, reinforce the provision of public services, and enhance communication networks for the participation and empowerment of citizens.

III. OBJECTIVES OF THE STUDY

The aim of government-to-citizen (G2C) e-governance is to provide people with a range of ICT services in an effective and economical way and to improve the relationship between government and technology-using citizens. The aim of this study is to address the challenges and strategies of implementing e-government in Bangladesh with regard to e-government services for economic and sustainable growth. The study aims to achieve the following goals in order to visualize e-governance and e-government in the context of Bangladesh.

- To comprehend e-governance and e-government in context of Bangladesh.
- To evaluate challenges of implementing e-governance in Bangladesh.
- To recognize probable challenges and ways to overcome those.

IV. LITERATURE RIEW

A. Current Status of E-government in Bangladesh

The ICT Policy 2002 aimed at building an ICT-driven nation comprising of knowledge based society by the year 2006 (MOSICT, 2002). However, Bangladesh has failed to achieve its ICT target, as set out in the ICT Strategy. In the e-government sector, accomplishments have fallen far short of expectations. To some extent, using Gartner's Four Phases E-Government Model, the progression of e-government in Bangladesh can be evaluated.

In 2000, Gartner Group Inc. developed a framework to identify four e-government stages in order to evaluate the progress of e-government and to recognize strategies and other factors contributing to a country's success in each phase (see Figure 1). The model proposed the existence of the web presence, communications, transactions, and transformation of the four main phases of the development of e-government. At the moment, Bangladesh appears to be in the second stage of e-government. However, the government's response to the e-government is lukewarm and without much enthusiasm. There is hardly any government delivery of electronic services, and a joint government is still a far-reaching goal in Bangladesh. In the absence of an effective IT Act, several concerns, including privacy and security, remain unresolved, making it much harder for Bangladesh to join the third stage of e-governance. Although most government organizations in Bangladesh have established their web presence with information about their respective organizations and their activities, the level of e-service delivery remains poor.

Source: Adapted from Baum & Maio (2000)

