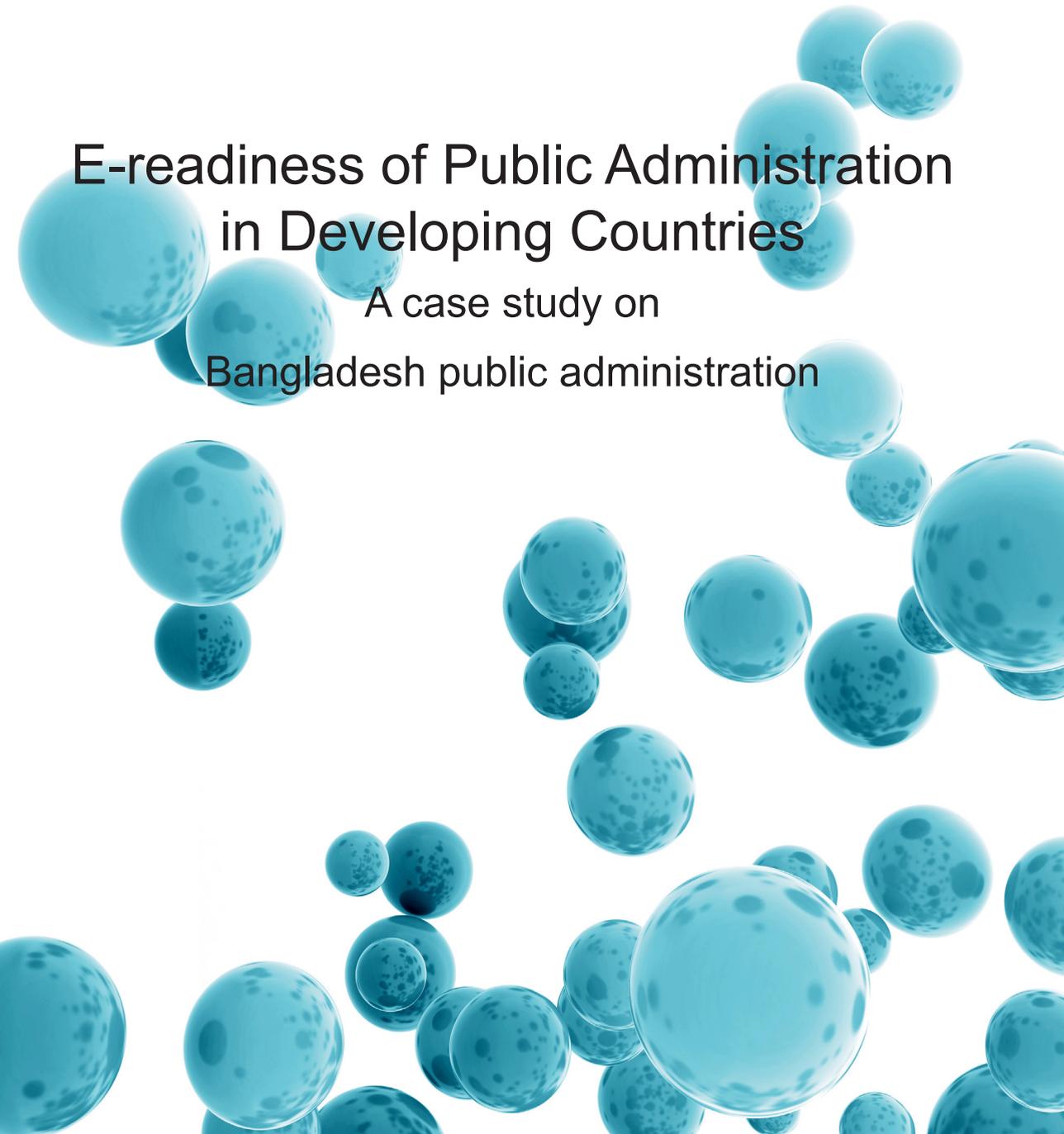# MD ABIR HASAN KHAN

E-readiness of Public Administration in Developing Countries

A case study on

Bangladesh public administration

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The originality of this thesis has been checked using the Turnitin OriginalityCheck service in accordance with the quality management system of the University of Tampere.

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Dedicated to my parents:

Alhaz Wazed Ali Khan
And
Monowara Begum

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ABSTRACT

Electronic government, or e-government, is one of the most important reforms of our time. It is generally believed that e-government is conducive to increasing the efficiency and effectiveness of public governance and service delivery. Yet, countries' capacities to utilize e-government tools vary significantly. The e-government trend originated in the developed world, where infrastructure and other conditions are fairly good; however, in developing countries, the situation is completely different. Despite these differences, e-government has become a global phenomenon. This has resulted in a particular problem in developing countries: They may not be ready to apply information and communication technologies in the public sector in ways that make it possible to reap the benefits of e-government. In such cases, developing nations' good intentions are jeopardized by their societal conditions, including poor infrastructure, illiterate human resources, and inept government. In this sense, e-readiness is a critical issue in public sector reforms related to e-government in practically all developing countries. Bangladesh is no exception. The government of Bangladesh has initiated policies and strategies to promote administrative transparency and accountability and to improve service delivery. Though Bangladesh has gradually improved its e-government maturity, this development has generally been very slow. The challenge is not only technological; rather, being ready for e-government also requires a sufficient level of human capital and a favorable attitude among political leaders and public managers, which have appeared to be challenges in the case of Bangladesh. Moreover, the government should introduce suitable governing systems and managerial practices that conform to the requirements that must be met in order to truly benefit from e-government.

This research aims to explicate e-government and the various approaches and initiatives taken to achieve e-readiness in the public administration of Bangladesh. The study identifies the drawbacks the government faces in achieving the greatest benefits possible from e-government. The focus of this research is to build a comprehensive picture of the existing status, approaches, and initiatives of e-government; to identify the e-readiness shortcomings preventing e-government success; and to propose further strategies for the proper application of e-government to the public administration in Bangladesh in particular and, indeed, to developing countries in general.

The focus of this research is the public administration of Bangladesh. Before empirical data were collected, literature on the e-government readiness of developing countries was reviewed. Next, methodological issues were discussed to form the grounds for the empirical data collection. This is a case study, and data were collected from both primary and secondary sources. Specifically, governments' initiatives were elicited from government documents, nationally and internationally published reports, books, journal articles and web sources. Moreover, primary data were collected from interviews with officials from the selected administrative districts.

The findings of this research are significant, especially for the developing world and, most particularly, for the public administration of Bangladesh, since they show why e-government efforts fail to achieve their desired success due to lack of certain characteristics. A fundamental stipulation is that, in order to promote e-government, the government should focus on e-readiness and on appropriate plans and strategies. Currently, the Bangladesh government's plans and strategies for e-readiness seem vague, and they lack a clear structure for what outcomes the government eventually wishes to see and how it wishes to attain them. Regarding plans and strategies, to achieve success in e-government, the government should update the systems of governing compatible with e-government demands, frame the application of information and

communication technologies with a vision to keep up with the changing world in the long run, build training facilities for employees to help them grow their skills in human capital and organize a management force.

TIIVISTELMÄ

Sähköinen hallinto, tai e-hallinto, on yksi aikamme tärkeimmistä reformeista. Yleisesti uskotaan, että sähköisellä hallinnolla voidaan lisätä julkisen hallinnon ja palvelujen tuottamisen tehokkuutta ja vaikuttavuutta. Kuitenkin eri maiden valmiudet hyödyntää sähköistä hallintoa vaihtelevat merkittävästi. Sähköisen hallinnon kehitys sai alkunsa kehittyneissä maissa, jossa infrastruktuuri ja olosuhteet ovat suhteellisen hyviä; kehitysmaissa tilanne on kuitenkin täysin erilainen. Näistä eroista huolimatta on sähköisestä hallinnosta tullut maailmanlaajuinen ilmiö. Tämä on aiheuttanut ongelmia kehitysmaissa, joilla ei ole samanlaisia valmiuksia soveltaa tieto- ja viestintätekniikkaa julkisella sektorilla siten, ne hyötyisivät sähköisestä hallinnosta. Kehitysmaiden yritykset hyötyä sähköisen hallinnosta saattavat jopa vaarantaa niiden yhteiskunnallisia olosuhteita, heikkoa infrastruktuuria, lukutaidottomuutta ja taitamatonta hallintoa. Käytännöllisesti katsoen e-valmius on kriittinen kysymys julkisen sektorin sähköisen hallinnon uudistuksissa kaikissa kehitysmaissa. Bangladesh ei ole poikkeus. Bangladeshin hallitus on käynnistänyt toimia ja strategioita, joilla edistetään hallinnon avoimuutta ja vastuullisuutta palvelujen tarjonnan parantamiseksi. Vaikka Bangladesh on vähitellen kehittänyt sähköistä hallintoa, on kehitys ollut hyvin hidasta. Haasteet eivät ole ainoastaan teknisiä, sillä sähköinen hallinto vaatii myös riittävästi inhimillistä pääomaa ja asiaan myönteisesti suhtautuvia poliitikkoja ja julkissektorin johtajia. Nämä ovat osoittautuneet haasteeksi Bangladeshissa. Lisäksi hallinnon pitäisi pystyä luomaan vaatimusten mukaiset hallintojärjestelmät ja johtamiskäytännöt, joista on todellista hyötyä sähköiselle hallinnolle.

Tutkimus tarkastelee sähköistä hallintoa, sen eri lähestymistapoja ja julkishallinnon tekemiä avauksia sähköisen valmiuden saavuttamiseksi Bangladeshissa. Tutkimuksessa tuodaan esiin hallinnon kohtaamia ongelmia sen pyrkiessä optimoimaan sähköisen hallinnon hyötyjä. Tutkimus rakentaa kattavan kuvan sähköisen hallinnon käyttöönotosta, sen nykytilasta ja lähestymistavoista sekä tunnistaa myös niitä sähköisen valmiuden puutteita, jotka saattavat olla esteitä onnistua sähköisessä hallinnossa. Tutkimus tuo esiin uudenlaisia sähköisen hallinnon strategioita, joita voidaan soveltaa erityisesti Bangladeshin julkisessa hallinnossa ja yleensä kehitysmaissa.

Tutkimus eteni seuraavien vaiheiden kautta. Ennen empiirisen aineiston keruuta tutustuttiin kirjallisuuteen ja tutkimuksiin liittyen kehitysmaiden sähköisen hallinnon valmiuteen. Tämän jälkeen vuorossa oli metodologisista valinnoista päättäminen, mikä loi perustan empiiriselle aineistolle ja sen keräämiselle. Tutkimus on tapaustutkimus, joka keskittyy Bangladeshin julkishallintoon. Tutkimusaineistona on käytetty primaari- ja sekundaarilähteitä. Primaarilähteinä on käytetty valituilta hallinnonaloilta koottujen virkamiesten haastatteluja. Sekundaarilähteitä ovat olleet erityisesti asiakirjat hallinnon aloitteista, kansallisesti ja kansainvälisesti julkaistut raportit, kirjat, lehtiartikkelit ja internet-lähteet.

Tutkimustulokset ovat merkittäviä etenkin kehitysmaiden ja erityisesti Bangladeshin julkisen hallinnon kannalta, koska ne osoittavat, miksi sähköinen hallinto ei onnistu saavuttamaan toivottuja tuloksia tietyistä puutteista johtuen. Sähköisen hallinnon edistämiseksi tulisi valtion keskittyä sähköisen valmiuden luomiseen ja asianmukaistaa suunnitelmiaan ja strategioitaan. Tällä hetkellä Bangladeshin hallituksen suunnitelmat ja strategiat sähköisen valmiuden luomiseksi näyttävät kuitenkin epämääräisiltä, sillä niistä puuttuu selkeä rakenne mitä tarvitaan tulosten saavuttamiseksi. Jotta sähköisen hallintoon liittyvät suunnitelmat ja strategiat

toteutuisivat, tulisi julkisen hallinnon päivittää järjestelmänsä yhteensopivaksi vastaamaan sähköisen hallinnon vaatimuksia, luoda visio ja muuttuvaan maailmaan pitkälle aikavälille soveltuvat tieto- ja viestintätekniikan rakenteet sekä suunnitella ja tarjota työntekijöilleen koulutusta, joka auttaa heitä kehittämään inhimillisen pääoman taitojaan ja organisoimaan johtamistaan.

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ACRONYMS AND DEFINITIONS

Accountability: In order to promote democracy in the country, the administration should practice accountability. This is done by ensuring that citizens and other stakeholders have the right to ask officials about any corrupt deeds.

Developing and underdeveloped countries: A developing country, also called a less-developed or underdeveloped country, is a nation with a lower living standard, underdeveloped industrial base, and low Human Development Index.

Effectiveness: Effectiveness is the capability of producing a desired result. When something is deemed effective, it produces an intended or expected outcome, or produces a deep, vivid impression.

Efficiency: Efficiency generally describes the extent to which time, effort, or cost is effectively used for the intended task or purpose.

Ferryghats: Ferryghats are places in which vehicles, people, and other goods are transferred from one bank of a river or canal to another.

Hat-bazar: A hat-bazar is a marketplace in which people can purchase their daily necessary goods, including food stuffs.

ICTs: ICTs are devices ranging from cameras and compact disks to mobile phones and computers. Depending on the requirements, a connected ICT infrastructure may be wired, wireless, automated, manual, or a combination of all of these.

Internet: The internet is defined as a highly connected virtual highway that allows data to pass from person to person, organization to organization, and country to country.

Second and third-grade employee: There are different grades of employees in the government administration of Bangladesh, such as, first, second, third, and fourth.

Stakeholder: An stakeholder is an accountant, group, organization, member, or system who affects or can be affected by an organization's actions.

Transaction Services: Transaction services permit users to use data communication (i.e. submission or processing) to interact with the public authority electronically.

Transparency: Transparency is the practice of making the functions of government open for all.

Upazilla: Upazilla is the third lowest tier of regional or field administration in Bangladesh.

Union Parishad: The lowest tier of government administration.

A2I: Access to Information

ADB: Asian Development Bank

ADP: Annual Development Program

BANBEIS: Bangladesh Bureau of Educational Information and Statistics

BASIS: Bangladesh Association of Software and Information Services

BBTOA: Bangladesh Bus Truck Owners Association

BCC: Bangladesh Computer Council

BDT: Bangladeshi Taka (the currency of Bangladesh)

BEI: Bangladesh Enterprise Institute

BEPZA: Bangladesh Export Processing Zones Authority

BGSL: Bakhrabad Gas Systems Limited

BICF: Bangladesh Investment Climate Fund

BITMAP: Bangladesh Technology Information Programme

BOGC: Bangladesh Oil and Gas Corporation

BOI: Board of Investment

BOO: Building-Own-Operate

BOOT: Building-Own-Operate-Transfer

BOT: Building-Operate-Transfer

BPDB: Bangladesh Power Development Board

BPSIG: Bangladesh Private Sector Infrastructure Guidelines

BRTA: Bangladesh Road Transport Authority

BRTC: Bangladesh Road Transport Corporation

BTCL: Bangladesh Telecommunications Company Ltd.

BTRC: Bangladesh Telecommunication Regulatory Commission

BTTB: Bangladesh Telegraph and Telephone Board

CIDA: Canadian International Development Agency

CIO: Chief Information Officer

DB: Digital Bangladesh.

DC: Deputy/District Commissioners

DCCI: Dhaka Chamber of Commerce and Industries

DDA: Directorate of Drug Administration

DESA: Dhaka Electricity Supply Authority

DESCO: Dhaka Electric Supply Company

DGFP: Directorate General of Family Planning

DGHS: Directorate General of Health Services

DLRS: Directorate of Land Records and Survey

DMP: Dhaka Metropolitan Police

DNS: Directorate of Nursing Services

DPDC: Dhaka Power Distribution Company Ltd.

DPE: Directorate of Primary Education

DSHE: Directorate of Secondary and Higher Education

DWASA: Dhaka Water Supply and Sewerage Authority

EMR: Electronic Medical Record

EU: European Union

FY: Fiscal Year

GIS: Geographic Information System

GoB: Government of Bangladesh

GSB: Graduate School of Business

HSC: Higher Secondary Certificate

IFC: International Finance Corporation

ILO: International Labour Organization

IT: Information Technology

ITC: International Trade Center

JGTDSL: Jalalabad Gas Transmission and Distribution System Limited

JICA: Japan International Cooperation Agency

LAN: Local Area Network

LGD: Local Government Division
LGED: Local Government Engineering Department
LGRD: (Ministry of) Local Government and Rural Development
MIS: Management Information System
MoCommunications: Ministry of Communications
MoEdu: Ministry of Education
MoEF: Ministry of Environment and Forestry
MoHA: Ministry of Home Affairs
MoHFW: Ministry of Health and Family Welfare
MoLand: Ministry of Land
MoLaw: Ministry of Law, Justice and Parliamentary Affairs
MoPEMR: Ministry of Power, Energy and Mineral Resources
MoPME: Ministry of Primary and Mass Education
MoPT: Ministry of Posts and Telecommunications
MoSICT: Ministry of Science and ICT
MoWR: Ministry of Water Resources
NBR: National Board of Revenue
NGO: Non-governmental Organization
OECD: Organization for Economic Cooperation and Development.
PGCB: Power Grid Company of Bangladesh, Ltd.
PMO: Prime Minister's Office
PPP: Public Private Partnership
REB: Rural Electrification Board
RJSC: Registrar of Joint Stock Companies
ROM: Rehabilitate-Operate-Maintain
ROT: Rehabilitate-Operate-Transfer
SICT: Support to ICT (SICT is a project to support the National ICT Taskforce of Ministry of Planning of GoB)
SLMTTM: Self-Learning Multimedia Teachers' Training Materials
SMS: Short Message Service
SOT: Supply-Operate-Transfer
SSC: Secondary School Certificate
TTI: Teacher's Training Institutes
UIC: Union Information Center
UP: Union Parishad (an elected local government body)
UN: United Nations
UNIDO: United Nations Industrial Development Organization
UNDP: United Nations Development Programme
UNESCO: United Nations Educational, Scientific and Cultural Organization

1   BACKGROUND AND SCOPE OF THE RESEARCH

1.1   Introduction

The forms and functions of government have changed dramatically over the last thirty years due to various contextual factors. The information revolution has been one of the most important factors behind this change. While there has been discussion about the utilization of information and communication technologies (ICTs) in public administration since the 1950s, this discursive field took a new turn following two 'explosions': first, the quick penetration of personal computers (PCs) in the 1980s and, soon after, the Great Internet Explosion (GIE) of the first half of the 1990s. In the wake of these developments, ICT became an essential element of the global public sector reform agenda. Though the potential of ICT can hardly be said to be fully exploited, it has clearly increased flexibility and efficiency in public governance and service delivery, facilitated public sector communication and improved transparency and access to government information, especially in developed countries, which are technologically advanced and have sufficiently high institutional capacity (Song, 2004).

ICT is often considered a means for leveraging the concept of e-government. However, it has been observed that the implications of e-government through the use of ICTs differ in developed and developing countries. Although the importance of e-government has been globally acknowledged since the 1990s (Anttiroiko, 2008), the most common problems behind the inequalities between developed and developing countries include the unavailability of ICT infrastructures and the lack of other readiness measures for e-government, such as weak education systems, unequal access to technologies, etc. (Saxena, 2005). Thus, overall readiness for e-government applications—including, more specifically, e-readiness—in developing countries is far behind.

Nearly all developing countries are now promoting national information technology (IT) development plans or have begun to associate with e-readiness plans for e-government (Choucri, Maugis, Madnick, and Siegel, 2003). The difficulty of managing the development and adoption of ICTs within the public sector has been considered another major problem regarding e-government (Hinnant and Sawyer, 2007). Moreover, the challenges of developing a stable technical infrastructure, a stable political system, a legal framework, and skilled human capital are other significant concerns in the developing world (Al Nagi and Hamdan, 2009).

Nearly all governments worldwide, especially those in developing countries, have initiated e-readiness for e-government implementation. However, the proper means to achieve its benefits and avoid its challenges, such as the benefits of the transformation of governance business, the transformation of the governance itself, and the challenges behind e-government e-readiness, have not yet been fully explored. In order to address changing administrative demands, the process of the administrative modernization (i.e. the system of e-government), cannot be implemented in the same fashion all over the world. For instance, in some parts of the developed world, the process of administrative modernization through New Public Management (NPM) is still not considered to be an efficient reformation process. Like NPM, a comparatively new initiative, e-government is also considered to have a lot of potential for improving public service delivery and has turned out to be more of a failure than a success (Ray, 2011). One study by Hochstrasser and Griffiths (1991) showed that up to 70% of projects related to information systems fail to meet their objectives. Some scholars believe that studies from developed countries can aid the success of e-government in the developing world (Weerakkody and Dwivedi, 2007).

In most cases, ICT has been mentioned as one of the drivers in the success of e-government development. The potential of ICT is to stimulate innovative ways of service delivery, but not the overall process of the systems of governance. Thus, before introducing any new reforming application into the administration, the government should focus on what it actually wants to achieve from the application. For example, different governments worldwide have different governing models (e.g., authoritarian, self-governance, open-system, and rational-goal). In order to benefit from e-government, there should be legitimate governing models compatible with ICT.

1.2   Research background

Despite the technical challenges related to ICT, the clear benefits of e-government cannot be overlooked. In order to achieve the promised benefits of e-government (i.e. transformation and engagement among different parts of government and society), the focus should be on normative and political mechanisms, rather than simply the automation of processes using ICT (Amoretti, 2007). In this domain, overall governmental policies play a vital role in how e-government is implemented and benefits will be gained. Here, it could be said that the automation of any mechanism alone would be a great financial loss and waste of time, especially for the developing world. Eventually, in order to achieve the highest benefits possible from e-government, the primary goal of automation should be connected to the transformation and engagement process.

Primarily, ICT is considered the basic requirement for readiness for any kind of electronic service or e-service. Since the inception of 'e', various public- and private-sector services have readied themselves to offer their customers greater benefits through the wider use of ICT. Choucri and others (2003) have mentioned different electronic services offered by both the public and the private sectors, as shown in Figure 1.
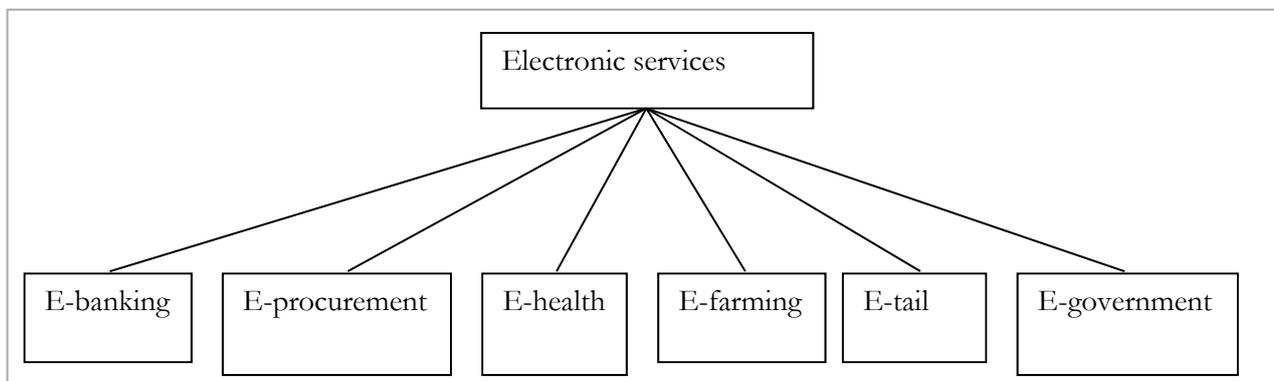
Figure 1.   Various Electronic Services (Choucri, Maugis, Madnick, and Siegel, 2003).

On the whole, this research is concerned primarily with the background of e-readiness for the success of e-government. It is known that the primary initiative of e-government is the e-readiness of the public sector in the form of ICT applications and human resource development. ICT facilitates the transformation of services to different customers, such as citizens and businesses, and between different government agencies. ICT is also the solution to various public sector mal practices, such as corruption, red tape, unnecessary delays to public services, etc. It is critical to mention here that the main goal of e-government ICT is to provide discrete benefits to the country as a whole. The three main categories of benefits expected from e-government reform are (cf. Anttiroiko, 2008):

1. Improved delivery of public services in terms of availability, ease of use, and cost savings to the government, businesses, and to individuals;

2. Improved transparency, accountability and democracy and reduced opportunities for corruption; and

3. Overall economic and social gains.

More precisely, the above benefits become achievable when the government ensures correct methods of disseminating ICT (i.e. computer hardware and computer software and the related computer-based systems and applications designed for information handling and communication) (ibid).

Although the challenges e-government, such as the requirements for ICT equipment, fiscal policies, education, etc., differ between developed and developing countries, the readiness factors are similar in all parts of the world. Concerning sound e-readiness, the challenges should be identified by considering the gaps in supply and demand and ascertaining the e-government development on the basis of these requirements. Theoretically, the term 'e-readiness' means knowledge about how an organization or, more broadly, a country is ready for the implementation of various electronic services (e.g., e-commerce, e-government). In practice, however, e-readiness is considered to be the application of ICTs to achieve extensive benefit in the forms and functions of both public and private sectors (Dada, 2006).

The 1998 Computer System Policy Project (CSPP) is considered the first effort to define e-readiness as follows: E-readiness is speedy access in a competitive market with respect to a community, in relation to school, government offices, healthcare facilities, and homes, and certainly to include user privacy and online security systems. Finally, e-readiness requires the promotion of favorable government policies in accordance with the available use of required networks (cf. Mutula and Brakel, 2006).

Taking a broader perspective, Bridges.org (cf. Vaezi and Bimar, 2007) outlined physical infrastructure, meaning high bandwidth, reliability, and affordable prices, as one of the eminent factors of e-readiness. It also pointed out the multifarious integration processes of ICT, including ICT integration into business as e-commerce; ICT integration to support communities, government, and everyday life in different government and private organizations; etc. In addition, it noted that e-readiness should involve substantial telecommunications competition, independent regulation with an obligation for universal access, and no limits on trade or foreign investment.

In light of these speculations concerning e-readiness, it can be said that, in order to lay a solid foundation for e-government, the government must first consider e-readiness, such as ICT infrastructures. ICT infrastructures cannot achieve their government transformation and engagement processes without trained human resources. Therefore, it can be said that readiness for e-government is primarily the combination of ICT infrastructure and trained human resources. However, in order to gain the expected benefits of e-government, citizen engagement processes should be considered at the very initial stages of planning and strategies. Here, it is worth mentioning that the public sectors are solely for the government; rather, they circulate their functions primarily to citizens and businesses. The main functions of e-government are processed as follows (cf. Moon, Lee, and Roh, 2014; Norris and Reddick, 2012; Dorji, 2012):

1. Government to Government (G2G)

2. Government to Business (G2B)

3. Government to Citizen (G2C)

4. Government to Employees (G2E)

However, the above operations are not yet mature or properly implemented in all parts of the world. In order to understand a nation's level of e-readiness, it is vital to know its level of e-government maturity. Authors from distinct parts of the world (Layne and Lee, 2001; Baum and Di Maio, 2000; Ronaghan, 2001; Hiller and Belanger, 2001; and Wescott, 2001) have focused on the maturity or the development process of e-

government depending on e-readiness. Ronaghan (2001) defined five stages: emerging presence, enhanced presence, interactive, transactional, and seamless. Hiller and Belanger (2001), and Wescott (2001) added one more stage: participation and/or joined-up government.