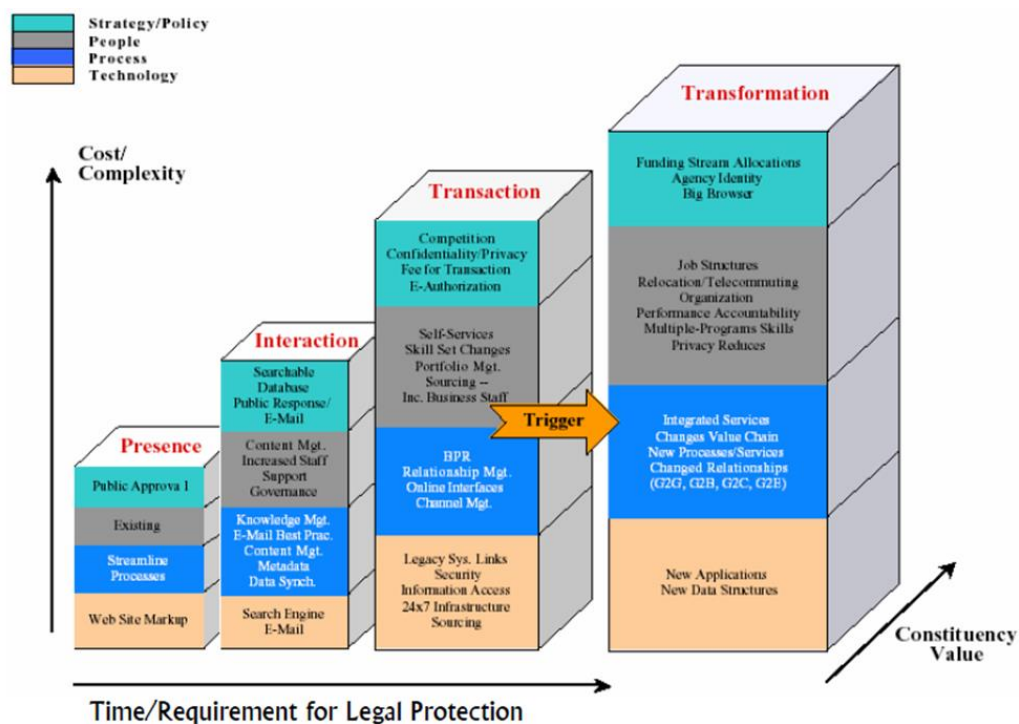


Fig.1. Gartner's Four Phases of E-Government Model

As proposed by Gartner's Model (Figure 1), the third and fourth phases are significantly more complex and much more difficult to implement. Since the stages of cost and complexity are incremental, the risks and vulnerabilities in relation to new methods and technology are defined with the higher phases. Innovative e-government processes along with complex ICT systems could be threatened by the increasingly sophisticated techniques of web piracy and hacking. An adequate degree of legal protection is considered crucial to mitigate such risks. A primary requirement for shifting to a new phase of e-government that is more constituent-driven and comprehensive is the legislation of a sound IT Act resolving all such vulnerabilities (As-Saber et. al., 2006).

B. E-Government Implementation Viewpoint in Bangladesh

In embracing e-governance and making e-services readily accessible and affordable to their citizens, many countries have made significant progress. As per the 2012 United Nations E-Government Survey, many countries have undertaken e-government initiatives and applications for people in information and communication technology (ICT) to further improve public sector efficiencies and modernize governance processes to promote sustainable development and achieve the millennium development goals (Whitmore, A., 2012). Particular attention among e-government officials has been paid to emerging technology strategies as a way of revitalizing lagging economic and social sectors. The survey was performed in all the member states of the world. However, for the purposes of the present report, only associated countries (SAARC countries) have been discussed here.

TABLE I: E-government Development Index and Ranking.

Country	E Gov. development index		Percentage Change in the index	World e-Gov. development ranking		
	2012	2010		2012	2010	Change
Maldives	0.4994	0.4392	13.71%	95	92	-3
Sri Lanka	0.4357	0.3995	9.06%	115	111	-4
India	0.3829	0.3567	7.35%	125	119	-6
Bangladesh	0.2991	0.3028	-1.22%	150	134	-16
Bhutan	0.2942	0.2598	13.24%	152	152	0
Pakistan	0.2823	0.2755	2.47%	156	146	-10
Nepal	0.2664	0.2568	3.74%	164	153	-11
Afghanistan	0.1701	0.2098	-18.92%	184	168	-16
World Average	0.4882	0.4406	10.80%			
Regional average	0.328763	0.312513	5.20%			

Source: United Nations, E-Government Survey 2012

The e-government development index of the SAARC region along with world and regional average is shown in the following bar chart.

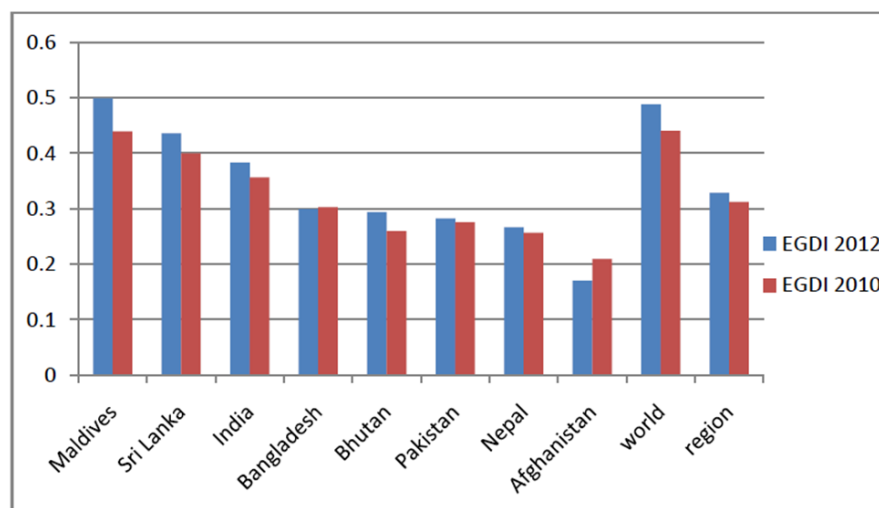


Fig.2. E-government Development Index of the SAARC Region

All South Asian countries performed much better in 2012 than in 2010, except Bangladesh and Afghanistan, according to the table and the graph. In its index, the Maldives, followed by Bhutan, Sri Lanka, India, Nepal and Pakistan, had the highest rise. On the other hand, in its e-government growth index, Afghanistan had the greatest decline of around 19 percent. Bangladesh (1.22%) did not have a major fall, of course. If the regional and global averages are compared, however, it can be seen that, on the other hand, the world had an 11% rise, while the SAARC region had an increase of just 5%. But the fact is that, compared to 2010, Bangladesh declined in 2012, instead of increasing.