The different development stages will be elaborated in the theoretical chapter of this thesis. In short, stage six mentioned by Hiller and Belanger (2001) has been considered the most mature stage of e-government. To achieve this highest level of maturity, a readiness of infrastructures and human resources, as well a positive mental attitude among employees towards reciprocal participation and joined-up government, are necessary. Here, infrastructural and human resources and other readiness factors (e.g., financial, regulatory, and systematic capabilities), reflect organizational capacity. Mental readiness requires the willingness of employees, since the function of government is to provide information and knowledge for the empowerment of citizens.

This research examines e-readiness for successful e-government from the above perspectives in the context of resolving various administrative agencies, especially in Bangladesh public administration. The framework of e-government readiness is shown in Figure 2.
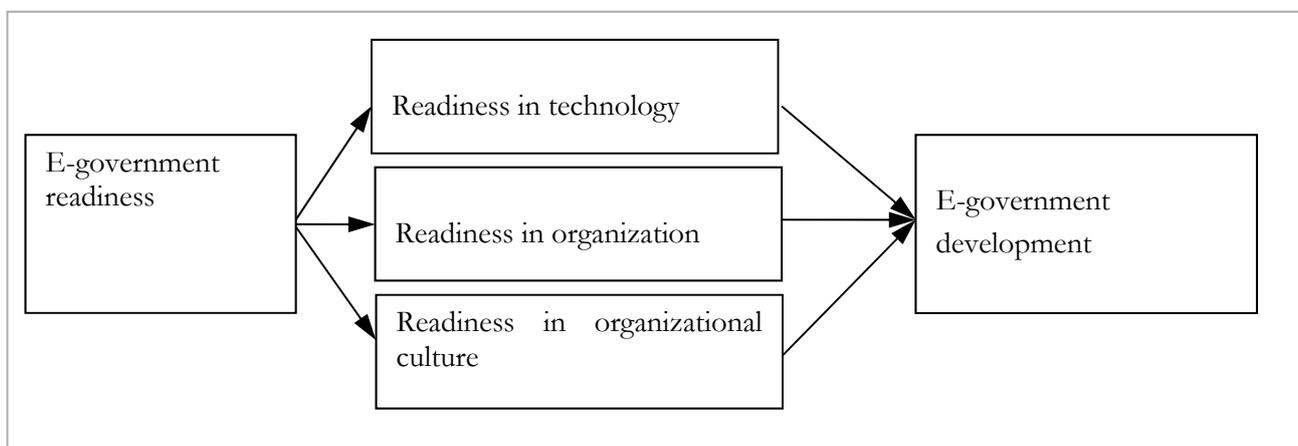
Figure 2.   Outline of e-government readiness (Modified from the model given by Srivastava and Teo, 2007)

1.3   Literature review

The use of ICTs in government organizations dates back to the invention of the computer (Grönlund, 2007). Since the mid-1990s, the utilization of ICTs in government operations has been termed e-government and e-governance (cf. Loader, 1997; Bellamy and Taylor, 1998; Tsagarousianou, Tambini, and Bryan, 1998; Snellen and van de Donk, 1998; Woolpert, Slaton, and Schwerin, 1998; Hinnat and Sawyer, 2007; Srivastava and Teo, 2007). Both e-government and e-governance were born from the concept of online government systems, such that e-government represents e-administration, e-service, and e-democracy. On the other hand, e-governance represents government, society, and the economy as a whole (Schellong, 2009). The above representations of virtual government make it clear that, when the administration is e-ready, then e-service can be ensured. The sequential outcome is, then, e-democracy.

Since the inception of the term "virtual government," the topic of e-government has attracted several researchers. Their research interests have manifested not only in the field of management, but also many other sectors and research units (e.g., public administration, political science, computer science, information system, and library and information studies) (Heeks and Bailur, 2006). Eventually, it became clear that researchers widely believed that e-government has the capability to offer specific benefits that are missing from conventional bureaucratic systems. Before the emergence of e-government in mainstream statecraft models,

there were four types of governing systems: the self-governance, hierarchy, open systems, and rational goal models. The ingress of e-government opened up the ICT horizon and categorized these models with new prospects (cf. Newman, 2001; Amoretti, 2007). The expectations of e-government have been related primarily to the following benefits:

a) Improving services to citizens;

b) Improving the productivity and efficiency of government agencies;

c) Strengthening the legal system and law enforcement;

d) Promoting priority economic sectors;

e) Improving the quality of life for disadvantaged communities; and

f) Strengthening good governance and broadening public participation.

Through the above benefits of e-government, combined with the wider use of ICT, the Internet, and the World Wide Web, the government, businesses, academia, and even individuals have greatly benefited. Nearly all governments worldwide have fostered the potential of the Internet and the World Wide Web to elevate and streamline their governing processes. In 1996, fewer than 50 official government homepages could be found on the World Wide Web; by 2001, this number had increased to more than 50,000, and 169 of the 190 UN Member States were providing some degree of online services (Banerjee and Chau, 2004). At present, e-government implementation is growing rapidly, and the use of ICTs and the Internet has spread to nearly all governments worldwide. According to the 2010 UN e-government survey (United Nations, 2010, p.59), "most countries have published a tremendous amount of information online." The survey also show conditions differ between developed and developing countries. Although most developing countries have launched e-government initiatives, their readiness levels have yet to meet all criteria related to e-government. The current report by the Economist Intelligence Unit (2013) shows that 60% of countries still face severe challenges related to the digital divide. However, these policy papers are not the basis of the present research; instead, they are discussed only for clarification purposes. The conclusion of this research will show the true scenario of e-government development based on empirical data.

We know that ICT infrastructures and human resource development are necessary preconditions for e-readiness. Since the introduction of readiness or e-readiness to reduce digital divides in the late 1990s (Kottemann, 2009), the subject has attracted substantive attention from nearly every country in the world (cf. Jaeger, 2003; Jaeger and Thompson, 2003; Panagopoulos, 2004). In addition, different research groups have introduced various approaches to e-readiness (Bridges.org, 2005, 2001; ASPA, 2002; CID, 2000) in order to outline and differentiate the various methods for achieving the highest benefits possible from ICT. These research groups have also specified ways to promote e-readiness in the procedures of e-government and other applications. Ultimately, e-readiness is a measure of how much a specific country, nation, or economy is able to achieve the benefits of ICTs. It may also considered a way to ensure the best practices of an online application (i.e., e-government) (Dada, 2006). E-government readiness applies primarily to every unit or to communities of nations. It is believed that, when a community is led by a government equipped with an e-government network, all societal mechanisms will benefit. When the interaction between government and society, including, particularly, citizens, is opened up, then the course of democracy will be promoted.

Nonetheless, the success of e-government is not judged on digital divides; rather, it is related more to the attitudes and courses of action that a government follows for its operations (cf. Ghorbani and Sarlak, 2011; Hosseini and Ghorbani, 2009; Sarlak and Ghorbani, 2012; Sarlak, Hastiani, Dekhordi, and Ghorbani, 2009). Economically emerging countries lack democratic cultures among government processes and interactions with citizens (Denhardt, Terry, Delacruz, and Andonoska, 2009). The elemental prerequisite of democracy is

a commitment to the civilization of citizens, public officials, institutions, and political processes (March and Olsen, 1995); however, on numerous occasions in developing countries, the citizens have failed to promote the basic requirements of e-government due to backwards or outdates perspectives. Non-democratic government officials also play a role in the slowness of e-government growth, since some government officials are limited by corruption or old-fashioned bureaucratic attitudes. On the other hand, many citizens are not well aware of their democratic rights or are somehow unable to achieve them. Moreover, political processes are frequently not institutionalized in a democratic manner. Therefore, before initiating e-government or any kind of digital involvement, a government must first implement clear governing processes compatible with mainstream democratic efforts.

With respect to its economic infrastructure, Bangladesh is one of the developing nations in the world (*The Economist*, 2012). However, through the direct or indirect assistance of donors (e.g., the UNDP, the World Bank, etc.) the government of Bangladesh has initiated several projects (UNDP Bangladesh, 2008) to ready its administration for e-government and to implement the highest democratic systems and practices within the government. It is important to note that e-government and donor agencies have been well-aligned since the government of Bangladesh initiated this program. The present prime minister of Bangladesh informed a seminar in Tokyo, Japan, that "projects are being implemented to turn the country into a digital one, now you can obtain information about your village or Union Parishad [lowest tier of administration] through internet from the web portals" (Unb, 2010). The introduction of e-government in Bangladesh is a milestone development in making the administration more efficient and effective. However, the application and benefits of e-government still remain unclear.

In 2008, Monash University GSB (cf. Khan and Alam, 2012) distributed a survey project called 'Training Needs for Civil Servants for E-Government Capability in Bangladesh," which identified the necessary factors for e-readiness in Bangladesh as follows: mindset, access, and training of the civil servants. Here, mindset refers to both the internal (within and between agencies) and external (between agencies and civil and international society) e-communication of civil servants and their system of record keeping; access refers to equipment (computer and software) and infrastructure (power, connectivity, Internet capacity); and training refers to the systematic skill development of the civil servants.

Although Bangladesh's journey to digitization began in the late 1990s (Alam and Ahmed, 2008), the introduction of e-government through the promotion of ICT first truly gained momentum in early 1997 (Hossain, 2006). Moreover, it is certain that the desired level of e-government in Bangladesh has not yet been achieved (Khan and Alam, 2012; Khan and Anttiroiko, 2014). Efforts from both organizations and individuals are critical for understanding the situation of e-readiness within the public administration of Bangladesh. The scenario is changing daily even now. Thus, more research can help to identify and explicate the most appropriate guidelines for bringing prosperity and making the administration ready for e-government. To identify current problems and their solutions, an intimate relationship with end users through qualitative data is very important (Denzin and Lincoln, 1998). In this research, in order to determine the reality of e-government in the developing world, a qualitative methodology has been primarily used for the empirical data collection.

This research differs from conventional e-readiness research in that its research analysis is based not only on e-readiness criteria, but also on models that governments use for the success of e-government. In short, this research illustrates the impact of policy processes on the political attitudes of governments in the pursuit and achievement of e-government in the developing world.

1.4   Research context and scope

E-government has the potential to create opportunities for all citizens through the massive reform of public administration (Hossain, 2005). Opportunities may include better services for citizens, inclusive interaction processes, overall economic development, etc. (Islam and Khair, 2012; Bhuiyan, 2011). Recent research has shown that vast numbers of people, even in developing countries, are using the Internet (Warf, 2014). Still, substantial e-government development is lacking, and e-readiness levels are unclear (Kunstelj and Vintar, 2004; Potnis, 2010; Stemberger and Jaklic, 2007). Therefore, the field of e-readiness holds great potential for new research, which can contribute to developing a better scope for the further development of the e-government arena.

E-government and its readiness factors are changing over time and with technological innovations (Siddiquee, 2008). It is very difficult to cope with these changing contexts without further research development. The background and literature review of this work reveal that, in order for e-government to be successful, two types of readiness factors are most important:

> 1. Governmental readiness: This refers to readiness in ICT infrastructure, human resources, financial allocation, etc.

> 2. Societal readiness: This includes national infrastructure, economic health, education, information policies, private sector development, etc.

Neither governmental nor societal readiness can be achieved without strong political self-control (Islam and Khair, 2012). Political self-control facilitates the e-government process by improving telecommunication infrastructures (i.e., ICT infrastructures);the supply electricity; the government's usage of ICT, human capital, and existing and expected budgetary resources; the e-business climate, and officials' readiness for change (i.e., the government culture related to e-government success) (Khan, and Anttiroiko, 2014). Since the main target of this study is to determine the readiness of government administrations for the implementation of e-government in developing countries through the case study of Bangladesh, this research is closely associated with the e-readiness of government administrations. The government of Bangladesh has initiated several e-government projects to strengthen its process of democracy and to overcome its inefficient administrative system. Therefore, the context of this e-readiness research will be beneficial not only for the government of Bangladesh, in particular, but also for other developing countries.

1.5   Aims and objectives of the research

E-government readiness refers to the wider application of ICT in government processes in order to increase the efficiency and effectiveness of the public sector by supporting and improving decision making processes. In most developing countries, such as Bangladesh, the government and its different bodies and levels use ICT for day-to-day activities. However, for several reasons, the desired outcomes, such as better and swifter service provision, increased efficiency and effectiveness, cost minimization, etc., are not yet visible.

The development of ICTs is slow but steady, and hopes for successful e-government have been raised in recent years (Norris and Reddick, 2012). In order to determine the progress of e-government in developing nations, the main aim of this research is to gather knowledge about the e-government readiness of these countries' public administrations. A specific focus has been given to the readiness of Bangladesh's public administration, and the government agencies of Bangladesh have been taken as the case study context for the empirical data used in this research. In light of the above aim, the objectives are to review e-government

readiness, such as the availability of infrastructures and proper training related to e-government applications, in different government agencies; to review projects initiated in relation to e-government readiness and their processes of implementation; to conduct a case study of e-government readiness in order to observe the scope, nature, and constraints related to ensuring sound e-government in different agencies of authority; and, finally, to recommend e-government success factors based on the gathering and analysis of empirical data.

In order to expand the benefits of e-government, the requisite infrastructures are obvious. Here, infrastructures refer to ICT tools and techniques of different types, including hardware applications, software solutions, etc. Training refers to improving employees skills related to the success of e-government applications. To explore these implementation areas, different e-government projects of the government of Bangladesh and their outcomes have been thoroughly studied and analyzed. The main emphasis for analysis and empirical data gathering has been given to e-government within the 'e-service' project of the government of Bangladesh. For clarity of understanding, the objectives of this research have been outlined in Figure 3, which shows that the readiness plan, administration process and final execution all contribute to e-readiness for a successful e-government.
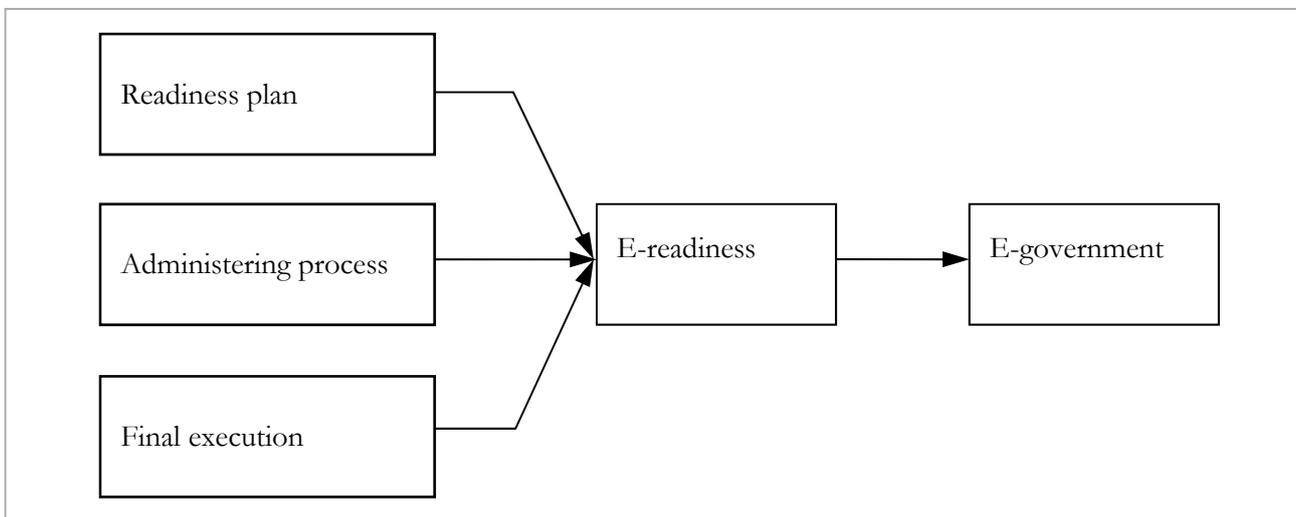
Figure 3. E-readiness towards e-government

1.6 Research questions

E-government is a powerful tool for human development and is essential to the achievement of the internationally agreed upon development goals, including the Millennium Development Goals (MDGs). Many countries are experiencing e-government's transformative power in revitalizing public administration, overhauling public management, fostering inclusive leadership, and moving civil service towards higher efficiency, transparency, and accountability (Asaduzzaman and Rahman, 2011). Bangladesh, in particular, has significantly improved its e-government development scores and global ranking, though its expectations for e-government success have not yet been fulfilled. Considering the above-mentioned situation, the core question of this research is:

How do problems with e-readiness affect the implementation of e-government?

In light of the above question, this research also considers other relevant questions, as follows:

i. How do employees think about e-readiness and approach the implementation of e-government?

ii. How many e-readiness obstacles do employees face in implementing sound e-government?

iii. How do government initiatives help the employees achieve the implementation of e-government?

iv. Finally, how does the governing system direct the expected benefits of e-government?

On the basis of the main question, this research applies a qualitative research methodology. In terms of genre, the research is strategically a case study. Qualitative research usually collects data based on case study methods. In principle, data are collected through both primary and secondary means. Basically, qualitative researchers rely on four methods to gather information (Marshall and Rossman, 1999, p. 105).

(a) Participation in the setting,

(b) Direct observation,

(c) In-depth interviewing, and

(d) Analyzing documents and material culture.

The primary sources of data for this research were gathered through in-depth interviews. The interview samples were selected through a snowball system.

After the samples were selected, open-ended interview methods based on semi-structured questions were applied to collect the empirical data. In order to collect the secondary data, the research relied on different books, journals, seminar papers, web sources, records, etc. These sources will be elaborated in detail in the methodological chapter.

1.7   Structure of the research

This research work is configured in seven chapters. Chapter one describes the overall research idea, scope, and context. It also presents the background and literature review of this research, which pertain to the demands of the whole work. Finally, the research question and methodological direction have been outlined in brief.

Chapter two illustrates the comprehensive theoretical features of e-readiness for the success of e-government. This chapter highlights different criteria of e-readiness and the success factors of e-government. Here, the definitions of e-government, e-governance, and e-readiness are provided based on the process of the research outline. In addition, the success factors of e-government are elaborated.

Chapter three elaborates on the methodological approach of the research. Here, deductive and inductive analyses are compared in order to choose the direction of the work. Since this research is based on a case study, the case study approach is discussed in detail. The preferred technique for this research and the reason behind this choice are discussed. In addition, the measures of empirical description have been elaborated. Finally, in this chapter, the respondent selection process is clarified in detail (the number of respondents is given in chapter six).

Chapter four depicts the scenario of public administration in Bangladesh. Different administrative units are outlined, the policy systems of government administration are explained, and an overall administrative scenario is drawn. This chapter also labels selected cases for empirical data collection.

┌───┐
│   **Outline of the research idea and theoretical framework**   │
│   │
│   ┌───┐   │
│   │ **Chapter One:** Background and scope of the research.   │   │
│   └───┘   │
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│   │ **Inductive reasoning with a theoretical background**   │   │
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│   │
│   ┌──────────────────────────┐   ┌──────────────────────────┐   │
│   │ **Contextual analysis** │   │ **Empirical knowledge** │   │
│   │   │   │   │   │
│   │ **Chapter Two:** Theo-   │   │ **Chapter Five:** Scope, │   │
│   │ retical framework.   │   │ nature, and constraints │   │
│   │ **Chapter Three:** Re-   │   │ of e-government in   │   │
│   │ search methodology.   │   │ developing world.   │   │
│   │ **Chapter Four:** public │   │ **Chapter Six:** Empiri- │   │
│   │ administration in   │   │ cal data analysis.   │   │
│   │ Bangladesh.   │   │   │   │
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│   │ **End part and research scope for future**   │   │
│   │   │   │
│   │ **Chapter Seven:** Conclusion.   │   │
│   └───┘   │
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Figure 4. Overall research outline.

Chapter five describes the scope, nature, and constraints of e-government in developing countries, with an emphasis on Bangladesh. This chapter also outlines a clear scenario of e-government and describes the way in which the government has initiated this program without an appropriate strategy for successful application. The challenges of e-government in developing countries are outlined, with a primary focus on government of Bangladesh. Moreover, the projects and policies initiated by the e-government of Bangladesh are described.

The empirical portion of this research is analyzed in chapter six. This portion is based primarily on interviews and other empirical data. Here, the sequential outline of e-readiness for the success of e-government is given, based primarily on the process of matching the empirical data with the theoretical demands of the research.

In chapter seven, the empirical findings and conclusion are briefly discussed. Here, clear empirical findings are shown, and recommendations are presented. In addition, the theoretical contributions of the research are outlines. Finally, based on the research findings, suggestions for further research scope are provided.

2 THEORETICAL OVERVIEW

2.1 Introduction

When placed in front of a noun, the letter "e-" usually denotes the use of ICTs for the purpose to which the noun conventionally refers. For instance, "e-commerce" uses ICTs for commercial purposes; "e-learning" uses ICTs for education, and, in the same way, "e-government" stands for the use of ICTs in the sphere of government (Stahl, 2005). A huge need to ease operational processes has arisen in every conventional sector; therefore, the electronic or "e-" way has been contemplated as the leading solution. However, the electronic solution is not only to install ICTs; rather, both the providers (i.e. different sectors) and receivers (i.e. the clients of services) should be enabled to participate in the process. Proper application and rapid growth of ICTs may create opportunities for the private as well as the public sector to increase efficiency and effectiveness.

Developing and implementing a proper plan is necessary for the success of any program with inadequate resources in a developing country. It has already been mentioned that almost all of the countries in the world have initiated programs to make e-government successful. The top-ranked developed countries have positive growth in e-readiness towards e-government functionality (Sharma, 2004). The situation is reversed in the case of developing countries. In principle, developing countries still need more research on how e-government can be used. This research could also benefit the developing world by identifying the common problems behind e-government readiness so that proper initiatives for successful outcomes can be instituted.

The detailed theoretical elaboration in this chapter pertains to e-readiness for the success of e-government. This is empirical data analysis research in which the empirical data directs the expected theoretical background for the success of e-government in the developing world. Available theoretical analysis is discussed in this chapter. As groundwork, different theoretical genres of e-government, e-readiness, ICTs, approaches of government, and administrative patterns for the success of e-government will be elaborated here.

2.2 E-government and the systems of governance

The agenda of e-government is not simply to preset the administration with wider application of ICTs; rather, it is to escalate administrative responsibility with fairness, accountability, transparency, and neutrality in administrative processes (Anttiroiko, Bailey, and Valkama, 2011). After the introduction of e-government in the later part of 1990s, most governments all over the world started their journey towards integrating ICTs in the interest of achieving good governance. However, after more than a decade, it has been noticed that with many e-government initiatives, almost every country in the developing world has proved unable to attain its goals; otherwise, it seems that they have moved away from the correct e-government agenda. This scenario regarding e-government success is not unique to developing countries; it is a global phenomenon. However, in some parts of the developed world, the outcomes from e-government are not in the stage of pride almost everywhere in the world (Amoretti, 2007). The reason could be, on one hand, that countries have started their e-government reform agenda without specific goals, or, on the other hand, that the policies they adapt do not follow the local demands with international set of e-government reform agenda.

Theoretically, e-government has been undertaken to modernize traditional administrative systems. Recent trends reveal that the emphasis of e-government is to make a government not only transparent and accountable, but also effective through democratic practice at all levels (cf. Amoretti, 2007; Asaduzzaman, 2011). Successful democracy is possible only through greater participation of citizens and other stakeholders and through combating corruption, red-tape with unnecessary delay in services, and unnecessary hassle to access the government. However, as the American Society for Public Administration (2002) has mentioned in a study, most governments of developing countries still have traditional administrative systems with high levels of corruption, red-tape contributing to unnecessary delay of services, unnecessary hassle to get government services, and so forth.

In order to emerge from the ostracized way of administration and embrace democratic values, governments should focus on implementing some basic digital efforts using ICTs. This means that the efforts should facilitate the democratic process with an effective, transparent, and accountable government. In terms of digital efforts, the government should focus on both the practices and goals of e-government. The application should be based on the needs or demands of citizens as well. More specifically, the effort should be based on the targets of citizen's demand. Below are the keys to the applicability of digital efforts both inside and outside of government (as shown in Figure 5).
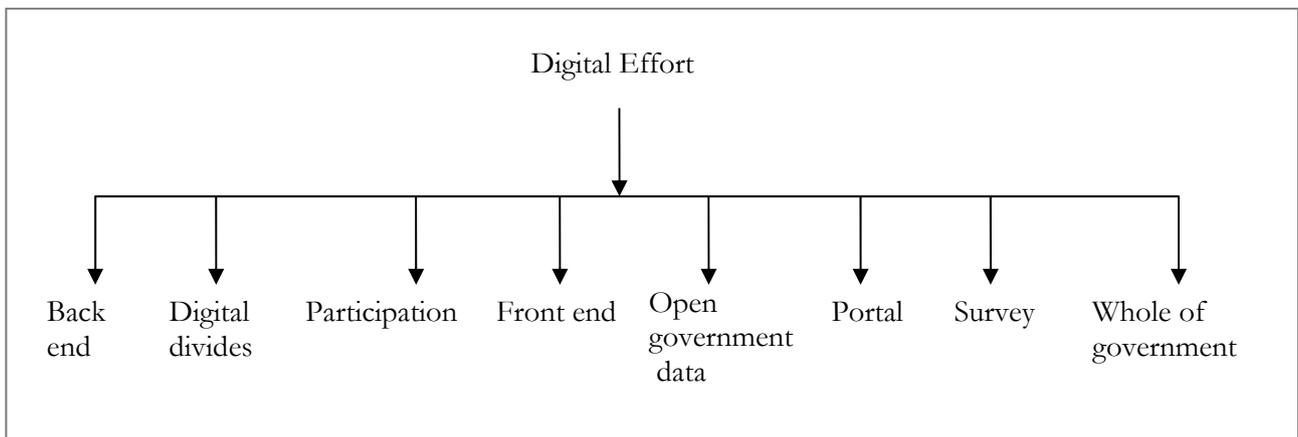
Figure 5. Digital efforts (cf. Ahmed and Khan, 2015)

The back end is the administrative organization and processes associated with e-government initiatives. This relates mainly to the reform effort of the public sector with digital divides to decrease the gap between those who are able to access, create, and use information through ICTs and those who are not. Digital divides serve mainly to support the front end through the open government data via portal. Here, open government is the availability of public-sector information (PSI) in a format that could be accessed and repurposed by users.

Portals are considered the most popular one-stop service points to facilitate primary website to access a particular segment of government information and service. Moreover, in order to make a portal function as a means of connecting a government with its customers and facilitating services both horizontally and vertically, the majority of the portal's features should be regularly monitored relative to research. Therefore, to continue the process of democratization and at the same time further social and economic progress, the government must ensure progress on the initiatives discussed above. Moreover, the needs and demands of local citizens must be prioritized and served accordingly. On the other hand, the government should define the ways in which it will act in the process of communicating with its external and internal stakeholders. For instance, the government should determine whether it is going to follow open models, reform-oriented models, or some other governing process.

In order to fulfill the above purpose, policy implementation is essential. Policies of e-government start primarily with the e-readiness of various areas of government operations (Heeks, 2002), which means various e-readiness components such as infrastructure, security, change management, and human resource competency (Aggarwal, 2009). At the same time, proper and regular e-readiness assessment exercises are necessary. However, these assessments cannot effectively address the opportunities and constraints identified for further development using ICTs unless proper process of implementations are appropriately maintained and executed.

Khan and Anttiroiko (2014) noticed that almost every part of the developing world is still administered by the traditional administrative system. However, they feel the need for change in their administrative culture and use ICTs for modernization and development.

2.3   ICTs reform effort for an effective and efficient administration

In the early stages of the development of bureaucracy, the efficiency and effectiveness of public administrations was different. In order to improve governance over time, administrative reforms, including the application of ICTs into the administration, have been implemented. In such cases, ICTs have been brought into contexts with restricted institutional features that affect the adoption process. The important part of the special nature of this context have been explained by Jain (2004), who outlined the three key features of bureaucracies:

1. Bureaucracies had a formal and clear-cut hierarchical structure of power and authority;

2. Bureaucracies had an elaborate, rationally derived and organized division of labor;

3. The governed process of bureaucracies was established by a general, formal, explicit, exhaustive, and largely stable set of rules that were impersonally applied in decision making. Furthermore, all decisions and communications were recorded in permanent files, and such records were used to refine existing rules and derive new ones.

Based on these features, we could say that bureaucracy in the early administrative age was designed to maximize administrative efficiency only. The idea was to guarantee that administrators perform their duties as efficiently as possible in the given institutional context. Nonetheless, interestingly, it looks as if bureaucratic organizational structures contradict e-enabled processes. Intense explanation has been given by Fountain (2001), who explained the different systems of logic of these two spheres; bureaucratic structure is vertical in nature, whereas e-government applications and processes are fundamentally horizontal.

Besides, modernizing public administration, use of the multifarious potential of ICTs has been constrained by various structural factors and cross-sectoral tensions. Considering the case of Bangladesh, it can be said that its public administration reflects the ideologies of a Weberian administrative system, and its administration works in the context of an elitist governance structure (Khan, 2003; Sarker, 2009). These administrative systems and structures undeniably affect the e-government agenda. In any case, with an intention to make the administration citizen- friendly and to promote the process of interaction between government and citizen, the government of Bangladesh started, in the latter half of the 1990s, an ambitious program aimed at introducing ICTs in all of its administrative procedures. However, one may question how the structural and bureaucratic conditions were likely to affect the design of e-government agenda and the attainment of this seemingly positive goal.

Additionally, it has been noticed that ICTs can enforce democratic values through horizontal communication within and outside the administration. Therefore, OECD (2003), just like most of the other

international think tanks, argued for several decades that e-government can be a major contributor to public sector reform. Internet-based technologies are, indeed, dominant tools in facilitating inter-organizational data exchange, in designing and implementing rationalization and reorganization programs, and in customizing public services to customers' needs (Cordella, 2007). The breakthrough, especially in democratic processes, has yet to be seen.

Consequently, it has been seen that e-government is a process of administrative modernization through making public agencies e-ready in order to deliver services to citizens and get their feedback (Mullner and Grimm, 2007) especially in the process of decision making. The administrative modernization processes intensify the efficiency and effectiveness among the administration (Schelong, 2009). The administrative modernization process can be outlined in the following way shown in Figure 6.
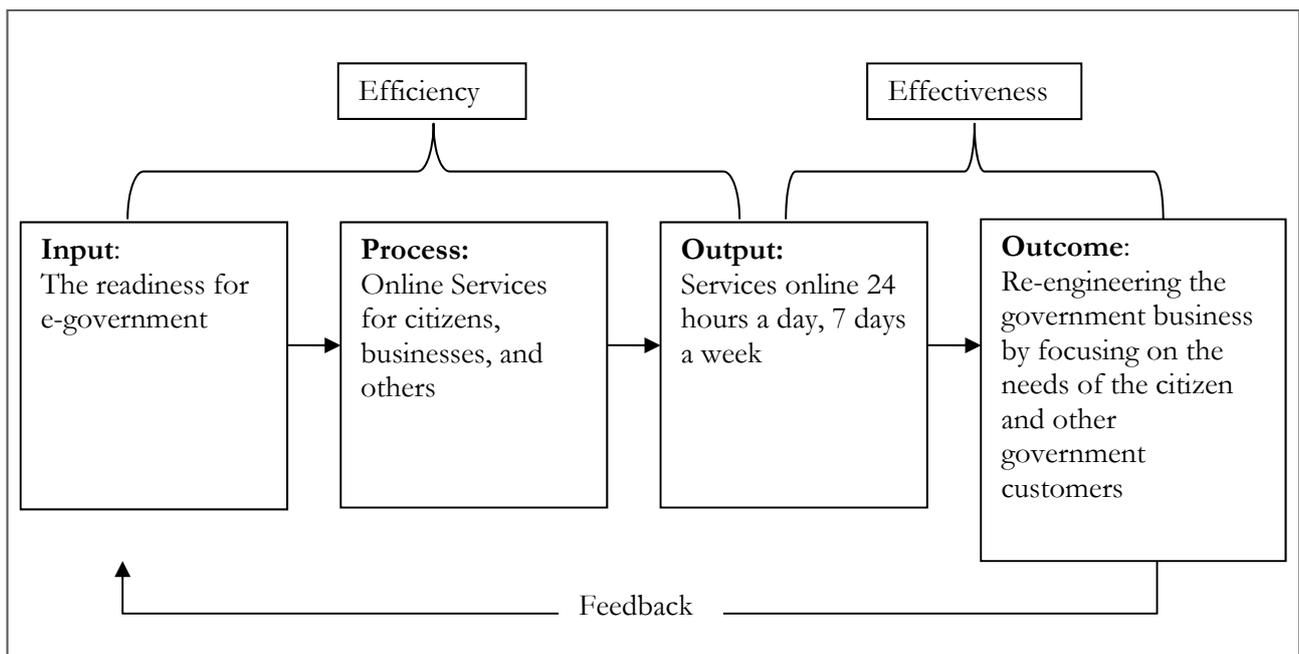
Figure 6. Process to make the administration efficient and effective with ICTs

However, all the possible benefits from e-government are unachievable without the proper applications and their implementations of different tools and techniques in favor of e-government readiness (Bridges.Org, 2005). That means the implementation process should be sound to get the maximum benefit from e-government development. Moreover, the efficiency and effectiveness of the administration and building new partnerships between the civil society, government agencies, and departments depends primarily on proper e-government readiness (Ndou, 2004).

2.4 E-government evolution converge with the purpose of the research

Technology has been considered the main evolutionary reform factor at various local, national, and global levels. Moreover, technologies, especially with the advent of Information and telecommunication along with widespread use of PCs (personal computer) in the public offices, have raised hope for e-government initiation. This application has strongly appeared in 1999-2000 (expressed as Y2K) because of rapidly expanding technological assets and their wider application in public administration (Brown, 2005). Figuring out when the term e-government came into prominence is difficult (Heeks and Bailur, 2006); however, in the field of

public administration, e-government was introduced in the later part of 1990s (Bhuiyan, 2009). To be more precise, the term "electronic government" was first used by the U.S in 1993 for the National Performance Review (NPR), and e-government was introduced broadly beginning in 1997 (Grande, 2002).

In the beginning, e-government was introduced as a form of electronic commerce to deliver services to the citizen 'online' (Brown, 2005). However, e-government is now a broad and well-accepted concept all over the world (Heeks and Bailur, 2006). There are academic degree programs (MSc) and annual conferences devoted to e-government all over the world, and articles on e-government are published in journals and books every year (ibid). Andersen (2006) has outlined a picture of the evolution of e-government, as shown in Table 1.

Table 1. Evolution of e-government by Anderson (2006)

Level	Period	Key Technology	Use of Technology
Cultivation	1970s-early 1980s	-Terminals -Centralized solutions	-Experts -Segmented use -In-house use
Seeding	Early/mid1980s-early 1990s	-Computers -Distributed computing -EDI	-Desktop use -Administrative use -Systems diffused -General use
Extension	Mid 1990s-early 2000	Internet	-Transactional view -Predefined and standardized services
Penetration	Present	-Mobile computing -WIFI -Access point	-Shifting ownership to external users -Digital entities

The concept of e-government is changing fast to cope with national and global demands. Moreover, e-government has shifted from in-house use towards external benefits. Schellong (2009) stated that e-government as a concept falls under the umbrella of the broad term "digital government." Schellong's typologies of digital government are depicted in Figure 7.
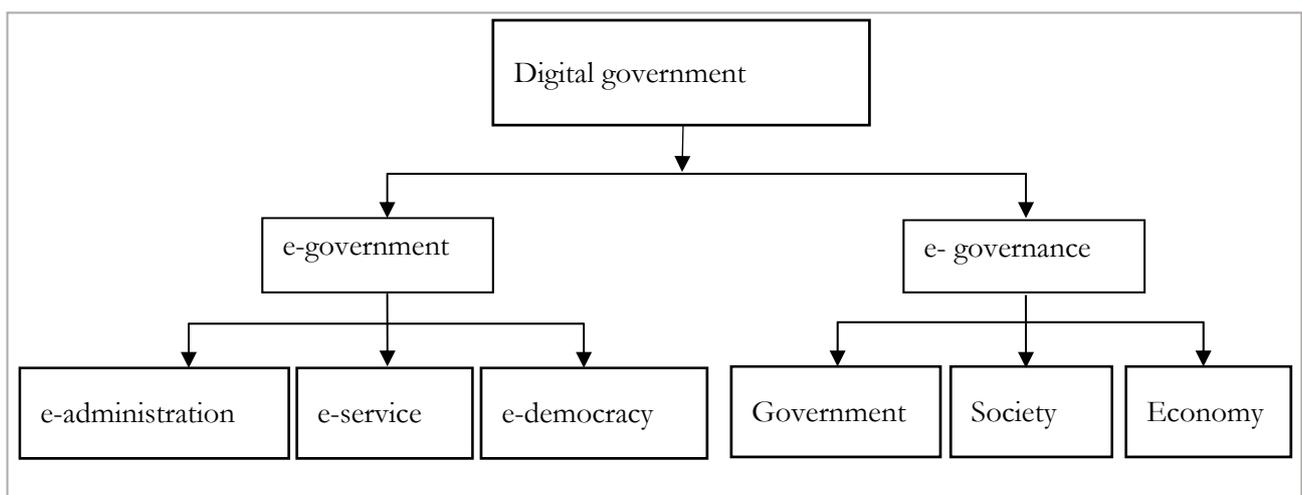
Figure 7. Typology of digital government by Schellong (2009)

It is known that digital government means the use of ICTs for improving citizen-government interactions through e-government to promote e-governance (McIver and Elmargarmid, 2002). In Figure7, Schellong has depicted that both e-government and e-governance are from the broad term digital government under which e-government facilitates e-administration, e-service, and e-democracy. At this point, it can be said that e-Administration is the main concept in his total process of e-government. For instance, when the administration is e-ready, it can provide seamless e-services, and through the availability of e-services, e-democracy will be promoted. On the other hand, e-governance promotes a broader relationship between government, citizens, and the administration (Grönlund, 2007). Similarly, International Telecommunication Union (2009) has outlined digital government as the umbrella term for both e-government and e-governance and distinguished them as follows:

- E-government is one aspect of digital government. E-government refers to the provision of governmental services by ICTs, particularly over the internet.

- E-governance refers to the use of ICTs for organization of political activity within and beyond nation states, for example, electronic or online or virtual democracy, online governance, e-participation, and e-deliberation.

According to Marche and McNiven (2003), e-government basically promotes the provision of routine government information and communication through the electronic means, more specifically, through internet technologies to facilitate services at home, at work, or through public kiosks. In the case of civic communication, policy evolution, and/or in democratic expression of citizen will, technology driven e-government enables building a relationship between citizens and their government.

Accordingly, Oakley (2002) has said that for both the easy reach of public services for citizens and the unbounded interaction between the government and citizens, e-governance is a technology-driven process to enable interaction and availability of services.

Therefore, e-government is the preparation for online government services, and e-governance is electronic services and the performance of government with a view to ensuring efficiency, effectiveness, transparency, accountability, and people's participation in governmental affairs. In brief, e-governance can also be defined as an Electronic State Management System based on ICTs, including technology.

The prime focus of this research is e-readiness of a government; here, the set-up for routine government activities will be emphasized. Additionally, from the perspective of e-government readiness, this research will recommend possible means for sound e-governance in developing countries.

2.5   Models of government affecting e-government readiness

Readiness criteria should include proper directions for gaining the full benefits of e-government. Since readiness for e-government promotes the process of democracy, the government should not focus only the application of ICTs. Moreover, e-readiness should have a specific goal of attaining the process of democracy via the openness of government functions and should establish proper communication processes between a government and its customers.

A strict, classical, hierarchical bureaucracy for the most part dominated the administrative mechanisms of government in a significant part of the nineteenth century. However, since the 1980s, change has begun through different reform efforts such as NPM. In order to transform the government from a routine workplace to a more business-minded, managerial model, the developed world has suggested private organizations as a supportive reform effort for administrative modernization (Osborne and Brown, 2005).

The main focus of NPM was to borrow private mechanisms to achieve efficiencies in service delivery. However, the delivery of services has remained the same--that is, old-fashioned--in most of the countries in the world. Likewise, very few countries in the world, more specifically few developed countries, have practiced the approaches of NPM (Anttiroiko and Narasimhalu, 2013).

In the1990s, e-government came into prominence and has been accepted by almost every country in the world. Consequently, many different countries have started e-government initiatives to modernize their administration. Some have tried to open government functions only; others have tried to reshuffle the process of NPM (Amoretti, 2007). In principle, it could be said that e-government has been incorporated into the existing models of governance, such as hierarchical model, rational goal model, open systems model, and self-governance model, through the application of ICTs.

In the hierarchical model, total control of policy development and implementation is maintained by following strict bureaucratic hierarchies. Here, relations between personnel and their authority to exercise power are maintained in a vertical order. The rational model disperses the power across a wide range of agencies rather focusing on the hierarchical model. This model is basically related to the NPM. On the other hand, the open system is more dynamic and can constantly be reshaped to respond to new challenges and demands. This model focuses on experimentation and innovation. Finally, the self-governance model focuses on the relationship between state and government rather than limiting notion of governance of action of the state only. Here, the role of civil society has been considered as pivotal for government action. The models will be easily understandable from Figure 8.
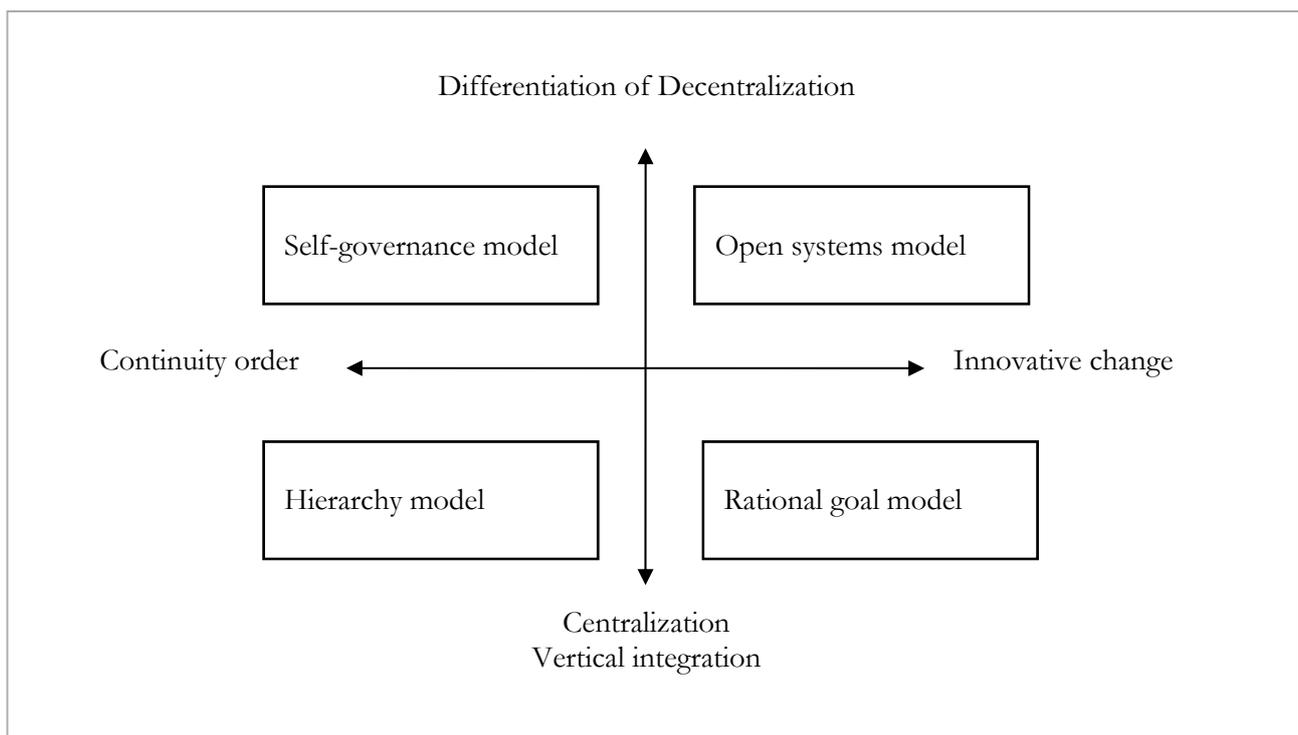
Figure 8. Approaches of traditional governance systems (Newman, 2001)

Now, that we have examined an overview of different e-government models, how these models of governance are incorporated to the notions of e-government can be made clear. Amoretti (2007) has mentioned four typologies in e-government models, such as reform-oriented e-government, authoritarian e-government, managerial e-government, and open e-government as depicted in Figure 9.

Reform-oriented e-government basically promotes the involvement of all social factors, including citizens and businesses. As we have seen, a traditional system of administration follows a vertical system of communication. Moreover, a traditional administrative system has been considered a rigid and one-way service-provider. Moreover, in this system, actors of different social sectors have been avoided or somehow neglected. Some countries have followed the traditional administrative system in a reverse way through which citizens can be encouraged to initiate policies in the case of public service by introducing a bottom-up approach, replacing the old top-down communication system approach.

On the other hand, authoritarian e-government does not shift power to the citizens or practice the process of democracy. Here, the central government mainly tries to establish a strong communication system with the local government so that the central government can more easily monitor work and force the local government to strictly follow its decisions. This seems a top-down approach of controlling the whole government system. The authoritarian system also controls the web from national and international access and favors administrative systems for the economic and social growth of the country.

It has been stated that (Osborne and Brown, 2005) the managerial form of e-government basically utilizes the management system of private organizations to improve the economy, efficiency, and effectiveness. The main approach of introducing 'e' into the form of managerial government is to reduce the cost of staff by introducing the application of e-government.

Finally, the open type of e-government mainly focuses on transparency, accountability, equity, and inclusion. The belief is that e-democracy is possible if the opportunity for equal participation rights can be ensured. After ensuring the participation of social actors, government mechanisms tend to be transparent and accountable. Ghosh, Glott, Krieger and Robles (2002) have suggested using open-source software within public administration with the slogans of "everyone can get insight," "everyone can give his or her contribution," and "everyone can change the result of decision." Moreover, open e-government combines with institutional practice with cultural ethos in a contemporary democracy in order to safeguard the fundamental entitlement of individuals, encourage e-participation through e-voting, and contribute to the process of drafting and implementing policies.
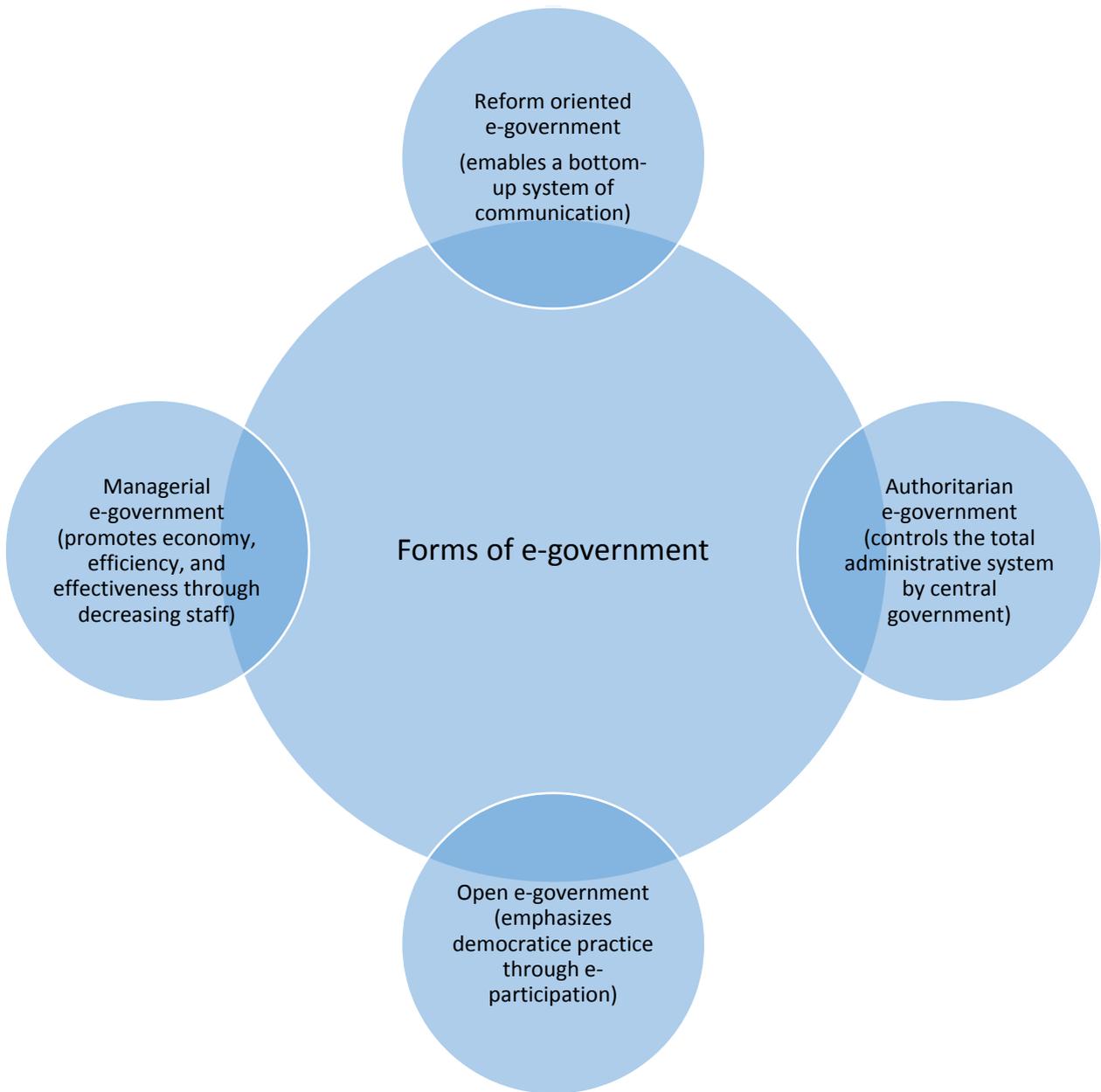
Figure 9. E-government regimes (Amoretti, 2007).

Similarly, Garson (1999) has depicted the purpose of e-government as covering four main theoretical areas, as outlined in Figure 10.
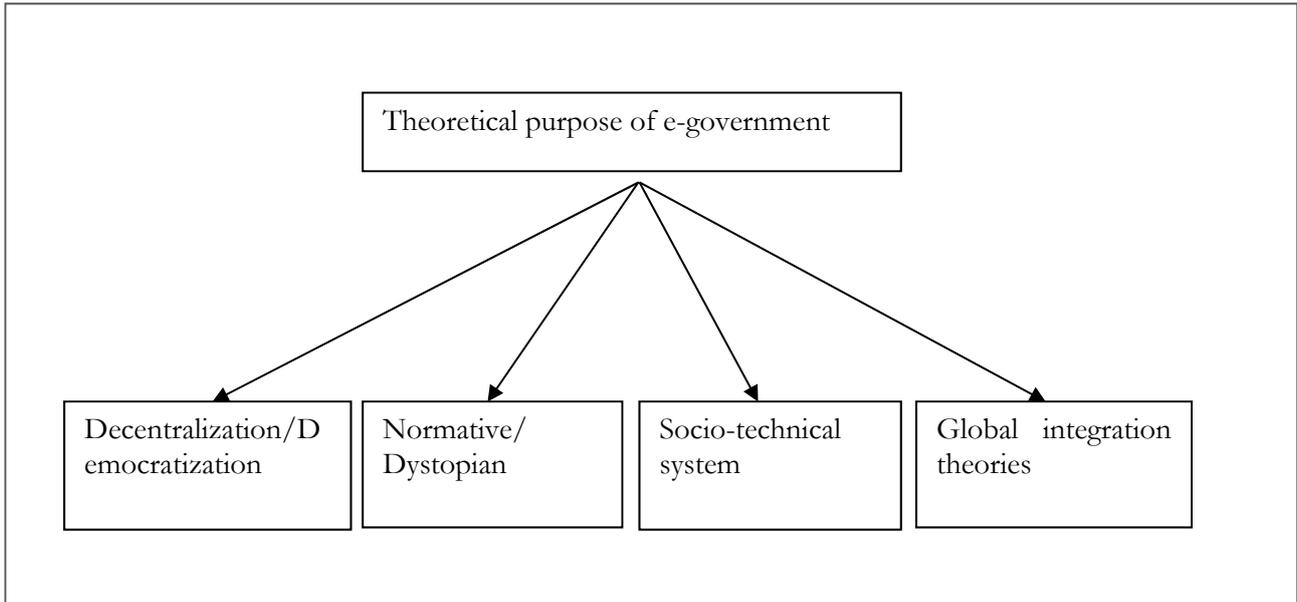
Figure 10. Theoretical purpose of e-government (Garson, 1999)

Here, the core focus of the theoretical area of decentralization/democratization is the use of technology to ensure a smooth link between the government and citizens. The normative/dystopian model emphasizes inherent technological limits and contradictions. Moreover, this theory draws primarily on the theoretical literature of e-government. Through the socio-technical system, a government may be able to respond to the changing environment with improved service delivery, increased efficiency, and reduced costs. Finally, global integration theories highlight that e-government should be in the real-world setting, which means removing traditional administration such as street-level bureaucrats from interacting with citizens and establishing computer-based non-discretionary technology models.

The application of ICTs has been, and still is to a certain extent, about securing the administrative power of the central government. Moreover, it has become the fastest method of communication between central government and local counterparts and helps in imposing decisions taken by the center. However, the actual goal of e-government is hampered and the outcomes of e-democracy fail because of the rigid practices of the administrative system. The political will along with the positive approach of employees in the public sector have been considered prime criteria for showing the actual benefits from the readiness of e-government (Andoh-Baidoo, Babb, and Agyepong, 2012).

As most of the developing countries are in the initial stages of their e-government reform agenda, this research has focused upon the area of e-readiness as a road to e-government. At this point, since the focus of this research is on the e-government readiness, the analysis of e-government and e-readiness will be discussed in detail.

2.6   E-government layout encompasses the research focus

As has been noted, "e" means electronic and has been amalgamated with the term "government" to make governmental functions smooth and ensure that expected benefits can be derived. Before laying out the research focus on e-government, here first the basic theme of government will be explained. Pardo (2000) has stated that government pursues the following essential objectives:

1. Maintaining collective security;

2. Administering justice;

3. Providing the institutional infrastructure of the economy; and

4. Ensuring that vital social capital is enhanced through improvements in health and education through the strong families and communities.

These are the roles that a government usually fulfills for the betterment of its citizen and the country as a whole. Further, to ensure smoothness and hassle-free government activities and services, ICTs may be installed. However, to elaborate upon the conceptual aspects of e-government more broadly, a sketch of the basic purpose of e-government by the readiness of ICTs into government must first be outlined.

Although e-government has become a world phenomenon and each government has begun to meet the challenges of its development, the full potential of e-government is still far from realized (Rabaiah and Vandijck, 2009). What was valid a few years ago in terms of services delivery, efficiency, and so forth may not be satisfactory today. According to the Working Group on e-government in the developing world (2002, p.2), "E-government is about transforming government to be more citizen-centered." Different scholars have turned their approaches for the term 'e-government' in different ways.

Gant (2008) has termed electronic government or e-government the smooth way to provide public services, to improve managerial effectiveness, and to promote democratic value through the use of information and communication technologies. According to Gant (2008), e-government also promotes the regulatory framework to facilitate information-intensive initiatives and fosters social knowledge.