The change in ranking of SAARC countries in e-government development index is shown in the following chart.

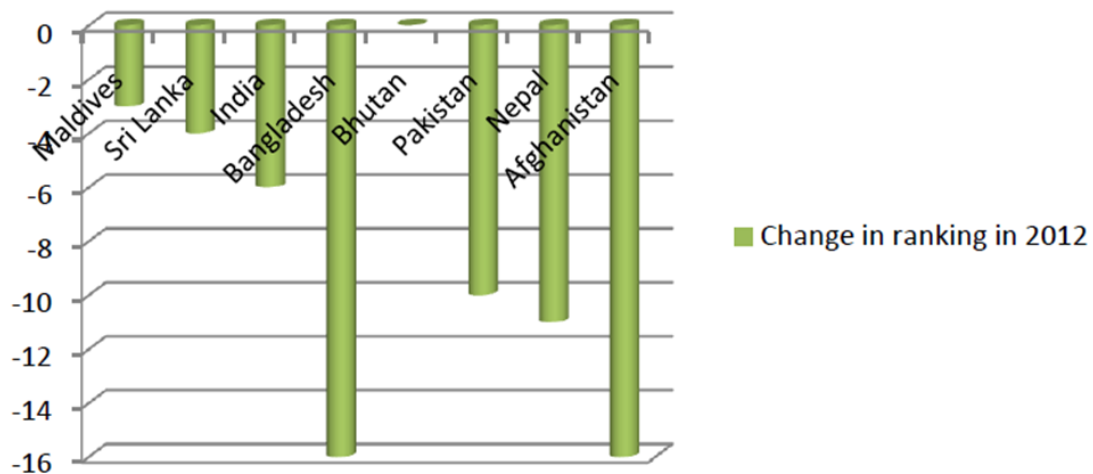


Fig.3. E-government Ranking of SAARC Countries

The graph shows that in 2010, a number of measures from their respective rankings were rejected by all countries in the world, except Bhutan. Bhutan was able to protect its position. It is also seen here that, in the event of a decline in the e-government growth index ranking, Bangladesh has followed Afghanistan. While the other nations were able to increase their index, it was not possible to retain their position. It illustrates that other countries in the world are doing much better in delivering their e-government services. Such nations are making a number of attempts to keep pace with those nations, but they are not enough. (Hassan, M. R., 2013).

C. E-Government Services for Sustainable Development

Recently, information and communication technology for sustainable development has become an emergent research topic in most developing countries (Pade et. al., 2010). The standard response is that for individuals who can boost planning and management projects, we need to invest in the growth that requires access to information. Taking this into account, developing countries such as Bangladesh have undertaken efforts to implement ICT sustainable development programs with the assistance of donors or local agencies. However, there is still a gap in the adoption of information technology by urban and rural citizens in developing countries.

The foundation of economic growth is sustainable development, and knowledge is an integral component of the development process. Rural people should have access to some kind of information that will help them become knowledgeable and successful in their social and political roles, whether or not they are educated, and generally become well-informed citizens. (Hoq, K. M. G. 2012). It has been stated that information and communication technologies in any country, including developing countries, can contribute to social and economic growth (Cecchini and Scott, 2003). With this in mind, through direct and/or indirect monitoring by national and international organizations such as the World Bank and the United Nations, the governments of Bangladesh have been prompt to initiate ICT projects in remote areas (Ashraf and Malik, 2011). Researchers also indicate that if ICT is properly implemented, it can play an important role in the rapid growth of developing countries, especially simultaneously in both urban and rural areas (Chapman and Slaymaker, 2002). However, the question is how to effectively implement e-government to help Bangladesh meet the demands of the sustainable development goal.