Brown (2003) has vividly stated that electronic government is to enhance access to, and delivery of, government services to citizens, business partners, employees, and other government entities through the use of technology, or, more specifically, through web-based internet applications. Kottemann (2009) has observed that the technological antecedent for effective e-government require that at least two general issues be addressed. First, extensive ICT infrastructures must be planned and implemented (Davidrajuh, 2004), and second, citizens must have greater availability of access to e-government functionalities through ICT infrastructures (Wei, 2004).

Srivastava and Teo (2007) has outlined e-government as the use of ICTs and the internet to promote the ultimate goal of access to and the delivery of every kinds of government services and operations for its targeted groups that is, citizens, businesses, employees and other stakeholders.

According to Gil-Garcia and Pardo (2005), e-government unwraps two main opportunities for government, which are,

1. Increased operational efficiency by reducing costs and increasing productivity, and

2. Better quality of services provided by government agencies.

Given the above purposes, it is important to know that e-government is of interest not only to individual scholars or a research group; various donor organizations such as UNDP and World Bank have emphasized the issue as well. The reason for donors' interest in e-government is their support of the effort to reform the government, especially in the context of developing countries. In the case country and focus area of this research into e-service, the research has been initiated by both the government and UNDP. Currently, most of the developing countries and their administrations have been supported by donor agencies interested in

reforming approaches of administration (Khan and Alam, 2012). A lot of works on e-government have been carried out by donor agencies, and their contribution cannot be avoided.

World Bank (2011) views e-government more extensively and has stated that in order to transform interactions with citizen, business, and other stakeholders, the government should use information technologies such as wide area networks, the internet, and mobile computing. These multi-technology networks are used by huge number of people, even in the developing world, and could make possible a transparent, accountable, corruption-free, more convenient government that produces revenue growth, and/or reduces costs through better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management.

The U.S. E-government Act (2002) has described electronic government as the use of web-based and other technologies to

a) Enhance the access to and delivery of government information and services to the public, other agencies, and other Government entities; or

b) Bring about improvements in Government operations that may include effectiveness, efficiency, service quality, or transformation.

The United Nations and the American Society for Public Administration (2001) have depicted e-government more intensively like the World Bank in saying that electronic government would have to use all information and communication technologies ranging from fax machines to wireless palm pilots to cover the daily administration of government. Moreover, they have observed that e-government is the commitment of government to improving the relationship between the private citizen and the public sector through enhanced, cost-effective, and efficient delivery of services, information, and knowledge, through which citizens' participation in government processes would be ensured and citizens and other stakeholders would be satisfied with the processes.

All the above approaches to e-government emphasize a common set of issues:

o Firstly, the readiness of ICTs to transform various services to its customers, stakeholders, and so forth in a fast, efficient, and cost-saving way offered by the public sector; and

o Secondly, e-government increases the effectiveness, efficiency, and transparency of the public sector through decreasing corruption, red tape, and other malpractices.

Despite the use of different terms by different scholars, almost all the cited definitions include the same e-government perspectives such as the application of ICTs and provision of hassle-free governmental services to stakeholders. So, it could be said here that the application of ICTs, as a marker of the readiness of e-government, is to promote e-governance.

However, the compact form of different writers' research cannot explain the broad conceptual framework of e-government, for example, how e-government would be developed, where exactly the focus should be, and what the generated outcomes from the application are. In order to establish a clear conceptual framework, some researchers (e.g., Ghorbani and Sarlak, 2011; Hosseini and Ghorbani, 2009; Sarlak and Ghorbani, 2012; Sarlak, Hastiani, Dekhordi, and Ghorbani, 2009) have recommended tri-categories such as context, content, and the creation process, for an e-government framework.

Context takes into consideration the general condition, for example, organizational culture, electronic knowledge of employees, technological requirements, and administrative maturity of the realization of e-government. On the other hand, the creation process indicates the method of determining the progression of

content where content is the general indicator of e-government assessment, such as efficiency, citizen relationship management, electronic trust, and e-justice. The creation process relates to policy-making, developing strategy, identifying expected functions, identifying critical success factors and barriers to developing architectural structure, selecting methods of implementation, and evaluating results (Dehkordi, et. al., 2012).

Besides different e-government models and the administrative functionalities in mainstream e-government approaches, the focus of this research encompasses this tri-process e-government framework. Both the policy and the process of e-government application have a great effect on the content, or, in other words, on the outcomes. If proper policies have been adopted and if the proper implementation process under those policies has been maintained, then the positive outcome logically follows.

2.7 Conceptual categories and the challenges of e-readiness for e-government

The conceptual framework of e-government is combined with the context: the e-readiness, through the creation process; policies and strategies, to achieve the content; the efficiency and effectiveness of the administration and its government. The content of e-government is far from successful. First of all, there must be smooth policies and strategies of government for the applications, and then, under those policies, the execution process must be followed. Moreover, the policies and strategies should align the international agenda with the expected national goals. Otherwise, the operation will result in a big loss for the government.

For the smooth online operation of the functions of different sectors such as education, business, health, and government, e-readiness is important. This readiness is for both the provider (i.e. the different sectors mentioned above) and the receiver (i.e. individuals and the communities). This research discusses the government's readiness for e-government based on the application of ICTs. It is important to know that readiness for ICTs is the basic means for e-government (Vaezi and Bimar, 2008).

On one hand, scholars have shown that e-commerce is successful if consumers buy products online, but on the other hand, the success of e-government very much depends on available citizen access to the technologies such as infrastructure, training, and supportive government policies (Dada, 2006). However, the success of e-government primarily depends upon the digital preparation of the government (ASEAN Secretariat, 2009).

E-readiness (Dada, 2006) favors the application of ICTs in the process of electronic communication. This e-readiness or electronic readiness has been developed worldwide through the rapid penetration of the internet into the public as well as the private sector (Mutula, and Brakel, 2006; Kottemann, 2009). It is worth mentioning that e-readiness is becoming an essential part of government, or, more specifically, essential to the ability of government and its administration to provide seamless e-services (Aggarwal, 2009).

As the spreading of the internet and ICTs in the public sector and its administration is not very old, here it is important to know that ICTs and the internet are not the only requirements of e-readiness; rather, other factors such as ICT training, ICT policy, human resources, computer literacy, and literacy in relevant ICT materials including internet connectivity, internet access, network speed, and so forth (Mutula, and Brakel, 2006) are necessary for e-readiness.

Although it is assumed that e-readiness is essential for the development of government and for its administration to convert from the paper-based to electronic operations, substantive attention has been paid only recently (Kottemann, 2009). During the latter part of 1990s, e-readiness received substantive attention from almost every nation pursuing administrative modernization (Mutula, and Brakel, 2006; Kottemann, 2009). Moreover, the concept of e-readiness was originated to provide an integrated framework to evaluate

the width and depth of the digital divide between more and less developed or the developing countries in the world. Eventually, in 2001, Bridges.org identified more detailed e-readiness tools (Dada, 2006).

2.7.1   Research on the meaning of e-readiness

After the concept of e-readiness was introduced, there were several efforts to make the meaning clearer. The first one was considered by CSPP (Computer Systems Policy Project) in 1998 when it developed the first e-readiness assessment tool known as the "Readiness Guide for Living in the Networked World." According to Peters (2001. p.4), CSPP considered e-readiness as follows: "an 'e-ready' community has high-speed access in a competitive market; with constant access and application of ICTs in schools, government offices, businesses, healthcare facilities and homes; user privacy and online security; and government policies which are 'favorable to promoting connectedness and use of the network'"

In a broad sense, Bridges.org (2001; 2005) has explained that for a society to be e-ready, operations must have the necessary physical infrastructure (high bandwidth, reliability, and affordable prices), and these physical infrastructures must be integrated with the current ICTs throughout businesses (e-commerce, local ICT sector), communities (local content, many organizations online, ICTs used in everyday life, and ICTs taught in schools), and the government (e-government). The ultimate benefit of these is to create strong telecommunications competition, independent regulation with a commitment to universal access, and no limits on trade or foreign investment.

According to the United Nations' e-government readiness survey (United Nations, 2004), e-readiness is the willingness and readiness of the government in public sectors through ICT infrastructures and human resource development.

According to Aggarwal (2009) e-readiness includes components such as infrastructure, security, change management, and human resource competency to promote the ability of a country to provide seamless e-services. Scholars have also has elaborated on the degree of e-readiness as key to reaping the benefits of a network and its connectivity for everyone, everywhere in the networked world through a community (Shareef, Ojo, and Janowski, 2008). Bui, Sankaran, and Sebastian (2003) have examined the markers of e-readiness and their focus area given by different organizations as described in Table 2.

Table 2.   E-readiness definitions and their areas of focus

Main focus areas	Definitions	Source
Value creation	"Ability to pursue value creation opportunities facilitated by the use of the Internet"	Center for EBiz Talk, MIT
Promotion of free trade, regionally and internationally	"A country that is 'ready' for e-commerce has free trade, industry self-regulation, ease of exports, and compliance with international standards and trade agreements"	APEC
E-society	"An 'e-ready' country has extensive usage of computers in schools, businesses, government, and homes; affordable reliable access in a competitive market; free trade; skilled workforces and training in schools; a	McConnell International

	culture of creativity; government-business partnerships; transparency and stability in government and an evenly enforced legal system; secure networks and personal privacy; and regulations allowing digital signatures and encryption"	
Facilitation ofe-commerce	"An 'e-ready' country requires consumer trust in e-commerce security and privacy; better security technology; more trained workers and lower training costs; less restrictive public policy; new business practices adapted to the information age; and lower costs for e-commerce technology"	WITSA

An in-depth analysis reveals that the following are the three main component of e-readiness:

1. ICT infrastructures;

2. The process of ICTs application (e.g., how ICTs are disseminated for e-government), and

3. ICTs workforces through extensive training.

Now, in order to elaborate on the effort involved in e-government readiness, this research will turn to the broad purpose of e-government, the level of e-government maturity, tools and techniques, the required training, and other e-readiness factors.

2.7.2   Purposes behind e-government readiness

Like many other sectors e-readiness in government and its administration, in the form of e-government, has appeared prominently all over the world. Since the concept of e-readiness was introduced, different organizations have worked to make it more pragmatic. However, systems of government and its administration are not same all over the world, meaning that, for instance, what is good for most developed countries may not suit developing or less-developed countries. The necessary tools and techniques are also not same in developed and developing countries. Further, it is worth mentioning that massive e-government initiatives in some developing countries have not provided the expected outcomes. So, from these perspectives, determining the concrete e-readiness demand for successful implementation of e-government is very important.

Seifert (2003) reported a study on e-government under the Congressional Research Service (CRS). In this study, he emphasized that among the various activities and actors of e-government, the most important e-readiness factors consist of the following (Figure 11) interaction processes:
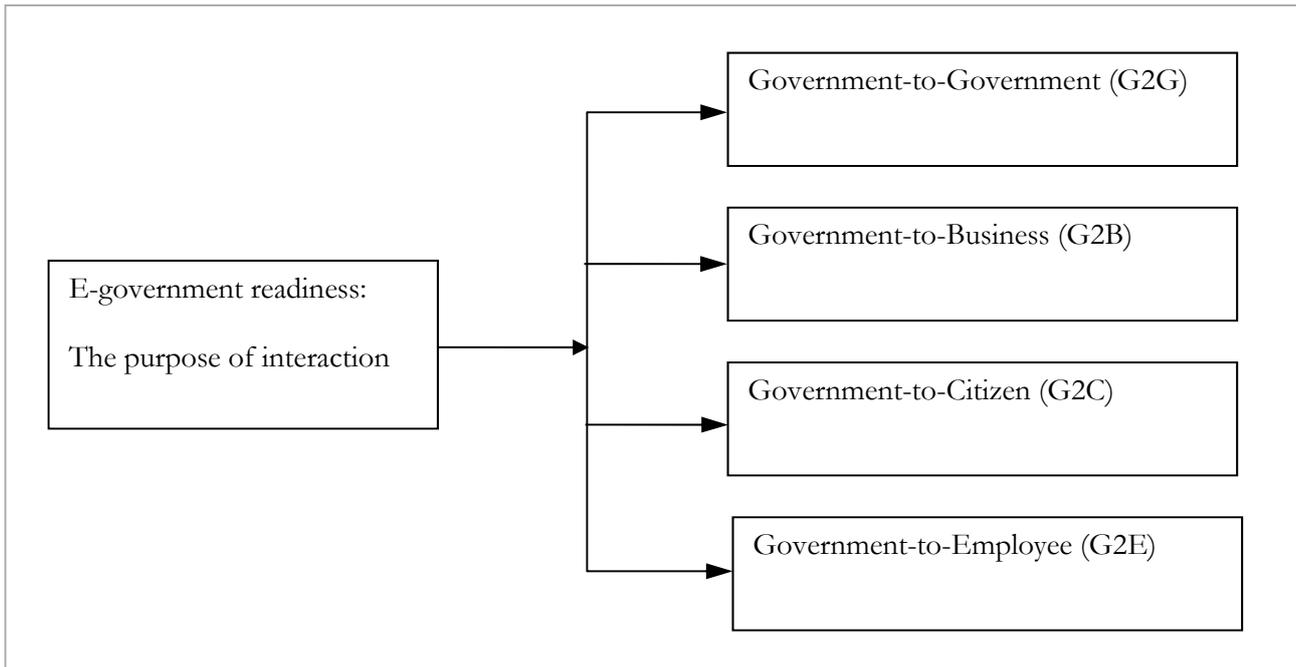
Figure 11. E-government Interaction process

Transaction from government to government, in many respects, has been considered one of the main parts of e-government. The government must enhance and update its own internal transaction systems and procedures (Lee, Tan, and Trimi, 2005). Otherwise, transactions with the citizens and businesses would fail. That is why this interaction process has been considered a key step of government. Two important concepts have been emphasized here:

1. To achieve the highest interaction between the different organs of governments, the readiness and the change of attitude of traditional, paper-based systems should be boosted, and

2. The government mechanisms should be trained in the proper manner to cope with the positive technological change for positive technological operations.

One of the main tasks of the government is to maintain communications between different business sectors. For this reason, G2B initiatives have received a significant amount of attention. The government has many goods and services to procure. Although not every kind of procurement directly depends on the ICTs, the interaction process plays a vital role in G2B systems of transaction.

The third sector of interactions is G2C. G2C initiatives are designed to facilitate citizen interaction with government, which some researchers have perceived to be the primary goal of e-government. Moreover, the purpose of G2C is to adopt easier and faster means for transactions such as renewing licenses and certifications, paying taxes, and applying for benefits. These transactions should be made very effective with a "one-stop shopping" site to promote smooth interactions. Eventually, the G2C interaction could be expanded so that a citizen-to-citizen interacting process could be facilitated, and through the breakdown of time and geographic barriers, more citizen participation in the government could be ensured. In other words, the main agenda of theG2C interaction process is to connect people from all over the world without barriers.

Some observers have emphasized the fourth sector of interaction, which is Government to Employee (G2E). Seifert (2003) stated that an employee is the part of government, so it is not necessary to describe employees separately. However, not all agree with this statement. Node (2004) cited G2Eas an important

process of interaction between the government and its employee that needs special attention. Through this process, learning and sharing important data among employees is possible. This process of interaction is very important, and employees must be made ready for the process of interaction through necessary training. Eventually, if the proper interaction process is built among employees, then they understand policies and be aware of available and ongoing trainings inside the organization to develop their skills. On the other hand, Hiller and Belanger (2001) have elaborated a readiness framework for e-government that operates the following functions:

1. Government delivering services to individuals,

2. Government to individuals as part of the political process,

3. Government to business as a citizen,

4. Government to business in the marketplace,

5. Government to employees, and

6. Government to government.

Different stages of e-government are outlined in more detail along with examples in Table 3. So, here it can be said that the functions of government are vast, and the communication processes involved are wide. The introduction of e-government is to leverage the wide and vast functions of government.

Table 3. Electronic government framework with examples

Stages of e-Government						
		Administrative functions				Political functions
	Types of Government	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
		Information: dissemination catalogue	Two-way communication	Service and financial transaction	Vertical and horizontal integration	Political participation
Internal	Government to government	Agency filing requirement	Requests from local governments	Electronic funds		N/A
	Government to public employees	Pay dates, holiday information	Requests for employment benefit statements	Electronic paychecks	One-stop job, grade, vacation time, retirement information	N/A

External	Government to individual-services	Description of medical benefits	Request and receive individual benefit information	Pay taxes online	All service and entitlements	N/A
	Government to individual-political	Dates of elections	Receive election forms	Receive election funds and disbursements	Register and vote: federal, state, and local (file)	Voting online
	Government to business-citizen	Regulations online	SEC filings	Pay taxes online, receive program funds (SB, etc.)	All regulatory information on one site	Filling comments online
	Government to business-marketplace	Posting request for proposals	Request clarification or specs	Online vouchers and payments	Marketplace for vendors	N/A
Technologies Used		Basic web-technology bulletin boards	Electronic data interchange, email	Electronic data interchange, electronic filing system, digital signature, interoperable technology, public key infrastructure	Integration of the technologies required for phase 1, 2, and 3.	Public key infrastructure, more sophisticated interface and interoperable technologies, chat rooms

2.7.3 Expected levels of e-government and the way to hasten the process

It has been pointed out that the primary function of e-government is to ease government functions for its different customers. Moreover, the functions should be set up in such a way that e-government improves the system of governance to promote the process of democracy and gain economic benefits in the long run. In order to improve the process of democracy by improving efficiency and effectiveness in the public sector, various readiness dimensions of e-government should be addressed. It would be worth to mentioning that, as ready for e-government as a government is, the government could serve their functions in a more matured way. ASPA (American Society for Public Administration, 2001) has revealed that e-government could be matured through the following five stages, as shown in Table 4:

Table 4. Levels of e-government's maturity

Stages	Orientation	Services	Technology	Citizens
Stage One: Emerging Web Presence	Administrative	Few, if any	Only Web	Going it alone

Stage Two: Enhanced Web Presence	Administrative, Information	Few forms, no transaction	Web, e-mail	Links to local agencies
Stage Three: Interactive web Presence	Information, Users, Administrative	Number of forms, online submissions	Web, e-mail, portal	Some links to state and federal sites
Stage Four: Transactional Web Presence	Information, Users	Many forms and transactions	Web, e-mail, digital signatures, PKI (Public Key Infrastructure), portals, SSL (Secure Sockets Layer)	Some links to state and federal sites
Stage Five: Seamless Web Presence	Users	Mirror all services provided in person, by mail and by telephone	Web, e-mail, PKI, digital signatures, Portal, SSL, and other available technologies	Crosses departments and layers of government

Scholars (cf. Layne and Lee, 2001; Baum and Di-Maio, 2000; Ronaghan, 2001; Hiller and Belanger, 2001; Wescott, 2001) have examined and explained e-government maturity. Although the explanations are more or less the same compared to the models given by the ASPA, some scholars have produced a more elaborate, six-step model. The following Table 5 will make the models clear.

Table 5. Steps of scholars' models for e-government maturity (Coursey and Norris, 2008)

	Step 1	Step 2	Step 3	Step 4	Step 5	Step 6
Layne and Lee, 2001		Catalogue	Transaction	Vertical integration	Horizontal integration	
Baum and Di-Maio, 2000		Presence	Interaction	Transaction	Transformation	
Ronaghan, 2001	Emerging presence	Enhanced presence	Interactive	Transactional government	Seamless	
Hiller and Belanger, 2001		Information dissemination	Two-way communication	Integration	Transaction	Participation
Wescott, 2001	E-mail and internal network	Enable inter-organizational and public access to information	Two-way communication	Exchange of value	Digital democracy	Joined-up government

If we review the above stages of e-government maturity in general, it is clear to us that the beginning of the e-government maturity stage represents information that is limited and basic. Here, a government web presence has been established through an official website of a national portal or an official home page. Little archived information such as a head of state's message or a document such as a constitution may be available online. Different links to ministries/departments of education, health, social welfare, labor, and finance may exist, as well as links to regional/local government. However, most of the information remains static. The second matured stage offers some enhanced capabilities, although e-government efforts are still limited to providing one-way information to the public. At this stage, the government may provide sources of current and archived information, such as policies, budgets, laws and regulations, reports, newsletters, and downloadable databases. Facilities for user search for a document, help, and a site map are provided. On the public participation side, a greater menu of relevant government documents may be available such as strategies and policy briefs on specific issues. Although the stage seems to be more sophisticated, the interaction is still primarily unidirectional, that is, from G2C.

In contrast, stage three is more sophisticated; in it, e-government provision of online public services enters an interactive mode with services to boost the convenience of the users. These may include downloadable forms for tax payment, applications for license renewal, and so forth that need to be printed but may be mailed back to an agency--a task that traditionally could be carried out only by making a trip to the agency concerned. Here, audio and video capability are provided for relevant public information. Government officials can be contacted via e-mail, fax, telephone, and post. The site can be updated with greater regularity to keep the information current. The government at this stage has not employed e-government to inculcate full citizen participation, though some form of input from the public is admitted through provision of e-mail and other contact information for simple questions.

The fourth stage in the evolution of e-government initiatives permits users to complete entire tasks electronically at any time. Backed by simple, user-friendly instructions, these electronic tasks eliminate the need for the physical presence of users or utilization of means other than electronic for paying taxes or applying for ID cards, birth certificates/passports, license renewals, and other similar C2G interactions by allowing users to submit these online 24 hours a day, seven days a week. Users are able to pay for applicable public services or expenses (e.g., fines for motor vehicle violations or taxes, or fees for postal services) through their credit or debit cards. Secure links are provided for e-procurement facilities, with providers of goods and services able to bid online for public contacts. Stage five is the highest mode of e-government initiatives in the schema characterized by the ASPA for an integration of G2G, G2B (and its reverse) and G2C (and its reverse) interactions. Here, the government is not only willing but also able to involve the society in a two-way dialogue. Through retaining the use of web comment forms and innovative online consultation mechanisms, the government actively solicits the views of people acting in their capacities as consumers of public services and as citizens. Implicit in this stage of the model is the integration of consultation and collective decision-making.

Granted the maturity stages provided by ASPA, some scholars (cf. Hiller and Belanger, 2001 and Wescott, 2001) have given one more stage to make the application supportive for the citizen. In this stage, they want strong citizen participation to line up with the government. Eventually, the target is to promote the overall efficiency, effectiveness, transparency, and accountability of government in every maturity stage. In principle, the maturity of e-government is not possible overnight. To make this initiative a successful one, there are so many challenges (i.e., e-readiness, ICT, human resource, government openness etc.) behind the applicability and benefit gains (e.g., accountability, transparency, easy access to government services etc.). It has been mentioned that along with other factors, this research emphasizes the three most basic criteria of e-government readiness: infrastructure, human resources, and a change in the approach of management. The

following analysis will define the best path of e-readiness to derive the utmost benefits from the levels of e-government maturity.

2.7.4   Approaches to achieving readiness for e-government

In order for e-government to be successful, the readiness criteria and their proper method implementation are necessary. CID (2000) has revealed that for the proper implementation of ICTs in government agencies, different categories, such as network access, network learning, network society, network economy, and network policy, must be met up. Network access refers to the availability, cost, and quality of ICT networks, services, and equipment. This means that before initiating a plan for ICTs, an organization should know how to achieving the highest benefits from it. An organization should have an educational system that integrates ICTs into its processes to improve learning and technical training programs in the community. Proper training is essential for changing the mentality of employees from traditional administration to a reformed administrative process. Along with the integration of ICTs, societal progress is important. The society, especially the people who receive benefits from e-government initiatives, should be ready for e-government. When the government and the society are ready for e-government, economic and other benefits can be gained. Accordingly, in order to derive the benefits, policy levels should be favorable for the growth of ICTs and societies as a whole.

GeoSINC International (2002) has given general approaches for e-readiness and their phases of implementation. Although the approaches vary from country to country, most of the developing countries suffer difficulties in the implementation phase. The general approaches provided by GeoSINC International (ibid) are access and connectivity; training, education, and public awareness; government leadership; and social development.

Access and connectivity are essential to the existence of networks, and if they are deficient, there is little point in moving on to the next focus area. On the other hand, training, education and public awareness are one of the main barriers to network development in many developing countries. The internet is, after all, based on the written word, and mainly in English, although this language limitation is changing rapidly. Government leadership is often the main trajectory of network development in developing countries. Its laws and regulations are often the cornerstone of a fast and successful implementation. New emerging markets are therefore created, opening new economic sectors with new windows of opportunities. Business and private sector initiatives are key to the fulfillment and proper deployment of networks and will provide constant backing for the pursuit of readiness objectives. Initiatives from this sphere will be driving the readiness of the country. Social development builds on the result of initiatives taken in the other areas but should also be promoted through specific interventions if the internet is expected to contribute significantly to the alleviation of poverty.

In order to explain the phases of implementation, GeoSINC International (ibid) has said that before initiating an e-government program, there is need to assess matters such as how the program will be initiated, what its purposes are, how the purposes will benefit society, and how the country as a whole relates to the program. After assessing the program, there should be a clear strategy to run it. Finally, there should be a clear view of how the action plan will be implemented. That means that the goal should be defined before automating the process of administration. Moreover, proper knowledge should be gained for further e-government development. Choucri, Maugis, Madnick, and Siegel (2003) have illustrated the domains and clusters of e-government readiness, as shown in the following chart (Table 6).

Table 6.   Domains and clusters of e-readiness

E-readiness domains and clusters	
Domain	Cluster
1. Access	(a) Infrastructure (b) Services
2. Capacity	(a) Social factors (b) Economic factors (c) Policy factors
3. Opportunities	(a) Opportunity penetration (b) Specific applications

Here, domains are interdependent. If access is fulfilled, then capacity will come under consideration. Similarly, when both of them are fulfilled, then the next step of value creation opportunities can be pursued. For instance, we can say that if access (the infrastructure for the available services) is ready, we can pursue the capacity (the name of government services online), and then e-government or e-governance will be promoted as the opportunity of the access and the capacity.

According to Kottemann (2009), e-government functionality has been targeted by the readiness of technological, institutional, and fiscal issues. In terms of the readiness of technical issues, he has considered that in order to ensure e-government, a nation's citizen must have access to ICTs. This is the Technical, or, in short, t-readiness. The five most important variables to in t-readiness are internet, PCs, cellular phones, landlines, and broadband. Institutions must also have effectiveness and efficiency to serve their functions so that citizens can get the services very easily. Two important principles should be considered here in institutional readiness: first, government functions should be effectively done, and second, unnecessary complexities should be avoided. Moreover, in order to support technological and institutional readiness, fiscal readiness is crucial. If fiscal readiness is not properly initiated, two main problems could arise: first, the process and procedure for e-government through hardware and software will be interrupted and; second, overall need for e-government will be abridged.

Since, this research is based on e-government and its readiness, it is important to note that public officials mostly serve e-government applications. However, management faces a lot of challenges concerning their efficiencies. The most significant challenges are providing the culture of teamwork, innovation, and change; education of executives and managers; collaboration and integration efforts; skill and experience; and diversity and complexity of existing operational process. Therefore, managers should encourage staffs to develop their skill set to understand how to leverage internet tools, develop mechanisms to ensure responsibility and accountability for planning initiatives, access impacts as they relate to government outputs and outcomes, and understand how program specifications and requirements drive e-government developments.

Ebrahim and Irani (2005), have summarized various thinkers' views of the challenges of e-government readiness, as shown in Table7.