Development can be successful only if people have access to the information essential for their everyday activities (Harande, 2009). The ICT-based e-governance project has played an important role in obtaining access to relevant information and improving government services in recent years. It increases the productivity of government information, lowers costs, improves transparency and ensures quality of service (Al-Hujran et. al., 2011). The Union Information and Service Centre (UISC) has been a significant initiative of the Government of Bangladesh to provide authentic, trustworthy and quality information at national, organizational and individual level. UISC plays a vital part in delivering rural information services. The UISC's main goal is to provide basic rural data to rural dwellers. This works to raise the standards of living and the quality of life as information and community centers. (Habib et. al., 2013). The government of Bangladesh split the UISCs' services into three: government, information, and commercial services. At no cost, government services are given. On the other hand, to mitigate the digital divide between urban and rural areas, low-cost information and commercial services are offered. Government services include government circulars and notices, online birth registration, entry of population census data, online college enrollment, examination results, citizenship certificates and the Citizens' Charter of the Union Parishad. The information resources include agriculture, education, health, law and human rights, environmental and disaster management, tourism, science and technology, business and trade, and employment. Commercial services include banking, life insurance, English language learning, computer training, online search, blogging, composing, scanning, photocopying, data entry, telephone calls, video conferencing, passport and visa processing, medical services, soil testing, arsenic testing, etc (A2I, 2013).

However, to what extent will the UISC contribute to the welfare of the people of Bangladesh? Are UISC implementations successful in offering any potential economic and social improvements to people in Bangladesh? Unfortunately, very few studies and publications have tried to address the above problems. This study tried to fill this gap by answering the above questions in a particular social sense in Bangladesh. Consequently, the main purpose of this paper is to explore the impact of the UISC on the growth of the socio-economic status of Bangladesh. Bangladesh's major e-governance achievements, such as rising accountability, providing quality public services, reducing corruption, creating employment, empowering people, eliminating poverty, and gradually building public relations, are seen in the literature above. The above literature also indicates that there is little or no study on e-government for sustainable development and the existing measures for people undertaken by the government of Bangladesh.

D. Challenges Facing E-Government Implementation in Bangladesh

E-government is not a single event in a short period of time, but a long-term evolutionary phase of reforming the government to focus on people. The e-government challenges are often focused on the national capacity for change and innovation, which in itself primarily determines the achievement of e-government goals. The implementation of e-governance is not without problems and conflicts in a developing country like Bangladesh. Different governments in Bangladesh have taken major steps over the last few years to incorporate information technology and its tools for the functioning of the government. The aim was to provide better services for citizens and improve productivity. In an effort to measure the size of the global e-government land-scape, the United Nations Division for Public Economics and Public Administration (UNDPEPA) and the American Society for Public Administration (ASPA) conducted a survey of the processes, development, and commitment of the 190 United Nations Member States to the adoption of e-government in 2001. Here we find out some of the issues that can hinder the implementation of e-governance in Bangladesh.

Political Issues: In the functioning of government, political factors are very effective, which, if the interest of a party is disrupted, may hinder the implementation of e-governance. Political stability is important in order to successfully introduce e-government in any country. But in Bangladesh, this has yet to be achieved. For this reason, every e-government project suffers from the implementation and progression (Bhuiyan 2011).

- I. **Infrastructural Deficit:** There is a large gap in the level of infrastructure in rural areas compared to urban areas, given that rural areas make up more than 60 percent of the population. The majority of base telecommunications stations are located in urban areas, leaving few to no rural connections to telecommunications services. However, Bangladesh's teledensity frequency range is high, reaching nearly as high as 101, 5499.
- II. **Automation of Government Agencies:** For the various government departments, government has built several websites, but because of the no-automation structure of government websites, the public cannot get the full benefits of e-Governance using different websites. For example, to get full functionality of e-governance services, individuals cannot fill up any online form of government website yet. Via the National Board of Revenue (NBR) website, people do not deposit annual income tax till now (Alam, M. J. 2012).

- III. **Low IT Skill Manpower:** To incorporate e-government in any country, adequate skilled human resources are must. Knowledge, education and technical competence are considered to be important factors for adopting e-government (Khanh 2014). All these considerations, along with purchasing power, can be categorized into access groups. But in Bangladesh, it is still in poor condition.
- IV. **Budgetary Allocation:** A very ambitious e-government work plan is in motion, requiring a significant amount of budget to be invested. A timely and cost-effective availability of funds is required, not only during the digitalization process, but also for the maintenance of projects. As we know that Bangladesh is a developing country, it is always difficult for such ambitious projects to have too much cash. (Hassan, M. R. 2013).
- V. **IT Policy:** The government as a whole should have a consistent IT policy that is compatible with the IT sector's revitalization and use. It is difficult for the government to develop a standardized IT policy, like other policies. Now we have the 2009 IT policy. It has taken too much time to have a successful IT strategy for the country. This is one of the obstacles in Bangladesh to growing e-governance.
- VI. **Privacy and Security Challenges:** For the successful implementation of e-government, the privacy and security of the internet are crucial. Internet fraud has long been a problem that has troubled the nation due to the lack of cyber security regulations that have affected the country's image at home and abroad. In order to contain the activities of fraudsters, most e-payment providers have called for the rapid passage of the long-awaited cyber security law (Daily Independent, 2013).