Table 7. Classification of e-government barrier

Dimension	Examples	Reference
IT infrastructure	Shortage of reliable networks and communication Inadequate network capacity or bandwidth Lack resources standards and common architecture policies and definitions Existing system are incompatible and complex Existing internal system have restrictions regarding their integrating capabilities Lack of integration across government systems Integration technologies of heterogeneous databases are confusing Lack of knowledge regarding e-government interoperability High complexity in understanding the processes and systems in order to redesign and integrate them Lack of enterprise architecture Availability and compatibility of software, systems and applications Lack of documentation especially in the case of custom systems	Dillon and Pelgrin (2002) Fletcher and Wright (1995) Heeks (2001) Layne and Lee (2001) McClure (2000) Moon (2002) NECCC (2000) Themistocleous and Irani (2001)
Security and Privacy	Threats from hackers and intruders Threats from viruses, worms and Trojans Absence of privacy of personal data High cost of security applications and solutions Unauthorized external and internal access to systems and information Lack of knowledge for security risks and consequences Assurance that transaction is legally valid Lack of security rules, policies and privacy laws Inadequate security of government hardware and software infrastructure Lack of risk management security program Unsecure physical access to building or computer rooms	Gefen et al. (2002) Joshi et al. (2001) Lambrinoudakis et al. (2003) NECCC (2000) Robins (2001) Zeichner (2001)
IT Skills	Lack of IT training programs in government Shortage of well-trained IT staff in market	Bonham et al. (2001) Heeks (1999)

	Lack of employees with integration skills	Ho (2002)
	Developing web site by unskilled staff	Layne and Lee (2001)
	Unqualified project manager	NECCC (2000)
	Shortage of salaries and benefits in public sector	
	Flow of IT specialist staff	
Organizational	Lack of coordination and cooperation between departments	Burn and Rbins (2003)
	Lack of effective leadership support and communication amongst senior public officials	Heeks (1999)
	Unclear vision and management strategy	Lenk and Traunmuller (2000)
	Complex of business processes	Li and Steveson (2002)
	Politics and political impact	Themistocleous and Irani (2001)

Challenges of e-government readiness are similar in the developed and developing worlds. Different scholars have outlined some specific challenges for developing countries.

According to Ndou (2004), while it is evident that in general, e-government and ICTs are the foremost drivers of wealth creation and economic growth, there are many challenges that hamper the exploration of the opportunities of e-government in developing countries. The most important challenge is the readiness of ICT infrastructures; this has considered the main challenge for e-government in developing countries. Digital divides are not available in developing countries, or the available divides are not properly planned, administered, and executed for the establishment of e-government. Moreover, e-government principles and functions require a range of new rules, policies, laws, and legislative changes to address electronic activities such as electronic signatures, electronic archiving, freedom of information, data protection, computer crime, intellectual property rights, and copyright issues. In most cases, rules, policies, and laws are not available or not properly planned, administered, and executed for sound e-government activities. Additionally, in order to manage online processes, functions and customers, and technological skills, it is very important to maintain ICT through a proper design and implementation process. Since the growth of administrative changes has increased with new technology, practices and competitive models, lifelong learning is important as well. In most developing countries, these are not yet properly implemented. The change of management approach and their officials resistance to change are still the biggest barriers to the success of e-government in most developing countries. In order to leverage the e-government development process, collaboration and cooperation between public and private organization as well as between citizens at different levels (i.e. local, regional and national) is important. This collaboration and cooperation is missing in most developing countries. Another important factor is e-government strategy. Strategies of e-readiness are not carefully, analytically, and dynamically planned, administered, and executed by the government in order to implement sound e-government, in most developing countries. Finally, the leadership role is very important. OECD (2001) has discussed expectations for reforms in situations in which leaders are confused with changing and obscure visions. Resistance to the initiation of change is a common scenario for employees in most public office in developing countries. In this case, it is very important to create top leadership management for motivating and influencing employees during project implementation.

Considering the above analysis of challenges of e-government application, especially in the developing country context, it can be said that different scholars have pointed out the most important factors for e-readiness in almost the same way. Four main factors for e-readiness as specified by scholars are

- The policy initiatives,

- The infrastructures,

- The skilled people to handle them for the specific works to be done, and

- The approaches of management for efficient implementation.

Besides these factors, some other factors can be considered here, such as laws to support e-government and the role of leadership in changing an organization's vision from a traditional method to a new management approach. The role of law is to protect the e-government approach from malpractice and to promote the privacy and security of its overall application. Leadership is one of the qualities that management needs to develop as well. In the process of training managers and changing their approach (elaborated on in chapter six), these leadership issues will be taken into consideration.

So, conceptual categories cover a wide theoretical ground of e-government and its readiness. Here, the challenges, policies, and strategies of e-government and its readiness are elaborated along with their outcomes, as depicted in Figure 12.

However, it is necessary to cite here that for specific objectives, there are many things to be readied. For instance, to promote e-government, it is necessary to be ready inside the government as well as in other parts of society (citizen, businesses, and so forth).

So, the above discussion of the conceptual framework of e-government readiness is closely associated with the concept of the tri-categories of e-government. Moreover, it has been noted that in the context of e-readiness, the creation process, strategies, and policies are dominant for achieving the ultimate benefits from e-government, that is, the content. Eventually, the benefits of e-government application are never possible without sound e-readiness, which means the flawless initiation and the proper implementation of e-government projects (Ghapanchi, Albadvi, and Zarei, 2008).
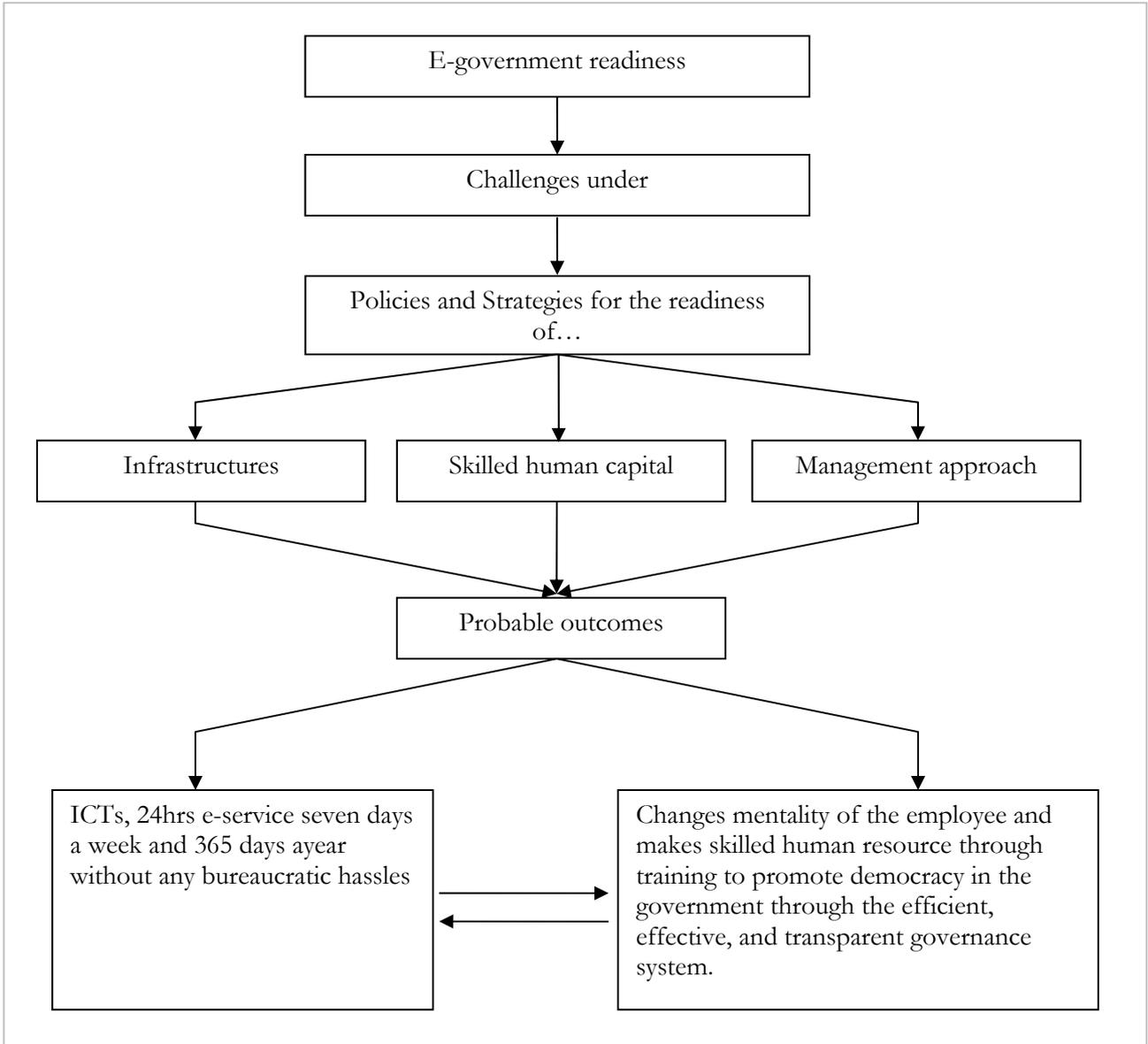
Figure 12. Dimensions of e-government readiness of this research.

2.8 Policy initiatives for the success of e-government

Before initiating any new policy, it is important to verify the demand for that particular policy in the area in which the policy will be implemented. Moreover, it could be said that any policy should be processed considering the local context. That means the local opportunity creator should raise the demand for public policy. In addition, the theoretical background of public policies can be contextualized based on specific demands. However, if any policy has a strong theoretical background and is considered the best solution for a particular problem, then the local demand can be curtailed, and the policy can be initiated accordingly.

E-government policy has a theoretical background, but it is not considered a strong bureaucratic solution for every country in the world; rather it varies with time and demand from the local ground (Cassell and Hoornbeek, 2010). The opportunity, in the beginning of the decade, has noticed the opportunity provider: the government should implement e-government on the basis of available infrastructures and training

facilities. Initiating policies and focusing on implementation only can never bring the full benefits of e-government. Other issues have to be considered simultaneously.

The main target of this research is to identify the factors hindering smooth implementation of e-government in developing countries, especially in the public administration of Bangladesh. It has been presumed that improper e-readiness is the main shortcoming for proper e-government implementation. However, the policies that are circulated under the main e-readiness categories should be rightfully present as the policy initiator to reach the goal of making e-government an ultimate source of power for the citizen.

2.8.1   Infrastructural basis for e-government readiness

Brown (2003) has presented in a study that electronic government needs the combination of technical, organizational, economic, human, and political factors. Moreover, in order to make a sound combination of the above factors, he has outlined different components that should be ready. First, he has said that the technological components should be well established. This means that government should provide services via a single entry screen known as a portal. The contents of an organization that should be aggregated and shared through portals are information; services; and application with customers, partners, employees, and suppliers. A portal can often be organized by topic area; for instance, in a "my vehicle" section, available information pertaining to vehicles--from driver's licenses to vehicle registrations to traffic citations--would be provided for citizens. Moreover, in order to prepare the portal for services to citizens, software applications, hardware solutions, and internet access or internet service providers should be carefully considered by the organization.

For a government to disseminate information, promote communication, conduct transaction, and facilitate governance online services to citizens, Brown (ibid) has summarized that the government should have the following software applications:

1) In the case of an electronic payment scheme, the government should give careful consideration to confidentiality, integrity, and authentication issues.

2) Commerce server software that would gather all information related to products, shopping, shipping, taxes, payment, and receipt should be properly installed for customer satisfaction.

3) A mechanism for citizens to request information on particular issues should be properly installed, and this software is to be called web server software.

4) Web browser software should allow citizens to connect with servers to access any number of web pages and to follow links from documents or page to page. The server software would also provide images and sounds or run animation objects.

5) In order to confirm orders, send a request for payment, and capture payment information, including requesting to add, delete, and modify orders, transaction server software is necessary. This software is often referred to as online transaction processing (OLTP) software.

6) Firewall server software is necessary for organizations to protect against viruses, intrusions, and unauthorized system access.

Moreover, according to Brown, in order to provide desired services to citizens through the application of e-government, the hardware application should be developed based on performance, high reliability, service support, storage, redundancy, interoperability, and seamlessness.

Performance is the ability to perform numerous operations or to handle a large workload without requiring extensive modifications. High reliability is the ability to run without a non-recoverable failure for a long period

of time. To ensure reliability, there should be maintained service support and ease-of-use considerations, such as the ability to remove and replace a component (e.g., fan, disk drive, power supply) without having to shut down the system or cause processing functions to stop. Moreover, the storage capacity, both in terms of raw space (i.e., how many gigabytes) and the number of disk drives a server can support inside the chassis should be examined. Redundancy occurs when a given component (e.g., fan, power supply, network interface card, disk drive) has a backup and a fail-over mechanism. Moreover, redundancy is a method for improving system reliability and availability. Finally, interoperability and seamlessness constitute the ability of the different hardware components to interconnect and communicate seamlessly. Software and hardware incompatibilities may create difficulties in deploying technology initiatives.

Brown (2003) has pointed out that for internet access and internet service providers, regardless of various technical alternatives government agencies might employ in developing their online services, system performance should be appropriate and must have scalability, flexibility, compatibility, manageability, availability, security, and total cost of ownership.

Broadly, the system should be capable of handling increasing numbers of users without any disruption of services. Moreover, the system must provide a broadly configurable array of hardware devices that do not require major reinstallations as enterprise requirements change. The system must address compatibility with expandable configuration requirements as well as standard industry specifications to protect future application investment. The system should not demand excessive management time and effort for maintaining online operations. The system must be capable of sustaining tens to hundreds of thousands of processing transactions with minimal wait time or downtime. The system must incorporate an appropriate level of security to prevent unauthorized access to data. Total cost of ownership is a combination of the fully configured system price, including installation, set-up, training, infrastructure costs, downtime costs, and ongoing maintenance.

Moreover, in order to provide government services online three main policies that must be developed are security, privacy, and ethics. However, the focus should be on substantive policy issues. Substantive policies involve the modification of actual operation. For instance, after introducing the actual operation, any change related to the policies of security, privacy, and ethics is considered a substantive or field/profession-specific policy issue.

In order to protect public agencies from illicit modification, destruction, or exposure, unauthorized access should be obstructed or at least limited. Brown (2003) has clarified that encryption and decryption of the message from the citizen to the authorized person should be restricted. For example, when the message is sent from the citizen to the specific authority of any particular agency, then the message or request should not be deleted or read by any person other than the authority.

Brown (ibid) has outlined the privacy guidelines of the Organization for Economic Cooperation and Development (OECD) as follows:

1) Personal data should be obtained by lawful and fair means, and with the knowledge or consent of the data owner.

2) Personal data collection should be relevant to the purposes for which that data is to be used. To the extent necessary for those purposes, such data should be accurate, complete, and current.

3) The purpose of the data collection effort should be specified, and the subsequent use of such data should be only for the stated purpose as agreed to by the individual.

4) Personal data should not be disclosed or otherwise used for any purposes other than those set forth in the purpose specification, except with the consent of the data subject by the authority of law.

5) Personal data should be protected with reasonable security measures to prevent unauthorized access, destruction, modification, or disclosure.

6) The data controller should make available information concerning the existence, use, and nature of all personal data that is collected.

7) Individuals should have the right to ascertain from a data controller whether the data controller has personal data relating to that individual and should have access to correct the data, as required.

Moreover, in terms of ethical matters, he has outlines four domains: privacy, accuracy, propriety, accessibility.

Privacy is about the collection, storage, and dissemination of information about individuals. This means that only targeted data will be collected. For example: data from the individuals or citizens who have applied for credit or insurance or any other services from an agency should be collected by the particular section undertaking the action. In terms of accuracy, in order to collect, process, store, and disseminate the information, the authenticity of data should be verified. Propriety of data ownership means that the person who owns the data should be properly specified. Finally, accessibility relates to the right to access information. Access rights should be based on a legitimate "need-to-know" basis.

2.8.2   Training for the success of e-government

It has already been illustrated that proper application of ICTs, skilled human resources, and a positive approach of management towards e-government are required for e-readiness. Accordingly, we could say that training is the best way to make human resources personnel sufficiently skilled to operate ICT infrastructures and to motivate them to use appropriate e-government applications. Northrop (2003) has outlined some basic requirements for computer skill. He has emphasized word processing, spreadsheets, graphics, database management, e-mail, and internet as the basic requirements for the operation of e-government's work. Here, word processing is considered the computer applications such as composition, editing, formatting, and printing of data. It also encompasses the printable materials applied for the office computer. Spreadsheets include the accounting functions of any department or government units as well as the record keeping of different functions of government administration. Skill with graphics involves drawing diagrams or making pictures to describe a text in a small format so that readers can easily gain knowledge. Database management records everything related in a very professional way. In this domain, the database manager can quickly give the information per the requirement. E-mail is the replacement of post-mail, phone cost, and, of course, time. With the wide application of email methods, communication between different bodies will be easier and last longer with concrete visible means. Finally, the internet is maintained by the government to attract its customer from different sections of the society through the World Wide Web. Here, different government units make home pages to offer services to customers, and customers can easily obtain all required information through the World Wide Web.

Schelin (2004) has tried to outline the curriculum of e-government training modules. He pointed that at first, the module should elaborate the core of e-government implementation by considering topics such as what is e-government, what are the benefits from e-government, who are the customers in the process of e-government, what advantages does e-government offer, what are the risks behind e-government implementation, and so forth. The second and third modules should emphasize technology and management skills. Employees must be trained to be technologically sound to make them ready for e-government. The management skill of employees is also important in the process of e-government implementation. We know that implementation of e-government depends on the process of project management. Access e-Government (2002) has articulated the criteria for the best project management skills:

1. Define purpose and scope.

2. Choose a highly-skilled and respected project leader.

3. Recruit the right project team.

4. Sell the project to decision makers.

5. Communicate often and clearly with stakeholders.

6. Finance creatively.

7. Adopt tools and techniques that can manage complexity.

8. Look for existing models.

9. Understand and improve processes before you apply technology.

10. Match the technology to the job.

11. Use industry standard technology.

12. Adopt and abide by data standards.

13. Integrate with related processes and practices.

14. Use prototypes to ensure understanding and agreement about design.

15. Choose a capable pilot site.

16. Make the best use of vendors.

17. Train thoroughly.

18. Support users.

19. Review and evaluate performance.

Business case metrics are mainly involved in the benefits the e-readiness brings. Similarly, these metrics involve what value will be derived from e-government implementation. Two final modules emphasize organizational transformation and digital civic engagement. It has been noted earlier that digital government is for information sharing among its different customers and giving them proper online services as per their requirement. Therefore, the mindset of employees is a necessary part of training. Digital civic engagement is a way for training to make the employee focused on the relationship between the government and the citizen through using technologies.

2.8.3 Management approach towards e-government

Attitudinal change in both the employees of public organizations and in different social actors such as citizens and businesses is considered a basic criterion of e-government (Waheduzzaaman and Miah, 2013). It has argued that e-government modernizes administration with through innovative change. Managers should be trained to operate the applications of e-government. They should also accept views given by social actors. Moreover, policies should support a participatory approach, as this approach is the basis of promoting democracy.

Research shows that bureaucratic culture creates obstacles to the participation of citizens and other actors (Zafarullah and Huque, 2001). In order to promote participation, Gould and Gomez (2011) have suggested three steps that governments should follow:

- Understand the culture of the targeted population;

- Include decision-makers who understand the user population; and

- Take advantage of direct input from the user population from project inception.

Zafarullah and Huque (2001) have shown that in order to change the existing system of government employees, local people should act as a civil society group. The structural and legal framework for e-government should be formulated in such a manner so that the interest of the civil society and private sector group are taken into consideration by the public sector organization in the governing process.

2.9 Summary

It is essential to note that all the initiatives of e-government and its readiness mentioned in different literature may not be sufficient for developing nations. Due to different socio-economic scenarios, the factors and issues that hinder the progress of e-government implementation in developing countries need further research. Keeping in mind the case of e-government in developing countries, the following two important aspects are investigated and analyzed in detail in this research:

a) the challenges of e-government, and

b) the possible ways to make the initiative successful.

E-government serves to make efficient and effective administration and its systems of governance by utilizing ICTs and reforming the administrative set-up through training and applying the best approaches from governance models. Since ICTs application is difficult to install, the outcomes of e-government are, of course, related to many other factors. Researchers have addressed the challenges of e-government and proposed some possible ways to overcome them in a plausible way. However, empirical data from a developing country would identify the constraints and aid in implementing e-government in developing countries, especially in the government administration of Bangladesh.

This chapter has identified three important factors that should be very carefully monitored during the readiness stage for the success of e-government.

1) Proper planning and strategies for ICTs applications: this should include the related ICT equipment for overall e-government development. If the goal has been decided upon, then the necessary ICT equipment can be specified. Therefore, wastage of money will be decreased, and more success will come.

2) Determination of e-government outcomes: e-readiness should have specific goals to be achieved. The goal of e-government is not to automate the administrative process; rather the goals are quite large and include making an effective and efficient administration to perform for the overall success of e-government.

3) Available training facilities: the application of ICTs and its outcomes cannot be achieved without making staff ready. Therefore, the government should focus upon these issues and provide training to employees to handle e-government applications skillfully.

3 RESEARCH METHODOLOGY

3.1 Background

In principle, science has two pillars: logic and observation. This means that scientific understanding must have senses correspond to what we have observed. Thereupon, the question may arise how social science could be a science. Social science is science in terms of its theory, data collection, and method of data analysis (Babbie, 2010). Science with its logic and observation cannot settle some issues; however, analyzing by using "what is" and "why" in the social science arena can help us to know the actual facts and interpret their significance. For instance, pure science cannot determine whether socialism or capitalism is best. However, social science with its different analytical approach could identify the best one.

Moreover, the analytical approaches of social sciences follow different theoretical reasoning. The link between theory and research indicates how the research will be conducted and how the outcome will be drawn. Bryman (2008) has determined two approaches between theory and research, which are deductive and inductive. The deductive approach deduces a hypothesis (or hypotheses) on the basis of theory and collects of data through empirical study. Inductive is the opposite approach, which means that it involves collecting data and testing with theory.

Eventually, methodological issues depend solely on the direction of the research, which could be either deductive or inductive. Moreover, different approaches of methods could be applied as the research demands. This chapter will describe methodology, methods, selection procedure of respondents, and the way in which the empirical data will be analyzed.

3.2 Methodological issues

If we go into details on methodological issues, it would be clear that whole process of a research work is the indication of which methodology is suitable for that particular work. Basically, social sciences follow qualitative and quantitative methodologies for collecting and explaining empirical data. Bryman (ibid, p. 21) has said, "Quantitative researchers employ measurement and qualitative researchers do not." These two approaches become clearer if we go through the explanation given by Denzin and Lincoln (1998, p.8) that states: "The word *qualitative* implies an emphasis on processes and meanings that are not rigorously examined, or measured (if measured at all), in terms of quantity, amount, intensity, or frequency. Qualitative researchers stress the socially constructed nature of reality, the intimate relationship between the researcher and what is studied, and the situational constraints that shape inquiry. In contrast, quantitative studies emphasize the measurement and analysis of causal relationship between variables, not processes."

Here, it is shown that both qualitative and quantitative methodologies have differences in terms of the role of theory, epistemological issues, and ontological concern. The nature of qualitative research is employed for theory generation and to test theories. On the other hand, the main concern of the quantitative approach is to deduce theoretical issues. So, from the above views, it is clear that quantitative research primarily emphasizes the quantification of a social phenomenon, while qualitative research finds out the reason for a social fact, through statements the words, in the social setting. This research is not based on the quantification; rather, the main goal is to find the reason for the social fact of e-government and its readiness.

As it has been determined that this research will follow qualitative methodology, it will not go into depth on quantitative methodologies. In the following parts of this research, qualitative methodologies and suitable methods which have been employed for analyzing the empirical data will be elaborated upon. All kinds of social research follow some basic concept to finalize the whole process. In order to outline a useful conclusion, this research has followed theory and methodological order. As the theoretical basis has already been established in details in the theoretical chapter, it will not be explicated here.

Qualitative methodology is important for any kind of social or other research and has a long historical background. Moreover, its methodological features have been reshaped over time. The present issues of qualitative methodology have been mentioned already and are usually applicable for both theory generation and theory testing, or for the inductive and deductive approaches to qualitative research. Hence, the process could be explained as follows: data has been collected and analyzed on the basis of qualitative methodology following an inductive approach along with a set of ideas, a framework (theory, ontology), and with specific questions (epistemology).

3.3 Approaches for collecting and analyzing qualitative data

Both deductive and inductive approaches could have a theoretical framework; however, the distinctions are clear between these two. Miles and Huberman (1994) have distinguished between deductive and inductive by explaining that the theoretical framework for deductive reasoning is tight and pre-structured, while inductive reasoning is considered loose and emergent. Moreover, the deductive approach is concerned with building the hypothesis from the existing theory and testing it in the real world. Therefore, the logical sequence of the deductive approach is rule-case-result. Conversely, the inductive approach is the development process of theory that starts with observation of specific instances that leads to emerging propositions and their generalization in a theoretical frame. The logical sequence of the inductive approach is case-result-rule (Danermark, 2001).

Besides the deductive and inductive approaches, there is another approach in the qualitative methodology, "abductive reasoning." Abductive reasoning emphasizes finding suitable theories for an empirical observation. This has more specifically explained by Dubois and Gadde (2002) as "Theory matching" or "Systematic combining." Moreover, the logical sequence of abductive approach follows from prior theoretical knowledge to deviating real-life observation, and then from theory matching to theory suggestion and conclusion (Kovács and Spens, 2005).

The above analysis has clearly indicated that for this research, a theoretical basis is important to generating new theories. The approach will indicate how a theory is used for the research. Also, different approaches have different focused genres and methods of analysis. Ultimately, the design of any research starts with the design of the methodology, available methods, and means of analysis.

3.3.1 Methodological genres and the area of focus

Before discussing the relevant methods of this research, it is important to know the genre suitable for qualitative research. Denzin and Lincoln (1994) has defined the genres of qualitative research as case study, ethnography, phenomenology and ethnomethodology, grounded theory, biographical method, historical social science, participative inquiry, and clinical research.

The genre of this research is strategically a case study. Geert Hofstede (1991) in his famous book *Cultures and Organizations: Software of the Mind* has said that "Qualitative data usually means case studies". Marshall and Rossman (2006, p.61) have pointed out that "Studies focusing on a society and culture in a group, a program,

or an organization typically rely on the strategy of some form of case study." Along with different typologies of qualitative research strategy, Marshall and Rossman (ibid) have more specifically outlined different genres of qualitative research and its precise strategies as depicted in Table 8, following,

Table 8. Qualitative genre and overall research strategy (Marshall and Rossman, 2006)

Genre	Main Strategy	Focus of inquiry
Individual lived experience	In-depth interviews	Individuals
Society and Culture	Case study	Groups or Organizations
Language and communication	Microanalysis or text analysis	Speech events and Interactions

The focus of this research is "e-Service": a program that has been initiated in different government organizations mainly to ensure online government services or e-government. Thus e-service facilitates the proper means of e-government through promoting accountability and transparency, which ultimately promotes the democratic practice inside and outside the government (in a society and in a country as a whole). So, the total process based on a program e-service is considered a case, and the focus of inquiry is government organization at different levels of field administration.

3.3.2 Rationale of case study

A case study focuses on a contemporary phenomenon within some real-life context, and an explanation can be offered in different ways, such as instance, exploratory, explanatory, and descriptive. The researcher can find out the result by asking "how" and "why" regarding the case with little control over it. Different disciplines in social science and other sciences use case studies for their research inquiry. However, at present, in the field of social sciences this is a very popular research strategy (Hammersley and Gomm, 2012).

Yin (1994) has summarized that case studies could be used in the following settings:

1) Policy, Political science, and Public administration research;

2) Community, Psychology, and Sociology;

3) Organizational and management studies;

4) City and regional planning research, such as studies of Plans, Neighborhood, or Public agencies; and

5) The conduct of large proportion of dissertation and thesis in the Social Sciences.

Consequently, before delving into the details of the case study and particularly into the method for analyzing the empirical data in this research, it is important to know the facts related to a case study. According to Yin (1994, p.13), "A case study is an empirical enquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident, and it relies on multiple sources of evidence." Merriam-Webster's dictionary (2009) defines a case study as "An intensive analysis of an individual unit (as a person or community) stressing developmental factors in relation to environment." Gerring (2004), on the other hand, explains that a case study's method is qualitative;

that the research is ethnographic, clinical, participant-observatory, or otherwise "in the field"; that the research is characterized by process-tracing; that the research investigates the properties of a single case; and that the research investigates a single phenomenon, instance, or example (the most common usage).

So, from the above analysis, it is clear to us that a case study walks around "how" and "why" questions in order to explore, explain, and/or describe a contemporary social phenomenon within a real-life context. Here, exploratory research involves a great variety of methods, and the conclusion is suggestive rather definitive (e.g., a topic may be recommended for further study). Descriptive research describes some issue (e.g., the state of social affairs as it relates to the unemployment rate of the country). However, explanatory research usually provides the reason for the phenomenon in the form of a causal relationship (Babbie, 2010) in which the explanation may link variables such as drug use with other variables such as social class, employment, and attitudes toward drugs (Gray, 2014).

Yin (1994) has more specifically explained the related questions pattern of a case study. Different types of questions are categorized under Who, What, Where, How, and Why. Questions such as "What are the ways in which a school is operated?" are exploratory. The second type of what question usually takes the form of "How many?" or "How much?" An example is "What have been the outcomes from a particular managerial reorganization?" This type of what question also favors survey strategies or analysis of archival records in economic research for answering "Who" or "Where" questions or their derivatives, "How many?" and "How much?" "How" and "Why" questions are more explanatory and likely to lead to the use of case studies, histories, and experiments as preferred research strategies, for example, how a program worked or not.

So it can be said that a case study is used to answer a "How" or "Why" question about a contemporary set of events over which the investigators has little or no control. This research focuses on an explanatory approach to provide the reason for a phenomenon in a form of causal relationship. Here, e-government readiness as the main concept explains different variables such as the Context (the readiness), the Creation process (policies and strategies), and the Content (the outcomes), for its proper functioning.

3.3.3   Designing case study research

Research design indicates the total path for the research from beginning to end (Bryman, 2008). Case studies present different approaches such as single-case and multiple-case design (Yin, 1994). Single case has been used in some well-formulated theories, if the case is so rare or if the case has the restriction for social research. Moreover, single case could be embedded. When a single case study analyzes more than one unit, this is called an embedded case study. Multiple-case (holistic) design means that the same study is conducted in a multiple sight or in multiple cases. Similarly, if the case is multiple and every individual case has different units of analysis, then this is a multiple-embedded case.

For this research, three cases have been taken from a specific program of e-government initiatives in three-district level administrations of the government of Bangladesh. The first one has been taken for the Pilot case, and the second and third ones for the finalization and/or rationalization of the analysis. It is important to mention that this research is not going to overview the end result of the program "e-service". Rather, the main purpose of this research is to see how the program is effectively organized for e-government in the administrative settings of the government.

In the following chapter, the administrative settings of Bangladesh will be elaborated upon; moreover, the chapter will specify where the empirical data has been collected. For better understanding, a clear picture of different research designs mentioned by Yin (1994) is presented as shown in Figure 13.
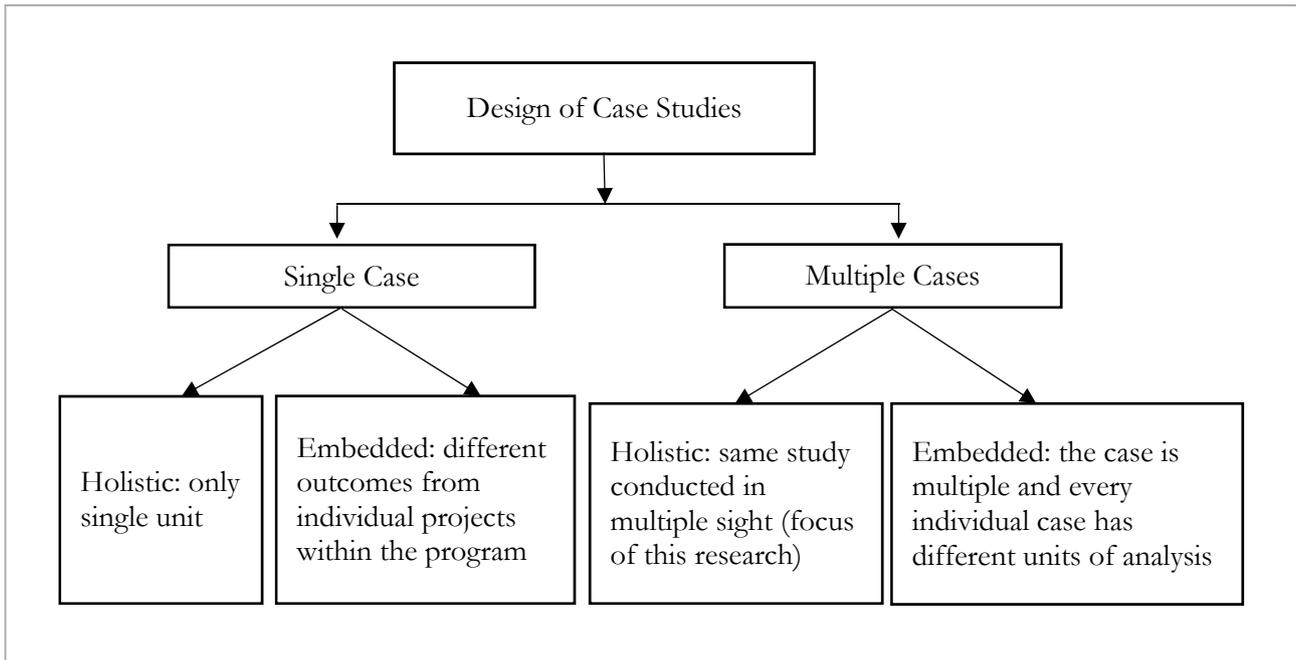
Figure 13. Case design of research (cf. Yin, 1994)

According to Yin (ibid), in order to maximize the quality of any design, researchers should concentrate on the following four aspects: 1) construct validity, 2) internal validity, 3) external validity, and 4) reliability.

Conduct validity will indicate how the sources will be used for collecting data. That means the data needs to be valid using multiple tactics. Three important tactics that could be used to construct the validity of the research are a) incorporating multiple sources of evidence, in a manner encouraging convergent lines of inquiry; b) establishing a chain of evidence; and c) drafting a case study report reviewed by key informants. Internal validity is concerned only with causal or explanatory studies, and to conclude, the researcher should consider possible factors other than a direct conclusion saying that something has happened on the basis of these. In other words, there may be many other things which should be considered during the conclusion.

External validity means that in order to make the research more valid, the researcher should, if possible, take multiple cases for data collection. Reliability indicates that some other researcher's results produced the same outcome, or, in other words, that the outcome was the same in both cases.

In the introductory part of this research, it was pointed out that the intensive study of this subject is still in the initial stages. Some pertinent research has been done; however, the research has mainly been based on quantitative data analysis or other cases, and some research work has been done based on secondary data analysis. This research has used an informant with intensive interviewing system and analyzed data accordingly. In order to draw conclusions, other sources of data have been taken into account as possible. During the collection of empirical data, multiple cases have been considered to validate the quality of this work.

3.3.4 Selection of methods for data collection

The main question of this research is how the problem with e-readiness affects the implementation of e-government. In case studies there are different methods that could be applied for data collection. This research is based on government organizations, more specifically, on one governmental program in order to promote

e-government all over Bangladesh. Here suitable methods in case study approach will be analyzed with emphasis on the methods selected for this research.

In order to collect data based on a case study approach, five different methods have been applied (Baxter and Jack, 2008). Moreover, it is important to know that these methods include both primary and secondary sources of data. Secondary sources include documentations and archival records. Documentations take various forms such as letters, memoranda and other communiqués, agendas, announcements and minutes of meetings, written reports of events (i.e., administrative documents), proposals, progress reports, internal documents, and so forth. Documentations also cover formal studies or evaluations of the same site under study, and news clippings and other articles appearing in the mass media.

Archival records vary from one case study to another. The relevant and possible archival records are service records saved in the organizational records, such as those showing the number of clients served over a given period of time. Moreover, the archival records include organizational charts and budgets over a period of time, maps and charts of the geographical characteristics of a place, lists of names and other relevant commodities, survey data or data previously collected about a site, and, finally, personal records, such as diaries, calendars, and telephone listings.

In contrast, primary data is usually based on interviews, direct observations, and participant observations. According to Yin (1994), interviews are usually considered the most important source of case study information. Interviews take several forms, such as an open-ended interview and a focused interview. In an open-ended, semi-structured interview, an investigator can ask key respondents for the facts as well as ask for the respondent's opinion about events. In some situations, the investigator may even ask the respondent to offer his or her own insight into certain occurrences and may use such propositions as the basis for further inquiry. On the other hand, in a focused interview, a respondent is interviewed for a short period of time, such as an hour. In such cases, the interviews may still be open-ended and assume a conversational set of questions derived from the case study protocol. A third type of interview uses structured questions. This is basically related to the formal survey (Meyer, 2001).

Direct observation assumes that the phenomenon being studied is not purely historical and that some relevant behavior and environmental conditions are related to the actual sources of evidence, which means that this observation provides additional information about the topic being studied. Two observation protocols could be followed here--more formal and less formal. More formal protocols involve the observation of meetings, sidewalk activities, factory work, and classrooms. On the other hand, less formal protocols call for the observation of building or work spaces, the furnishing of a respondent's office, and so forth.

Participant observation is another important way of collecting data. In participant observation, the investigator is also the member or takes on a variety of roles in the case being studied. The benefit of this data collection method is the ability to perceive reality from the viewpoint of someone inside the case study rather than someone external to it. Moreover, this protocol offers other opportunities because the investigator can manipulate the events or situation.

Physical artifacts are another source of case study data. This source of data adds extra flavor to the conclusion of the overall data collection. A physical artifact includes a technological device, a tool or instrument, a work of art, or some other physical evidence. In this research, the example of physical evidence is that there is a computer and a printer, and to ensure the workability of that computer and printer, the researcher could make a copy as evidence and store this in a relevant place.

The above six case study methods emphasize both primary and secondary sources for empirical data collection for this research. For secondary sources of data, both documentations and archival records have been considered. Since e-government has many issues involved in its successful implementation, administrative documents have had focused upon for analyzing whether the scenario is compatible with e-

government readiness. Moreover, for the archival records, the researcher has tried to locate service records or other charts or lists for the success of e-government. However, since e-government is in the its primary stage, and since in most cases, users can download only some forms from government portals, archival records have not been played a major role for this research.

The primary source of data collection is the basic source of empirical data for this research. Here, from different primary interviewing systems, open-ended, semi-structured interviewing methods have been applied. Bryman (2008, p.458) has described a semi-structured interview as follows: "The researcher who has a list of questions or fairly specific topics to be covered, often referred to as interview guide, but the interviewee has great deal of leeway in how to reply. Questions may not follow on exactly in the way outlined on the schedule. Questions that are not included in the guide may be asked as the interviewer picks up on things said by interviewees." At this point, it is important to mention that the interviewee was the key informant and was given the opportunity to share thoughts for further development of e-government readiness issues. A set of questions was prepared, and on the basis of the informant's responses to those questions, further questions relative to this research were asked.

In this study, direct observation took place since e-readiness includes the setting of the computer(s) and other application of ICTs. Although not directly related to the direct observation, different activities were considered and observed during field visits. Participant observation, on the other hand, was not considered for this research since the role of participants has not been intensively studied. Additionally, physical artifacts did not influence this research because of restricted government organization. However, as opportunities arose, the researcher asked about how the computer works and about its performance.

3.3.5   Selection of informants

This research has been carried out in government organizations. Every organization has different key parts to achieve organizational goals. Lunenburg (2012) has pointed out that any organization has three key parts, as shown in the Figure 14 below.
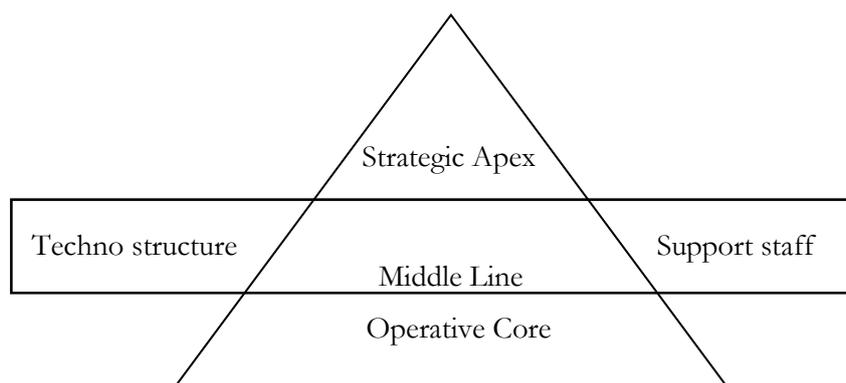
Figure 14. Key parts of an organization (Lunenburg, 2012)

The Figure 14 shows that the upper part of the organization is the strategic apex. The strategic apex has been indicated as the top management and its support staffs. The middle part of the organization includes three different type of staff: techno structure, middle line, and support staff. The techno structure staff members are engineers, accountants, researchers, and so forth. The middle line is the middle and lower-level

management. The support staff are those who provide indirect services. Finally, the lower part of the organization is the operative core where the employees actually carry out tasks for the organization.

For this research, the strategic apex (e.g., the person directly related to the program), the middle line staff (e.g., who are somehow related to the program), and the operative core (e.g., staff related to the program to be carried) out has been considered for the interviewee. In order for the reader to understand the techno structure for this research, the program is primarily related to the routine work; however, the most knowledgeable person is also the technical hand and may be an engineer or the general person trained by the government. Marshall and Rossman (1999, p.113) have explained that "Elite individuals are those who are considered to be influential, prominent, and/or well-informed people in an organization or community." Finally, the person considered as the operative core has also been taken as an interviewee based on the necessity of the study.

In conducting the interviews, a convenience sample system has been avoided as much as possible, as we know that this system may contain some restrictions from the organization which might prevent the researcher from obtaining the right information from the right person. In conducting the interview and collecting relevant data, the researcher has taken help from friends and contacts, and in every case, access has been ensured by receiving clearance from top-level management.

A sample interview was selected through the snowball approach. After receiving permission from the highest authority in the case area, the researcher followed the snowball approach, which involved using social contacts between individuals to trace additional respondents.

3.3.6   Approaches for analyzing data

The primary purpose of this research does not relate to developing a theory from the empirical data. Rather, the primary goal of this research is the general analysis of the themes. Whereas the inductive approach is usually applicable to developing a theory, the general inductive approach follows the description of most important themes aside from developing the theory. The difference between "General inductive analysis" and "Inductive analysis" was mentioned by Thomas (2006). The general inductive approach has some similarity with the 'pattern coding' described by Miles and Huberman (pp. 69-71), but the outcomes of inductive coding differ from pattern coding in that the general inductive approach may not involve causes or explanations and relationships among people that are commonly part of pattern coding. Thomas (ibid) has laid out the different approaches, as seen in Table 9.

Table 9.   Comparison of qualitative analysis approach (Thomas, 2006)

	General Inductive approach	**Grounded theory**	**Discourse analysis**	**Phenomenology**
Analyticstrategiesand questions	What are the core meanings evident in the text, relevant to evaluation or research objectives?	To generate or discover theory using open and axial coding and theoretical sampling	Concerned with talk and texts as social practices and their rhetorical or argumentative organization	Seeks to uncover the meaning that lives within experience and to convey felt understanding in words

Outcome of analysis	Themes or categories most relevant to research objectives identified	A theory that includes themes or categories	Multiple meanings of language and text identified and described	A description of lived experiences
Presentation offindings	Description of most important themes	Description of theory that include score themes	Descriptive account of multiple meanings in text	A coherent story or narrative about the experience

Although most government all over the world have initiated the readiness program for promoting sound e-government, the end results of most of the initiatives are stagnant, as the criteria of e-government have not been promoted in a proper manner. In order to draw conclusions about the issues hindering the criteria related to e-government, following the inductive approach (e.g., case-result-rule) is important. In short, the reasoning approach for this research has followed the inductive approach shown in the Figure 15.
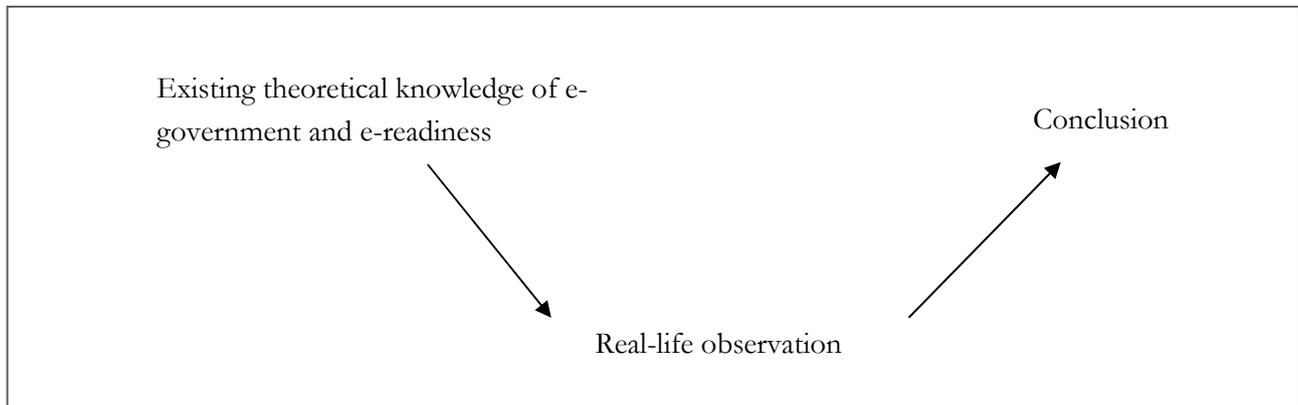
Figure 15. Suitable research approach for this study (Modified from Kovács and Spens, 2005)

Moreover, the inductive approach has some basic purposes, such as making a data summary, linking research objectives and findings, and developing a theory. These purposes guide researchers to finalize the research work. In order to meet the above purposes, data must be collected and coded accordingly. The coding process of qualitative data through the inductive approach begins with close reading and re-reading of the empirical data. In the process of reading and re-reading, relevant data is gathered. Then it is important to categorize the data for the analysis and to develop the conclusion. Creswell (2002) has figured out the coding process for qualitative data in inductive analysis seen in Figure 16.

Initial reading through text data	Identify specific segments of information	Label the segments of information to create categories	Reduce overlap and redundancy among the categories	Create a model incorporating most important categories
Many pages of text	Many segments of text	30-40 categories	15-20 categories	3-8 categories

Figure 16. Coding process of inductive analysis (Creswell, 2002).

Therefore, data analysis based on the above coding system should be undertaken in a systematic way. Thomas (2003) has outlined the following procedures for the inductive analysis of qualitative data:

1. Preparation of raw data files (data cleaning): after getting the data from the empirical field, each piece of data should be filed in a data file with care so that data cannot be misplaced.

2. Close reading of text: Once the data has been filed after the collection, the researcher needs to read the data properly to determine the themes of the data.

3. Creation of categories: The researcher then categorizes the more important and less important data by considering the aim of the research.

4. Overlapping coded and encoded text: After the categorization, the researchers makes sure that the categories do not overlap. Any overlapped categories must be curtailed, and the most relevant text must be coded based on the research objectives.

5. Continuing revision and refinement of category system: Revision is continued as necessary to ensure that the categories are not overlapping and are relevant for the research.

3.4   Limitations of the study

This research has touched on the necessary issues related to e-government and its development. After outlining the theoretical framework and specifying the methodological selection (considering the Bangladesh government), empirical data was collected in a well-defined manner. Emphasis was placed on the government's ICT infrastructures and other e-readiness factors. To further broaden the perspective of the e-government, additional information could have been gathered; this may be considered as a limitation of the study. The limitations of this research are summarized below:

1) In this research, the involvement and views of policy makers were collected using indirect methods (from bulletins, donors' studies, media, workshops, national and international research, and so forth); however, empirical data have been collected from the field to understand actual progress and development. Interviewing policy makers could have made the study more effective.

2) Empirical data was collected from three of Bangladesh's 64 districts on the notion that all the districts follow same rules and procedures for e-government applications. Including additional districts could have revealed some area-specific issues in e-governance.

3) Since the Bangladesh government has specific divisions in its structure for e-government development, only employees and officials of the related e-government division have been involved in empirical data collection. Views and feedback from other divisions within the government could have made this work more data enriched.

3.5   Summary

The focus of this research is government organization. Therefore, case study was the main research strategy. After considering other methods of case study, in-depth interviewing and secondary data sources were selected as most suitable for empirical data collection. The reasons for this selection were manifold. In-depth interviews were selected with the intention of using them to find the hidden truth of e-readiness for the success of e-government. Secondary sources were used to justify the interviews and to provide an overview of the current e-readiness of the government administration of Bangladesh. Sample selection process was challenging; however, it was managed after assuring the respondents that their interview contents would be in safe hands. Elaborations on sample size and respondents have been given in section 6.2, and the interview questions can be found in appendix 1.

4 PUBLIC ADMINISTRATION IN BANGLADESH

4.1 Introduction

In the modern era, many changes occurred in society through direct and indirect contributions of public administration (Haque, 2001). Briefly, the concept of modern public administration is to promote the welfare of the people by providing required services on time, without hassle, and at low cost (Zafarullah and Siddiquee, 2001). However, the concept has yet to be ensured in equal manner in every part of the world. The administrative culture in the developed world is different than its counterparts in the developing world. Developed countries are more advanced and contemporary in comparison to countries in the developing world which are in the initial phase of modernizing their administration.

In view of the world-wide initiation of administrative changes, different initiatives have come to light to make systems contemporary or modern. These initiatives are not only taking place in developing countries; almost every government, whether in a developed, developing, or underdeveloped country, has instituted positive approaches to modernizing administrative practices. To modernize an administration is to make its authority ready to fit with the contemporary world. This chapter presents an extensive analysis of the current administrative scenario and culture of Bangladesh's public administration as the basis of a developing country. The general administrative culture will be analyzed here at first.

4.2 General administrative culture

In a nutshell, it can be said that public administration's function is to implement long-term government policies. In order to implement a policy, an administrator needs to be efficient in planning, organizing, directing, coordinating, and controlling. While planning, the administrator should contemplate assorted priorities. For instance, a plan should be beneficial to the public with uniform consideration of every hierarchy of people. A plan should also be accessible for all and their comments and/or suggestions must be prioritized and initiated accordingly (Abdullah, 2012). To clarify the above statement, main approaches of administration as outlined by various scholars are mentioned below.

American historian (L.D. White,) has divided public administration into two perspectives: the primary and the broader perspective. In order to sketch the primary perspective of public administration, he said that an administration should be capable of utilizing resources at the clearance of officials and employees. Regarding the broader perspective, White stated that the ends of administration are vital objects of the state. The broader perspective also includes the maintenance of peace and order, progressive achievement of justice, instruction of the young, protection against disease and insecurity along, and adjustment and compromise of conflicting groups and interests. Therefore, public administration means the entire government in action for the attainment of good life (ibid).

Felix A. Nigro and Lloyd G. Nigro (Naidu, 1996) have observed that public administration is a cooperative group effort in a public setting which covers all the executive, legislative, and judicial branches and their inter-relationship. Moreover, the administration has an important role in the formation of public policy and in the political process, but not in the way that private administrations usually do. Yet all administrative actions are closely associated with numerous private groups and individuals in providing services to the community.

Public administration, on the other hand, is involved in various kinds of works ranging from the formulation of policies to the interaction process of government organizations with their stakeholders. Basu (1994) has summarized scholars' definitions of public administration in the following way:

- It involves the formulation and implementation of public policies;

- It is the executive branch of government;

- It is the organizational structure and machinery of administration;

- It is an administrative process;

- It has been termed bureaucracy and maintains its activities;

- It coordinates group activities and develops social relationships;

- It interacts with the organization and its environment.

Based on the above discussion, it can be said that public administration generally has the wide duty of taking care of public property, maintain it efficiently, advising people on how to get a better life, and informing the public of everything. However, public administration has also been changed with the growth of societies and the world's economy. At present, the focus of public administration has shifted from an administrative orientation to citizen participation and transactions (cf. Coursey and Norris, 2008).

4.3   Administrative reform with the contemporary demand of society

The concept of administration and its process is changing with time in order to make administrative work more efficient and effective. At this point, it can be said that modern public administration is the outcome of the old administrative approach (Arellano-Gault and Gil-Garcia, 2004). Still the current administration of government involves the same kind of duties carried out with different administrative methods. Here, the example of NPM can be given. NPM was developed to make bureaucratic work more effective by changing the culture of management. The main theme of NPM was to incorporate the market mechanism into the policy-making process (Denhardt and Denhardt, 2002). Accordingly, the concept of e-government is another way of making the regulatory work of government faster, hassle-free, and lower-cost. Furthermore, it is leverages the governmental work open for all from every corner of the world. Governments from every part of the world have initiated efforts to make this concept a successful one. Bangladesh is no exception. Before going to explain them, first, the overall administrative scenario of the empirical area will be outlined below

4.4   The administrative set-up of Bangladesh

After gaining independence in 1971, present-day Bangladesh, as a result of different administrative reforms, has a unitary form of government. In reality, the country has one central authority: the Prime Minister. She/he holds the overall power of the government and its administration. The Prime Minister is the executive head of the government, while the President, elected by the Parliament, is the constitutional head of the state. The Prime Minister presides over the cabinet (composed of Ministers) in order to formulate policies. Ministers or State Ministers are considered heads of each Ministry. A senior permanent civil servant, known as a secretary, carries out the functions of Ministries in cooperation with his/her junior colleagues. Therefore, the secretariat is the highest administrative level of Bangladesh's government. The policies of the national administration are

formulated primarily by the secretariat and implemented by the field administration at the division, district, sub-district, and the union levels (Siddiqui, 2006). To present a clear view of the central and field administration, the scenario of central and field administration has been outlined in Figure 17.
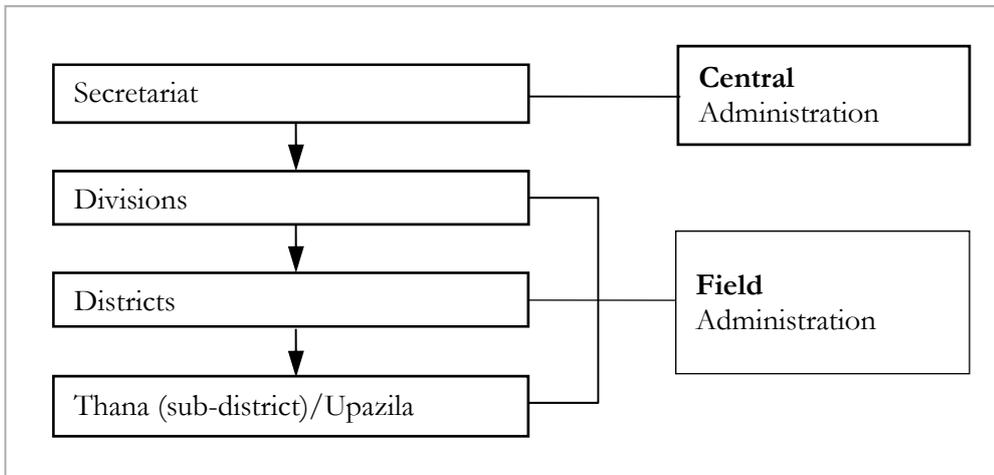
Figure 17. Central and field administration of Bangladesh (Jahangir, 2008)

4.4.1   Secretariat

The secretariat is synonymous with the ministries (Jahangir, 2008).Permanent administrative officials in the secretariat, designated as Secretary, assist the Ministers, and they are assisted by their junior colleagues. The hierarchy of the officials of the secretariat on the basis of their positions is shown in Figure 18.
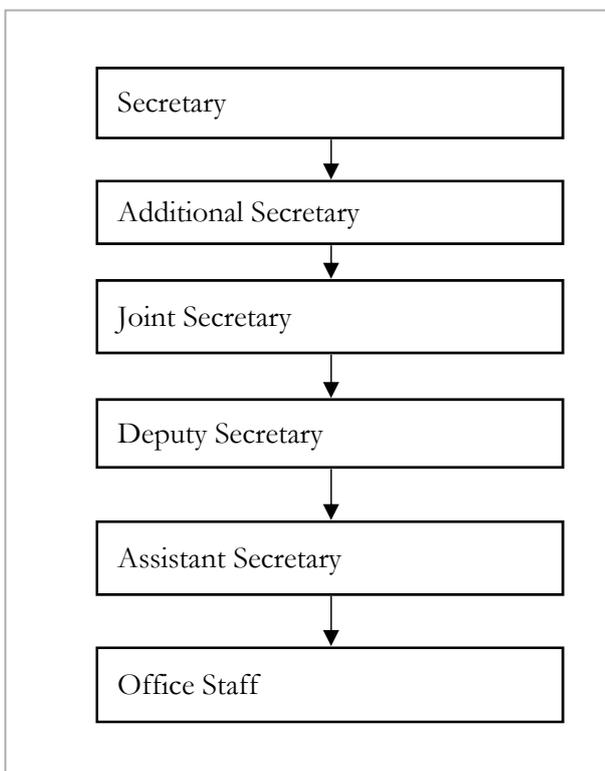
Figure 18. Official positions of the secretariat (Jahangir, 2008)

Together, these officials assist the national government in formulating and evaluating policies, and they assist the ministers in performing during the parliamentary session. Moreover, all the necessary clerical work in the secretariat is initiated and implemented by the secretary with his/her assistive bodies. These are the main functions of the secretariat and the background of the overall administrative structure in Bangladesh. Formulated policies are implemented by the field administration, and its function will be considered next.