V. METHODOLOGY

Most of the paper focuses on secondary data, enhanced by primary data obtained from different sources. The required information was obtained from the websites of the relevant government departments/agencies and through interviews and consultations with selected government officials with extensive field expertise and local e-government programs, in addition to a thorough analysis of secondary sources. There is a need for e-government, high-level political support, and fruitful public, private and non-governmental collaboration to be seen as a long-term project. This paper contributes to the field's restricted awareness. Lessons gained from Bangladesh's experience are of great value to other developing countries with similar socio-economic conditions. Policy makers and practitioners are predicted to benefit from the observations of the paper. The paper illustrates the ways in which, amid the restricted overall e-development of nations, numerous e-initiatives have modified traditional administrative processes and procedures. It also highlights how e-innovations have helped address several particular issues, adding to the convenience and benefits of service users. The key conclusion of the paper is that while e-government has yet to make a breakthrough in delivering governance and services, it has set in motion the wheels of change.

VI. RECOMMENDATIONS FOR IMPLEMENTING E-GOVERNANCE IN BANGLADESH

There is no question that the issues outlined above are significant barriers to effective e-government implementation. They pose a major challenge to achieving the objective of providing a dynamic, reliable, productive and open public service. (Liton, S., & Habib, M. A. 2015). Nobody can avoid the positive changes created by the use of electronic media in governance to bring good governance to the country. A series of steps should be taken to resolve the concerns identified with the way ICT is effectively implemented. Some of the steps are listed below.

- First and foremost, it is very important that political parties agree on the issue in order to effectively implement e-governance in Bangladesh. It should be done in such a way that the plan will not change and no alternation will be applied in any project with the change of government.
- Infrastructural issues should never be ignored when addressing issues of e-government. An efficient e-government program depends on the sophistication and availability of the ICT infrastructure. A system to make computers and the internet available for individuals to participate effectively in the e-government program is required by the government.
- Government has to create different kinds of applications on different websites so that any person can fill up and submit the various types of forms via the internet without visiting government offices. If citizens have the ability to carry out their duties across the internet with all kinds of government officials, it will bring force to implement e-Governance and people will get the fruitfulness of e-Governance in the shortest possible time.

- Producing skilled, effective, knowledgeable and capable human resources is a key to e-government success. Educated and qualified staff should be assigned to execute e-government projects in all relevant project positions.
- The budget is one of the most important barriers to such high capital intensity projects in developing countries such as Bangladesh. The government may seek funding from donor agencies to finance such projects.
- Education is essential to the use of e-government from the point of view of people. Government must therefore really invest in education and make ICT a compulsory subject in schools ranging from primary to tertiary and adult education. Doing this would develop the awareness and skills that people need to work and communicate electronically with the government.
- The proper ICT policy should be promulgated in order for e-government to progress in Bangladesh and these policies should be enforced consistently.
- Good planning is good stewardship. Success in any endeavour requires careful preparation and planning. Without proper planning and preparation, failure is almost guaranteed.

VII. CONCLUSIONS

E-government is a strategic tool and has a potential role to play in reducing the internal issues of any nation. By providing access to information, integrating various systems and services between government and people, empowering and enhancing the social, environmental and economic values of citizens, e-governance, driven by technology, transforms public services. Bangladesh is a developing nation in terms of lack of good governance and there are many problems people face. The key player in the process of e-governance is the government. But the planned transformative shift in the field of e-governance by the government alone is unlikely to be brought about. Government and private ventures, as well as NGOs, would contribute a great deal to this end. Donor organizations should also be aware of, and can play a positive role in, the need for Bangladesh to implement e-governance. Increasing awareness of the adoption of e-government among all citizens and meeting the challenges of the implementation of e-government should be discussed. This is the time to work on e-governance and, through stabilization, make the country develop socially and economically. In order to establish effective e-governance, e-governance services such as Singapore and Korea should be observed by Bangladesh in order to provide better results and to achieve the goal.

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