4.4.2 Field administration

The field administration functions primarily at local levels as the agent of government to provide services to the local people. Since independence, different successive governments have re-arranged the field administration to achieve certain goals. The field administrations are now divided into four tiers, as seen in Figure 19.

| Division |
| District |
| Upazilla |
| Union |

Figure 19. Levels of Bangladesh field administration (Talukdar, 2009)

In Bangladesh, the district is the focal point of all of the government's developmental work at the field level (Jahangir, 2008). Bangladesh has 64 districts under seven administrative divisions. Before elaborating upon the functions of the district-level administration, the functions of divisional administration will be outlined.

4.4.3 Divisional administration

Divisional commissioners are responsible for all administrative functions in the divisions. In order to fulfill the functions in the divisional commissioner office, each commissioner is assisted by other staff of the administrative units. The main functions in the divisional office are as follows:

1. Monitor and coordinate the function of district level administration,

2. Operate and collect the revenues,

3. Coordinate developmental and welfare-related work for people,

4. Coordinate the transfer of district and other field-level officers,

5. Coordinate work among the sections of divisions, and

6. Perform other duties imposed by the highest authority.

Here, we can notice that the divisional administration is not related directly to the mass of people; this administration only monitors the functions and duties of the district and other field-level administrations. It is clear from the vast functions of district-level administration that the Office of the Deputy Commissioner (DC) at the district level is more closely associated with to the mass of people and with provide services to them.

4.4.4 District administration

The district administration is headed by the Deputy Commissioner (Deputy Secretary of Civil Bureaucracy of the Government), but the functional status of a DC at his/her jurisdiction is equivalent to Joint Secretary in the DC office at every district-level administration (Jahangir, 2008). The Office of the DC is still known as the collectorate, over which a collector or a 1st class magistrate presides and where the officials and staff operate. The officials and the staffs of the DC Office are shown in Table 10.

Table 10. Officials and staffs in DC office (Rahman, 1990)

Officials	Support Staff
Deputy Commissioner	Head Clerks (one for each section)
Additional Deputy Commissioners	Other Clerks
Section Officers (Assistant Commissioners)	Peon/Bearer/Jomadar
Special Officers	Dofader/Mali/Umedar

District administrative officers perform enormous functions. A DC is supposed to be responsible for all the activities within the district, including the coordination of ministerial and agency field offices. Moreover, other field level officers, such as the Upazilla Nirbahi Officer (UNO) at Upazilla, are also coordinated and monitored by the DC. Basically, the DC Office is concerned with the function of development, law and order, revenue administration, land administration, education, executive, relief and rehabilitation, and coordination of all other bodies at the district and other central and field levels. The above functions have been coordinated by the departments as shown in Appendix 4.

To clarify the function of the DC Office, Jahangir (2008) has outlined its general functions as follows:

1. Monitor the functions of land office and land-related activities to provide better and swifter service to the people.

2. Determine and collect land taxes from the mass of people.

3. Work as a caretaker of government property.

4. Pile up lands required for the developmental functions of the government.

5. Collect and monitor revenues for the government.

6. Develop different infrastructures i.e. Hat-Bazar (local market) and Ferry-ghat (transportation station between two parts of river) in the district.

7. Collect and maintain the important documents of the district.

8. Complete the formalities in case of collecting or handing over any properties.

9. Properly manage judicial, non-judicial, and other stamps of the government.

10. Coordinate land surveys and maintain them accordingly.

11. Monitor and coordinate the political situation in the district.

12. Contain the activities of extremist parties, if any, to maintain law and order in the district.

13. Inform the citizen about law-and-order situations and give a clear view of any anti-social activities.

14. Meet regularly with other district departments such as police department and judicial department to review their activities.

15. In districts that border another country, inform the people about the code of other country and maintain the people's safety.

16. Inform people of situations on riverbanks and maintain riverbanks accordingly.

17. Provide licenses to businessmen for conducting their business.

18. Protect people giving information about unhealthy issues related to products and other anti-social activities.

The DC office performs these functions, however; the office has been found to be one-sided in its operations. In order to make the government function successfully, emphasis has to be placed on providing open information to all and maintaining two-way communication. It has shown in the theoretical part how open information for all and a two-way communication process could be developed. However, in Bangladesh the actual initiative of e-government and its outcomes do not match the demand. Consequently, finding the reason through empirical analysis has been the main focus of this research.

4.5   Empirical areas

For empirical data collection, three-district level administrations from three different divisions in Bangladesh have been selected based on the program "e-service." A brief discussion of these case areas is given below.

4.5.1   The district of Sylhet

Sylhet, also known as Jalalabad, is a major urban center in northeast Bangladesh. It is one of the richest cities of Bangladesh. The district is the principal city and administrative capital of the Sylhet Division that is located on the banks of the River Surma in the Surma Valley. Sylhet has a population of 500,000, making it the fifth largest city in Bangladesh. It is the pilot area for the empirical data for this research.

In terms of administrative operation, Sylhet has a long history. After the independence of Bangladesh in 1971, Sylhet started its operation as a district. At present, the district has 12 Upazilla under the direct supervision of DC. More specifically, DC operates the Sylhet district administration in cooperation with the other staffs such as an additional deputy commissioner (general), additional district magistrate (DM), additional deputy commissioner for revenue, additional deputy commissioner for education and ICTs, and additional deputy commissioner for local government. In order to facilitate services for its customers, there are different sections under each additional body. Appendix 5the different administrative bodies and their areas of work.

The additional deputy commissioner for education and ICTs is responsible for coordinating the district's e-service program. Furthermore, the ICTs section under the additional deputy commissioner is responsible the following:

1) Coordinating overall activities under the ICTs section;

2) Coordinating maintenance of all computers and networks located in the DC office;

3) Closely monitoring the server station and maintaining per the requirement in order to provide e-service to the doorstep of each individual;

4) Coordinating the e-service program between the district, Upazilla, and Union;

5) Coordinating the training of all officers and subordinates;

6) Arranging different symposiums and seminars in order to make people aware of the ICTs and applications;

7) Spreading the use of ICTs across the territory; and

8) Arranging different exercise program for the officials and other staff.

4.5.2   The district of Sirajganj

Sirajganj is a district situated in Northern Bangladesh. It is a part of the Rajshahi Division. Although the district is quite new, established in 1984, Sirajganj has a long history. In 1869, Sirajganj started its activities under the municipality act. Since then, different renowned people such as Mr. Samar Sen (also known as S. Sen) and H.S.M. Ishak have headed the municipality. Both of them performed in an outstanding way to develop the overall plot of the municipality.

At present, like the other administrative district, Sirajganj has nine Upazilla, twelve Thanas (police stations), and several Union Parishads. The DC office directly coordinates the operations of the Upazilla, Thanas, and Unions. The chief of the DC Office operates in cooperation with other officials and staffs. The officials under the direct supervision of the DC operate different sections of the DC Office. Appendix 6 presents an organogram of the district.

Here, the additional deputy commissioner of ICTs is responsible for the e-service program and other ICTs operations. The main works operated by the additional DC (ICTs) are

1) Ensuring maximum use of the applications of ICTs;

2) Ensuring the computer efficiency of all officials and staffs;

3) Promoting coordination among other units of the district such as Upazilla and Union through videoconferencing;

4) Maintaining and updating the district information archive;

5) Promoting the application of e-governance;

6) Arranging seminars and symposiums to encourage mass participation online;

7) Coordinating the e-service program between district, Upazilla, and Union; and

8) Making the e-governance application as easy as possible so that the mass of people can participate.

4.5.3   The district of Gazipur

Gazipur district is situated in the Dhaka division. This district has a long history as well. Immediately after the independence of Bangladesh in 1972, different political parties raised their voices to bring the majority area of Gazipur under one district administration. Finally, in 1978, the then president of the country announced Gazipur as a district. Like other districts, Gazipur has Upazilla (five) and Unions (43). The administration of the district, Upazilla, and Union is monitored and supervised directly by the DC of the district along with his officials and staffs. In Appendix 7, the organogram of the Gazipur district is presented.

The additional DC of ICTs is responsible for the e-service program and other ICTs operations. The works carried out by the additional DC (ICTs) in Gazipur district are

1) Ensuring maximum use of the applications of ICTs;

2) Ensuring the computer efficiency of all officials and staffs;

3) Promoting coordination among other units of the district such as Upazilla and Union through videoconferencing;

4) Maintaining and updating the district information archive;

5) Promoting the application of e-governance;

6) Arranging seminars and symposiums to encourage mass participation online;

7) Coordinating the e-service program between district, Upazilla, and Union; and

8) Making the e-governance application as easy as possible so that the mass of people can participate.

Under the A2I projects, with direct supervision of the Prime Minister's office, the district administration operates an e-service program at the district level. The main focus of this program is to process the administrative functions in such a way that the applications of e-governance are promoted all over the country. All 64 districts of the country use the same A2I program and are facilitated by the government in almost the same manner. The three district administrations in this case study have the same kind of operations with almost same the levels of operating staff. So, it is believed that the above cases are suitable for finalizing this thesis. For clarity, the national map of Bangladesh, with the case districts circled, has been given in Figure 20.
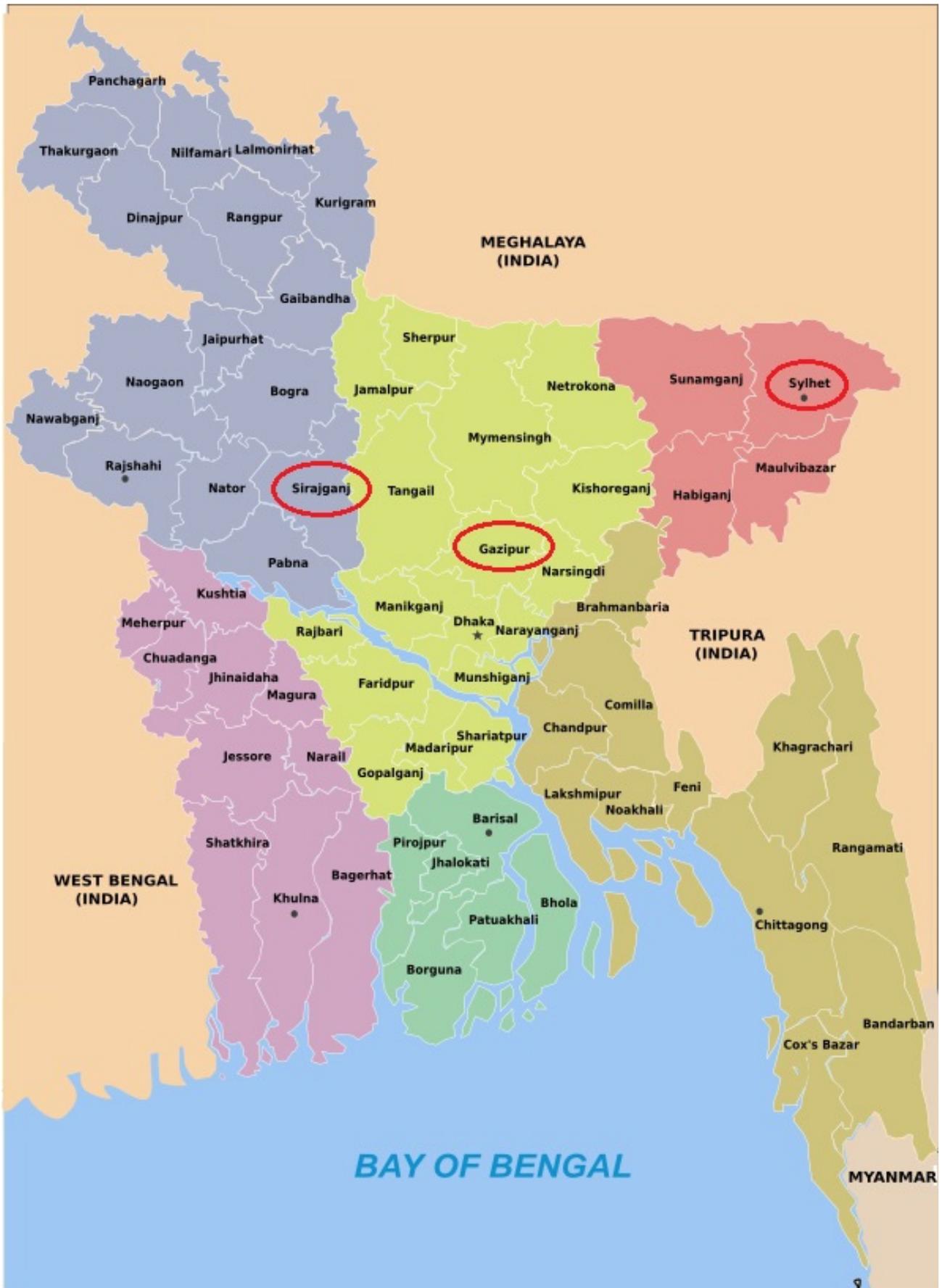
Figure 20. Administrative Map of Bangladesh (Source:http://www.bangladesh.gov.bd/)

4.6   Summary

Finally, it is appropriate to mention that the administrative cultures and structures are more or less the same in almost every part of the country (Jamil, 2007). Still the authoritarian form of administration is followed in mainstream bureaucratic operations. The nature of administrative operation is vertical, which means from the center to the field level. Field administrations only follow the policies taken in the center and guide the field level organs to implement the policies. DC Offices are solely responsible for the betterment of the vast majority of citizens; however, they have no control over policies. DC Offices only communicate with the Ministries to let them know the progress of the policies' implementation.

5 SCOPE, NATURE, AND CONSTRAINTS OF E-GOVERNMENT IN DEVELOPING WORLD: THE BANGLADESH CASE

5.1 Introduction

The same kind of reform effort in the administrative modernization process cannot be effective in all countries in the world. Most initiatives related to the administrative modernization process have failed in the past due to generalization and forced application to administrative systems. Furthermore, developing an innovative reform effort and thinking that the effort will be applicable everywhere may waste financial and other resources. Therefore, before initiating any such effort, local demands and the chain of supply should first be analyzed. For instance, e-government is a sophisticated reform effort that cannot be successful only through the application of ICTs. Without proper ICTs plans and strategies, this effort will be a great loss for any government in the world.

Most of developed and developing countries have accelerated their funds for e-government, specifically to promote the process of e-services (Asgarkhani, 2006); yet in most countries in developing world, ICTs have been used by governments and their different bodies at different levels without the proper plans and strategies to provide better and swifter services, increase efficiency and effectiveness, and increase transparency and accountability with minimum costs. Therefore, the development of ICTs has been slow but steady. The UN (United Nations, 2010, p.iii) has declared, "Many countries have made tremendous strides in the last two years, due in part to recent, exciting advances in the diffusion of technology." From UN evaluation, it appears that some countries are left behind in technology diffusion. This is a serious issue for the developing countries as technology usage is supposed to alleviate their status in terms of economic and societal contexts.

Bangladesh as a developing country is not an exception to the mainstream of e-government installation. The government of Bangladesh has initiated and implemented various e-government projects in cooperation with the donors (i.e. UNDP and World Bank) to promote administrative efficiency and effectiveness and to make the administration more transparent and accountable to its citizens. At present, the scenario is more vibrant than in the past, since the current government took over power in 2009 and was re-elected in 2014 with a slogan of 'Digital Bangladesh' to ensure that the state provides services closer to the citizens. Accordingly, the government has been emphasizing e-government in all of its administrative sectors.

The focal point of empirical data in this research is the e-government readiness of Bangladesh's public administration. However, based on the application of e-governance approaches in developing countries (Amoretti, 2007) and countries' e-government development growth in the world (United Nations, 2014), we can assume that the scenario of e-government readiness is more or less same in almost all developing countries. In order to make this research valid for the entire developing world, this chapter will first detail the status of e-government in developing countries as a whole. The status will include opportunities, challenges, and success factors. This chapter will also emphasize an outline of the e-government situation in Bangladesh since its inception into the administration.

5.2 E-government in developing countries

In general, e-government potentiality has been elaborated with the hope of transforming government services into more citizen-centric forms. Emerging nations have accepted this potentiality during their initial phase of e-government implementation. Nonetheless, over time, the concept has shifted from 'e-government—which is considered as the government of the people', towards the 'e-governance—which is considered government by the people' (Michel, 2005). Today the range of the applications of ICTs and their opportunities are expanding in every country in the world (Ndou, 2004).

Now it is widely believed that ICTs offer increased opportunities for economic development and play a critical role in rapid economic change, productive capacity improvements, and international competitiveness enhancement for developing countries. The range of choices and opportunities in these countries is expanding every day. Moreover, ICTs are believed to be powerful enabling tools to address some of the key barriers and challenges for entering the global economy and for future growth potential.

In addition, ICTs offer the possibility of not just collecting, storing, processing, and diffusing enormous quantities of information at minimal cost, but also networking, interacting, and communicating across the world (Crede and Mansell, 1998). Econometric studies have found evidence of a strong positive relationship between investment in ICTs and GDP growth. The studies have illustrated the importance of ICTs for development, both in commercial and public sector economies. During 1995-2000, investment in ICTs increased 0.5%, and the same period saw 1.3% in GDP growth per capita per annum over a number of economies (Pilat, Frank and Van Ark, 2002). Nevertheless, ICTs have represented a high risk for developing countries – the risk to deepen the digital divide and to marginalize them further with the networking revolution. It could be said that countries which fail to embrace and use ICTs for entering the global network and for addressing development needs will suffer pivotal disadvantages in the form of information poverty that could further widen the gap in economic status and competitiveness (Ndou, 2004).

Recognizing the power of ICTs, many developing countries have started building and encouraging e-strategies assisted by international organizations. These strategies are to address a wide range of economic, social, technological, infrastructural, legal, and educational issues. G8 on the Digital Opportunities Task Force and the UN Task Force on ICT Access (Digital Opportunity Task Force, 2002) have evidenced e-government as a priority based on the decisive role it would play for ICTs' accessibility. Consequently, e-government initiatives have flourished in many emerging countries such as Brazil, India, Chile, Argentina, the Philippines, and Bangladesh which have reaped the advantages and opportunities of ICTs and the knowledge of economy for collaboration, networking, better services, efficiency and effectiveness (ibid).

Basically, the impression of e-government in the developing world, like many management doctrines and reform agendas, has spread to different parts of the world through artificiality. Since the 1990s, it has been fashionable for organizations--even in the public sector--to build a website and add fancy features to it (Khan and Anttiroiko, 2014). In the case of developing countries, an important impetus for such a diffusion of innovation was the active role of international organizations in helping countries to build their own websites or portals with the aim of connecting them to global 'pace of flows' and helping them to facilitate local democracy, service provision, and development. E-government has become to almost all developing countries a genuinely exogenous driver of development, and it has for the same reason caused a host of fundamental problems (i.e., hacking important government resources).

An important generic issue is how global trends, especially in global and regional non-governmental organizations, affect the developing world, especially Southeast Asia, through development aid and expert work (cf. Wescott, 2011). Thus, the World Bank, UNESCO, OECD and a range of other international and regional non-governmental organizations have imposed their ideas about e-government on developing countries with varying outcomes. Essentially, they claim that even if the infrastructure may not be particularly

good in many South and Southeast Asian countries, the attitudinal readiness to use e-government services is fairly high (e.g. Rokhman, 2011). Having said that, it is equally true that developing countries require solutions that take their special conditions into account. For example, Wagner and others (2003) have concluded that simple knowledge management (KM) solutions work much better than traditional enterprise solutions in developing countries.

The case of e-government in Bangladesh has a particular resonation with the general developing country dilemma in e-government endeavors. Bangladesh reflects the usual case among developing countries in which the country's focus has been on the relatively easy phase of e-government implementation through developing websites, piloting a few applications, and putting these services online. E-government adoption from visually impressive web sites to isolated applications is a relatively easy step. Deeper e-transformation, service innovations, and cross-agency integration are much harder. In terms of e-readiness, the country implies a shift from technology management in a simple setting with limited requirements, whereas a more transformative step requires that attention is directed to political and institutional leadership and change management (Hanna, 2009). In general, this reflects the fairly general pattern of the development of e-government, in which "after an initial e-government presence, governments adopt e-government slowly and incrementally" (Courseyand Norris, 2008, p.533).

5.3   Constraints of e-government in the developing world

As has been pointed out, the application of e-government is different in developed and developing countries, and developed countries are clearly ahead in e-government growth. So, in order to achieve the benefits of e-government, developing countries have more challenges to address. However, the basic frameworks of e-government are almost same in developed and developing countries. Grant and Chau (2005) have offered a generic rather than country-specific framework of e-government containing five categories, which are: service delivery (service automation and information, interactive services, CRM—customer / citizen relation management), citizen empowerment (e-participation / democracy, collaboration / partnership, CRM), market enhancement and development (collaboration, partnership, globalization), exposure and outreach (globalization, marketing e-government), infrastructure consolidation, and standardization.

On Grönlund (2007) has given four important aspects of the use of ICTs in the operation of government and promote the benchmark of governance. The aspects include system perspective, governance system, social aspects, and the relation between government and citizens. System perspective refers to all government agencies together rather than individual organizations or subjects of government organizations (an efficiency perspective). The governance system is an effective aspect where the system should be effectively operated between social and citizen aspects.

Andersen and Henriksen (2005) raised four general themes for the application of ICTs and facilitation of the government promoting e-government. These are conceptualization of e-government, the government's role in technology diffusion, a government administrative e-service focus, and democracy and involvement of citizens.

These frameworks will be beneficial for the government and citizens if the proper readiness methods have been followed. Moreover, in most developing countries, e-readiness should be more sensitive as the governments are vulnerable to corruption, inefficient bureaucratic systems, and so forth. Therefore, focus on factors towards the capabilities of e-government convergence in developing countries should be given along with focus on the factors of environment, resources, infrastructures, and e-leadership (Banerjee and Chau 2004).

Here the environmental factors divide into political environment, social structure, economic condition, and demography. It has been mentioned that developing countries are suffering from the lack of a sound political atmosphere with inefficient, outmoded, and corrupt bureaucratic processes. The education level of citizens is low, and societies are not open. Moreover, in most developing countries, there is an unexpected level of economic development through the installation of e-government and the demographic is largely rural. Resource factors have been divided into funding and human capitals. In most developing countries, there is no stability in funding the application of e-government, which also impedes the development of skilled human resources.

Infrastructure refers to connectivity and services. Poor countries have a lack of Personal Computers (PCs), internet connections, and telecommunication lines. Consequently, they lack the infrastructures for internet-based services provided in G2G, G2C, and G2B.Finally, e-leadership refers to administrative procedures for decision making based on transparent laws and regulations through the use of necessary ICTs which are in most cases missing in developing and underdeveloped countries.

Although these are the main e-government challenges in developing countries, eventually, an in-depth study will be required to assess the current situation. However, in this research, the general criteria of e-government will be used to analyze e-readiness from the empirical part of the research. As it has been mentioned that the main focus for this research is Bangladesh's public administration, the present scenario of e-government in Bangladesh will be discussed next.

5.4   E-government in Bangladesh public administration

In Bangladesh, e-government initiatives have been started with specific attention to government and its administration. The areas of administrative e-applications are changing with the vast e-readiness efforts. The government of Bangladesh adopted a policy of science and technology for the first time in 1986, with a vision of transforming public services to the citizens and businesses; promoting democracy through achieving the highest level of transparency, and accountability in the government and its administration; making Bangladesh a middle-income country; and enhancing social equity. The introduction of e-government by promoting and emphasizing ICTs has gained momentum since early 1997 (Hossain, 2006), but the desired level of internet-based operation in Bangladesh's government has yet to be achieved (Khan and Alam, 2012).

It is important to clarify that the government of Bangladesh first formulated its ICTs policy in 2002, and the main aim was to build a nation driven by ICTs by the year 2006 (Ministry of Science and ICT, 2009).The ICT policy of 2002 pertains to the following issues relating to e-governance and its applications:

- The government shall use ICTs system within the public administration to improve efficiency, reduce wastage of resources, enhance planning, and raise the quality of services.

- Government shall implement wide-spread ICTs systems to provide nationwide coverage and access by any citizen to the government databases and administrative systems which can be used to extend public services to the remotest corner.

- All Government ministries, divisions, departments, autonomous bodies, and all district headquarters, Upazilla headquarters, and Union Parishad offices must be networked to the National Data Resource Centre (NDRC) in the shortest possible time. The center shall be a system of national databases having capacity to store and supply rapidly all necessary information on the economic, cultural, and social situation of the country.

- Each Ministry, Division, Government body shall create an ICTs Cell, to be managed and run by well-trained ICTs professionals to plan, coordinate, and implement ICTs projects and services. A

special compensation package comparable to that of the private sector shall be introduced to encourage ICTs professionals.

- All Ministries, Divisions, agencies of government, and autonomous organizations shall set up web sites where all policy documents and information relevant to the public shall be posted as early as possible and regularly updated. There will be a web portal for the Bangladesh Government from which links will be provided to web sites, e-forms, e-procurement, e-recruitment, e-results, and so forth.

- Government will introduce and promote ICTs-based services like G2G (Government to Government), G2E (Government to Employee), G2C (Government to Customer), and so forth.

- Preference shall be given to ICTs-literate candidates for the purpose of recruitment in public offices. ICTs-literacy shall also be evaluated in the ACR (Annual Confidential Record) of officials to ensure utilization of ICTs in public services.

- In order to establish a database on the secondary schools that are providing computer training at a grassroots level, MIS will be introduced.

To enable the ICTs policy of 2002 to succeed, the Ministry of Planning of the government of Bangladesh launched an 890 million taka (Bangladeshi currencies; approximately US$ 12 million) for project Support to ICT (SICT) in 2003 (Bhuiyan, 2010). However, six years later, it has been seen that the outcomes of the project were not remarkable compared to the expectations for the project. The Ministry of Science and ICT, (2008) has observed the following five drawbacks:

1. Underdeveloped Internet facilities: the government of Bangladesh has very limited internet facilities to operate their functions online.

2. Inability of responsible authority: The authority responsible for ICTs and related issues has been unable to achieve the goals of the 2002 ICT policy.

3. Inadequate capacity: Due to the lack of infrastructure to harness the benefits of ICTs for improving management and the processes of the public sector, the ultimate goal is still in question.

4. Limited usability: Due to the limited access of civil servants to Internet and e-mail, the vast e-government application in administration is limited.

5. Improper planning: ICTs planning and its strategic actions are not properly maintained for the overall success of the 2002 ICT policy.

Later, in order to overcome this situation, the government appointed two new partners, Spinnovation and DNet, to develop a short, medium and long term National ICT Action Plan or Roadmap for Bangladesh on the basis of the National ICT Policy 2002 (ibid). In April 2009, after the revision of detailed action plans to use ICT in the development efforts of Bangladesh and to development the ICT sectors of Bangladesh, the government adopted a revised plan that emphases the following areas (Chandan, 2015):

- Expanding and diversifying the use of ICTs to establish a transparent, responsive; and accountable government;

- Developing skilled human resources;

- Enhancing social equity;

- Ensuring cost-effective delivery of citizen-services through public-private partnerships; and

- Supporting the national goal of becoming a middle-income country within ten years and joining the ranks of the developed countries of the world within thirty years.

Based on the above recommendations, the government has taken up new initiatives to overcome the drawbacks of promoting e-governance in Bangladesh (UNDP Bangladesh, 2008). These initiatives have been undertaken in two forms with the cooperation of UNDP. The forms consisted of Assistance to the SICT project (presented in the 2002 policy as SICT), and secondly, Access to Information (A2I). These new initiatives have focused on specific benefits to be gained, that is, to make government functions easier and more convenient for citizens and different stakeholders and for the overall development of the society and country as a whole. Moreover, the basic purpose of the A2I program was to promote e-services to citizens and other stakeholders such as NGOs and businesses. Since the empirical data of this research has been collected based on the e-service program of the government of Bangladesh, details of those e-services will be elaborated on below.

5.4.1 E-services

Although Bangladesh's government has yet to formulate an integrated national strategy to implement effective e-services for its citizens, visible movement toward success has been noticed. The government has formed "The National Task Force and the Executive Committee on ICT" for providing overall guidelines and direction to implement e-services in Bangladesh. Additionally, a vision has been set for future development of ICTs and their application in government administration. The future initiatives for ICTs in Bangladesh are more progressive, as the ruling authority has initiated a massive program to turn the country into a digital one by 2021 (Board of Investment, n.d.).

The momentum of e-government initiatives will be visible if we analyze the annual budget of the government of Bangladesh. To enable the success of the SICT and A2I projects, the government has allocated a handsome amount of its budget (cf. Annual Budget, 2011-12). Four e-laden areas are the focal point: a) e-governance; b) e-learning; c) e-commerce; and d) e-citizen.

5.4.2 Efforts to promote e-services

In 2008, the election manifesto of the incumbent Awami League government (now the ruling political party) declared a desire to make Bangladesh digital by 2021. This extraordinary political initiative has provided an opportunity to use ICTs to further development, reduce poverty, and improve citizens' quality of life. The vision of Digital Bangladesh (DB) is being developed in cooperation with the United Nations Development Programme (UNDP). Both the government and UNDP funded the Access to Information (A2I) Program that is based in the Prime Minister's Office (PMO) of the government of Bangladesh. This program envisions utilizing ICTs to increase socio-economic development concentrating four pillars: (i) developing human resources for the 21st century, (ii) connecting citizens in ways that are most meaningful, (iii) taking services to citizens' doorsteps, and (iv) making the private sector and market more productive and competitive through the use of ICTs (Access to Information Programme, 2009). The two key pillars of the DB vision— "connecting citizens" and "facilitating pro-poor services at the citizens' doorstep" — if successfully implemented will exemplify innovative and pluralist service delivery models that cater to the poor (ibid).

The "Global Information Technology Report (GITR) 2009-2010" prepared by The World Economic Forum (WEF)-INSEAD reviewed three key indicators of ICTs in Bangladesh: (a) Environment (infrastructure, market, and political), (b) Readiness, and (c) Usage. These indicators gauge preparedness to

leverage the advancement of ICTs for increased competitiveness and development in general comparison to other nations, where Bangladesh has ranked 118 out of 133 countries. The country's overall low ranking highlights the urgent need for improvements in areas such as (i) Improving the regulatory framework, (ii) Developing the human resource capacity, (iii) Providing greater access and increasing usage of ICTs by citizens, and (iv) Investing in ICTs infrastructure (ibid).

However, in order to improve the situation, donors are working with different ministries and divisions at different administrative levels in Bangladesh. The larger initiatives by the donors in administrative reforms are as follows (Sobhan, 2010):

Energy and environment: The Ministry of Environment and Forest of the government of Bangladesh has initiated several projects with donations from CIDA and ADB. The highlighted projects in these sectors are:

- Bangladesh Environmental Institutional Strengthening Project (BEISP),

- Sustainable Power Sector Development Program (Program),

- Urban Public and Environmental Health Sector Development Program (Program Loan), and

- Modernized and computerized accounting systems (IT to enhance financial management, improve tax collection, and expand the tax base to strengthen municipal finances).

Agriculture: In this sector, the Ministry of Local Government and Rural Development has initiated projects to control climate change by the application of ICTs with ADB's donation.

Finance and commerce: A lot of projects have been undertaken in order to automate the system in the financial sector by different government bodies, e.g., Bangladesh Bank, Credit Information Bureau, Dhaka Custom House, Ministry of Commerce, and BEPZA (Bangladesh Export Processing Zone Authority), with the aid of various donors such as, DFID, IFC, BICF, and EU. The focus projects which have been taken are:

- Regulatory and Investment Systems for Enterprise Growth in Bangladesh,

- Bangladesh Remittances and Payments Partnership,

- Promoting Financial Services for Poverty Reduction in Bangladesh,

- Dhaka Custom House Automation,

- Registrar of Joint Stock Companies Automation,

- Automation of BEPZA,

- BOI Online Registration System, and

- Bangladesh Investment Climate Fund.

Transport and communication: Here, Bangladesh Roads and Highway, Chittagong Port Authority, and the Bangladesh Telecommunication Regulatory Commission have initiated projects with the cooperation of World Bank, JICA, and ADB. The highlighted projects are:

- Chittagong Port Trade Facilitation Project,

- Telecommunications Technical Assistance Project,

- Telecommunication Network Development Project, and

- Preparing the Chittagong Port Trade Facilitation Project.

Legal: The Board of Investment; Department of Patents, Designs and Trademarks; and other government bodies have initiated projects in cooperation with CIDA, IFC, and EU to strengthen the e-government legal system through the

- Legal Reform Project,

- E-registry of rules-regulations and license, and

- Intellectual Property Rights Project.

ICT: For the success of e-government readiness, upgrades of ICTs are essential. Different government bodies have undertaken projects with donations from EU, JICA, and ADB for the development of ICTs in the government of Bangladesh. The initiated projects are:

- IT Upgrade,

- Bangladesh Technology Information Programme (BITMAP),

- Pilot project for Software export to Japan, and

- South Asia Sub regional Economic Cooperation (SASEC) Information Highway Project.

Education: Education is a compulsory e-readiness requirement for the success of government. At present, ICTs education is provided through training programs by government training institutions. However, the government has a long-term vision in the ICTs sector which encourage its top officials to incorporate ICTs education by different Ministries and Directorates with direct cooperation of donors such as EU and ADB. The projects undertaken in this sector are:

- Technical and Vocational Education and Training (TVET) Reform,

- Capacity Development for Madrasah Education,

- Preparing the Secondary Education Sector Improvement Project II,

- Post-literacy and Continuing Education Project, and

- Teaching Quality Improvement in Secondary Education Project.

Quality Control/ M and E (Monitoring and Evaluation): The International Terrestrial Cable (ITC) and Implementation Monitoring and Evaluation Division have initiated the following projects in cooperation with EU and ADB:

- Bangladesh Quality Support Programme and

- Strengthening Results-Based Monitoring and Evaluation Project.

Infrastructure development: The Ministry of LGED has initiated the Second Rural Infrastructure Improvement project with the support of ADB for the development of an infrastructure network and other websites.

The above projects are to create a computer lab, websites for the Ministries, ICTs component development, ICTs capacity-building training, and so forth. For the time being, with a view of adopting ICTs and e-government over the years, Bangladesh has undertaken and implemented various projects and programs. As a result, there are some visible operations and impacts of e-services in the public affairs that have indicated the successful development progress of e-government initiatives. In general, some of the major initiatives and projects that are already in application level are outlined below in brief (Khan and Alam, 2012).

Ministry of Finance: This ministry has customized software for budget planning, sensitivity analysis, impact analysis, financial projections, and various reports.

National Board of Revenue (NBR): The NBR has computerized many of its activities for its customers. Moreover, NBR has focused now on computerizing its revenue budget procedure.

Ministry of Science and ICT: This ministry has sole responsibility for most e-government projects and programs. Currently the ministry of science and ICT is creating websites containing information about various ministries.

Ministry of Communication: An online searchable database has been developed by this Ministry to facilitate its contractors and tenders. It has also created a Project Monitoring System for tracking the progress of projects. This Ministry has databases of 9,011 bridge structures and 20,000 km roads.

Bangladesh Planning Commission: The planning commission is developing software for interfacing between development and the revenue budget. The IT system at the Bangladesh Planning Commission has the following features:

- File sharing facilities through LAN;

- Video Conferencing;

- Electronic Notice Board;

- Digital Library containing policies of Bangladesh in searchable format, minutes of meetings, and other useful documents;

- ADP database facilities; and

- Software for tracking movement of files.

Bangladesh Bank: This Bank is the central Bank of Bangladesh. It has started its computerized functions through automation. It is now one of the most fully computerized public institutions in the country. The current system automates most of the bank's operational processes and some of the most important strategic processes, including monitoring of commercial bank transactions.

Electronic Birth Registration System: UNICEF has supported this facility. Through this cooperation, the Rajshahi City Corporation (RCC) has introduced the Electronic Birth Registration System.

Government Forms Online: The Prime Minister's Office has made possible access of government forms online though a project funded by UNDP Bangladesh. This saves not only time but also the cost and hassle associated with travelling to government offices located at a distance.

MIS for Project Management and Transparency: In cooperation with the World Bank, the Roads and Highways Department and Ministry of Communication of the government of Bangladesh have developed this MIS as a component. The e-government initiative of RHD (Roads and Highways Department) involved the launch of a website that provides a variety of information, data, and notices to users. Users of this website include the private sector, related government offices, ordinary citizens, and donor agencies.

National Web-Portal: Immediately after recognizing the necessity of escalating e-government through the application of ICTs, the government of Bangladesh initiated projects and programs in a faster manner. The first project in 2002 satisfactorily emphasized the main target of e-government and thus promoted e-governance. The different phases of the application of ICTs in Bangladesh will be summarized here (undpegov, n.d.):

Phase1 2000: Formation of an ICT Task Force

Phase 2 2002: First National ICT Policy

Phase 3 2003: Reinforced support to the ICT Task Force, SICT

Phase 4 2004: Comprehensive Action Plan

Phase 5 2006: A2I Programme

Phase 6 2007: E-governance Horizon Scan Report

Phase 7 2008: Vision for Digital Bangladesh

Phase 8 2009: Revised National ICT Policy, ICT Act, and Right to Information Act

Phase 9 2011: Evaluation of the first phase of A2I Programme

It is important to note here that the main concentration of e-services and thus e-government is to prepare a "Single Portal" for necessary information sharing between government and its targeted groups. Before 2006, the website of the Bangladesh government was a static HTML-based website with much outdated content. The sitemap was not easy to follow, and it was quite burdensome to update content on that static web site. The Access to Information (A2I) project of the Prime Minister's Office initiated a project that replaced the old web site and created a combined portal for all government services and communication with its different customers. This web portal is the first government website in Bangladesh oriented toward citizen services (Minges, Raihan, and Raina, 2009). The prime goal of the project was to replace the static HTML web pages with a dynamic, robust, multilingual web portal. Moreover, this included the main target of sharing information in national and local areas in country in a way that would be easy for citizens to access, facilitating the democratic process through two-way communication in a way that was easy to maintain (National web-portal of Bangladesh).

The main purposes of the A2I program were to

1) Ensure that new initiatives and programs on e-governance operate within the context of national development priorities and mainstream ICT for development (ICTD) into national development plans;

2) Support the development of innovative ICTD programs and provide technical assistance for monitoring and evaluation;

3) Develop a national e-governance vision and strategy to harness digital opportunities for development in close consultation with stakeholders.

5.4.3 Constraints of e-government/e-services in Bangladesh

The evolution of e-government in Bangladesh has different phases. The three basic phases of e-government evolution in Bangladesh (Sobhan, 2010) are as follows:

Phase I: Late 1990s-2006, infrastructure building

Phase II: 2006-2009, isolated e-services

Phase III: 2010-onwards, integrated and transactional services and connected governance

Though Bangladesh has made some remarkable achievements and progress over the years in the field of e-government, several challenges remain. Rahman (2005) has identified the most important challenges for e-government in Bangladesh as (i) infrastructure development, (ii) service implementation, (iii) human resource development, and (iv) operations and maintenance.

As the IT/ICTs (IT or Information Technology is often synonymous with ICTs) are the very important prerequisite for successful e-government operation, the development of IT-related resources is considered one of the most important challenges for the government of Bangladesh. Accordingly, following are the major growing challenges for successful adoption of ICTs into government in Bangladesh.

5.4.3.1 Lack of regulatory/legal framework

The regulatory/legal framework in Bangladesh has not yet been modernized to accommodate the growing needs of the electronic world. In government offices, e-mail still has no official value and cannot be legally considered an acceptable mode of communication. There is very poor application of laws to protect against cyber-crime; neither are there any laws for electronic authentication.

5.4.3.2 Inadequate Human Resource Capacity

For a country of more than 160 million people, the number of IT-trained people in the country is meager with about 1,630 incoming students at public universities, 2,370 at private universities, and 1,120 at polytechnics. On top of that, most of the well-trained IT graduates of the country leave since there is little scope for them in Bangladesh in terms of professional development.

5.4.3.3 Preparedness of Local ICT Companies

Most local software companies still have not developed the level of expertise or professionalism needed to handle large-scale integrated e-government projects. Although the scenario is rapidly changing in terms of needed technical expertise, the companies are still lagging behind in terms of professionalism and experienced management.

5.4.3.4   Supply of Electricity

With about 30% of the population of Bangladesh having access to electricity, the question of providing access to computers to a large section of the population seems like a two-step problem. Even the fortunate 30% have to suffer daily power cuts. Since there are as of yet no low-cost methods of running computers without electricity, the issue of electricity has to be solved before a widespread dissemination of ICTs is possible.

5.4.3.5   High-cost, Low-reliability of Internet Access

The cost of internet access in Bangladesh is very high and unreliable. There are virtually no dial-up options outside major cities since long distance calls are exorbitantly expensive. Internet access and availability of PCs are disproportionately concentrated in Dhaka. Most ISPs are dependent on VSAT transmission, and the bandwidths used vary from 64Kbps to 4Mbps. 60 percent of ISPs are between 128Kbps and 1Mbps. This is far below what is required, even by current demand. The current dialup internet connection is rather poor. Connection between 21Kbps and 31Kbps is the speed in home use.

5.5   Summary

The success of e-government in developing world is far from realized. The challenges are so big and, of course, unavoidable. For instance, it has been noticed that the readiness challenges in developing countries are surrounded by infrastructure, legal, political, and human resources issues. These issues are basic, and Bangladesh cannot achieve possible outcomes in e-government or e-services without solving them. Moreover, analyzing the existing scenario of e-government in Bangladesh, it may be said that Bangladesh has made remarkable progress among developing countries in the world in general and South Asia in particular. However, these achievements are not sufficient. The country is not yet prepared to provide public services to citizens. Although the government is providing a few of the services to its citizen, most of public services are now in the preparatory stages of e-government. However, initiatives and emphasis on e-government and ICTs on the government's part is appreciable. In order to achieve the highest stage of e-government maturity, Bangladesh needs to be more concerned about the overall implementation of the initiatives it has undertaken and maintain them properly.

6   EMPIRICAL DATA ANALYSIS

6.1   Introduction

In order to draw conclusions, analysis of the empirical data is the most important basis for any case study research. In the methodological section, qualitative data compilations and methods of analysis were outlined. There was noted that qualitative data has a great impact upon case study research and its analysis. A case study can also be useful in quantitative analysis by focusing on statistical data, whereas qualitative data with its open-ended empirical questions could be the basis of some inner saying from the participants. In most cases, quantitative data has been gathered with lists of closed-ended questions, where the respondent must answer the given questions. However, qualitative data, based on open-ended questions, opened the gap between the questions and the answer and widened the research arena to reveal additional details and enable analysis of core events.

In chapter two, detailed theoretical frameworks were outlined. Here, in this chapter, empirical data will be analyzed. It has been sketched in the theoretical part that in order to mitigate corruption, speed up economic progress, make the administration efficient and effective, increase the transparency and accountability in the administrative process, promote the effective participation of citizens and other stakeholders, and support the overall development of the administration, the government and its administration play a vital role. Therefore, different reform efforts have been undertaken by governments all over the world to cope with administration in a changing world and make governments well-organized for performing their duties.

Reform efforts through e-government have quickly spread globally with or without the benefits of the applications. The benefits from e-government are on one hand, far reaching, and on the other hand, unexpected. They are far-reaching in the sense that e-government application includes so many steps to climb to get the utmost benefits. The steps range from the context, including the readiness of different criteria, i.e., ICTs, management, and so forth to the creation process, in which the policies and strategies related to the application must be proficiently implemented so that the context will progress perfectly, to the outcome in which the content will be gained. In general, it has been seen that the e-government context contains some specific issues that are sophisticated and expensive in the long run. Moreover, the context is not related to only one issue; there are many other related issues such as computers, hardware, and software. Similarly, the issues of management are not only the management issues but also includes the need for specific training for specific areas, proper grounds of exercise, and so forth. So, this shows that countries in the developing world struggling with political tensions, financial crisis, and a lack of expertise and research, may expect fewer benefits from the most sophisticated applications of e-government.

E-government has some specific characteristics, and its functions rotate between different government and non-government bodies. Moreover, the effort has specific levels of maturity. The maturity levels are based on the readiness of different sectors. The government is one of the most important sectors of e-readiness. Chapter one clearly outlined the aims, objectives, and questions of this research. Therefore, this chapter will assess the government administration's readiness to serve government functions online and promote e-government. Here, empirical analysis will pertain broadly to both primary and secondary data.

6.2   Qualitative research to analyze empirical data

Before delving into the empirical fields, different perspectives on research methods have been generated. Identifying the most suitable one was the real dilemma in this research. On the basis of the research questions and the area of empirical data, qualitative methodology and suitable methods for analyzing the empirical data of this research were selected. It has been already rationalized that, for this specific program, case study methods of qualitative methodology are most suitable. Moreover, during the empirical data collection under this method of research, data was collected in the proper manner. With the exception of some hassle with selecting and convincing employees to serve as respondents, most of the participants were finally friendly and helpful for the research work. Moreover, before fieldwork began, the participants were assured on ethical grounds. The two most important ethical issues involved were:

First, keeping the privacy of the participants: since the case in this research is a government organization, information from individuals was kept secret as much as possible; and

Second, ensuring confidentiality of the documentation: if any document was confidential, it was treated in proper manner.

6.3   Selection of the case and the informant

District level administration was selected as the case for this research to determine the actual state of e-government in Bangladesh. However, e-government is a vast application and could not be studied by a single research work; therefore, one specific program called 'e-Services' was the focus of the empirical data collected for this research. Under this program, the government has intended to provide services online and thus promote e-government. This is a vast governmental program, from central to rural-level administration. The program's task is to provide online services via the portal. It is operated by the Prime Minister's office in cooperation with UNDP.

Bangladesh is a country in which more than 70% of people live in rural areas (Priyodesk, 2012) and are attached to district level administrations. The entire district has an e-services program operated under the direct supervision of the Deputy Commissioner. With little exception, the program of e-service, through the A2I project, is the same in all districts, both theoretically and practically. Theoretically, the A2I project is the same for every level of government administration. Practically, the most issues with e-readiness in terms of e-government have been overseen by the central level, and in most cases, the central level is the hub of all district administration. The degree of the allocation of funds and the training facilities are almost the same in every individual district. Finally, the influence and the preparation for e-government is so controlled by the center that the district portal has been prepared by centrally-appointed technical personnel.

In the pilot of this research, the first step was to gain permission to enter the case area and find the respondent. Through discussion with the authority, the researcher finally received permission to visit the case area frequently and collect data. The authority gave permission to collect data and suggested other responsible authorities to help to smooth the data collection process. The same method was followed in every case area. Although the cases and the respondents were different to some degree, for example in location and personal behavior of the respondent, the overall administrative pattern was quite similar in every district level administration.

Finding the respondents was a challenging task because of the restricted government bodies. In most cases, the official thought that he or she might be in trouble. Proper assurances were provided to maintain the

secrecy of respondents' identities (e.g., names and designations). Moreover, they were informed that the authority permitted this research, which eased their tension. Most respondents were not comfortable with allowing the interview to be recorded. In those cases, pen and paper were used to collect data. The interview process was slow and lengthy, as all the information needed to be correctly written.

The first person met in each case context was considered the key indicator of a further respondent for the research. In every case, there were some employees (second or third-grade employees) who directly relate to citizens and handle the technical issues of e-readiness relative to the e-services program. They were considered key participants for this research and interviewed accordingly. They were also considered the information tank for this research and provided a great deal of information about the government's readiness for e-government. In every case area, around ten participants were selected, and more than half of them were directly related to the e-service of the respected district. In Table 11, numbers of interviewees from different units of administration are outlined.

Table 11. Selection of respondents

Area of empirical data	Top management	Middle management	Support staff
Sylhet	2	3	5
Sirajganj	2	3	4
Gazipur	2	3	5
Total respondents	6	9	14

6.4   Reality of the current e-government context in Bangladesh

Before analyzing the empirical evidence, it is worth mentioning the current political atmosphere, available funds, and existing legal situations relative to the e-government program in Bangladesh. It was mentioned in the theoretical chapter that the governing process generally follows one of four governing styles. Bangladesh follows the basic governing type, which is hierarchical. If we consider the e-government application, we see that in the hierarchical e-government models, the central government has controlled the administrative system. The way of exercising power is vertical; however, this directly contradicts the application of e-government.

This research has focused on the readiness of the e-government context (e.g., ICTs and trainings) to promote the process of e-government application. Here, we know that the readiness on the basis of **access,** i.e. infrastructures and services; **capacity,** i.e. social factors, economic factors, and the policy factors; and **opportunities,** i.e. opportunity penetration and specific applications; must be ensured to reach the highest, most mature level of e-government. It has been seen earlier that e-readiness means to promote three criteria inside and outside the government. Since the government operates its services for the people, in addition to government e-readiness, readiness in other areas such as homes, businesses, and schools is also necessary. Moreover, e-readiness approaches are different in different country contexts in the world. What may be good for developed countries may not be suitable for the developing world. Developing countries have so many other problems without considering the problem of strategies and policies of ICTs. They lack electricity, proper internet connections, a stable political system, and more.

In particular, the instable political system negatively affects the administration. The administration may have the opportunities and facilities for the adaptation of the innovative mechanisms of reform initiatives,

but in most cases, the political atmosphere does not support the administration in changing its process of operations. Most of the political parties in hierarchical administrative settings try to hold their power and make administrative bodies direct followers. Therefore, the political parties have directly or indirectly opposed any innovation and adaptation in the process of administration. In front of donors such as the UN and World Bank, the ruling political party shows a positive attitude; however, the proper initiative for the implementation of the innovations has never been adopted. This pattern of political rhetoric unmatched by action is the basis of the empirical analysis of this thesis.

Since the inception of e-government application, the government of Bangladesh has allocated funds for it each year. On the whole, the funds have been allocated for the specific purposes. However, in reality, the allocation of these funds has not resulted in the expected benefits. Furthermore, in order to continue the application, new funds have been allocated with a new hope. For instance, we could go through the first adopted ICTs policy that from 2002. In it, the government announced a target to install ICTs into the government and to achieve expected benefits. However, after the first review of the projects, the outcomes were minimal when compared to the expectations. Subsequently, the government allocated new funds for the application to make it successful (cf. Ministry of Science and ICT, 2008)

At present, under the new initiatives, the government has announced a vision for 2021. By the year 2021, the government is expecting the country to be fully automated and produce a sound e-government atmosphere. However, has it been seen that the application of e-government is only the automation through ICTs, or is it more than that? E-government is definitely more than automating processes. The empirical findings will guide us toward what else the government should initiate for the success of its e-government application. The funds allocated by the government since its inception are outlined in Table 12.

Table 12. ICTs policies and allocated funds in Bangladesh (Ministry of Science and ICT, 2009)

ICTs policy	Allocated funds (in Bangladeshi currencies)
ICTs policy 2002	890 million taka (approximately US$12 million)
ICTs policy 2009	40 Crore (approximately US$5.2 million)

On May 10, 1999, the government of Bangladesh formed the National Information and Communication Technology Policy Implementation Committee (NICTPIC) to provide a policy for the government. Under the recommendation of the committee, the government announced the 2002 ICT policy. In the year 2008, another committee, the National Information and Communication Technology Policy Review Committee (NICTPRC), reviewed the implementation of the 2002 ICT policy. After the revision, the committee proposed a new policy to implement fully digital Bangladesh by 2021 (cf. Ministry of Science and ICT, 2009).

This new policy has been justified based on the constitutional rights of citizens. In the section 19 of the Constitution, two instructions securing the right of the citizen are announced:

1) Equality of information for each citizen should be ensured by the government, and

2) In order to mitigate social and economic imbalance between citizens, ensure rightful distribution of properties among citizens, and ensure economic development through proper opportunities in every corner of the Peoples Republic, facilities all citizens, the government will take proper action.

Moreover, the government of Bangladesh has announced Acts to protect ICTs and their application from any misuse. In Table 13, the Acts to protect from any misuse and secure the right of citizen are shown:

Table 13. ICTs Acts to promote sound e-government in Bangladesh (Hasan, 2014)

ICTs Act and Amendment	Year
ICT Act 2006	October 2006
Amendment of the Act 2006	October 2013
Right to Information Act	2009
Information and Communication Technology (Amendment) Act	2009
Bangladesh Hi-tech Park Authority Act	2010
Telecommunications Act	2010
Bangladesh Telegraph and Telephone Board Act	2009
Pornography Act	2011

ICT Act 2006 provided legal recognitions and security for information and communication technology. The Act, undertaken by Parliament, received approval from the President on October 8, 2006. The Act has nine chapters in which different issues related to ICTs have been described and clarified accordingly. Chapter one describes the preliminary issues of Act. At this point, issues related to the digital signature, definition of electronic, digital signature certificate, electronic form, electronic gazette, electronic record, the internet, electronic mail, data message, website, computer, computer network, subscriber, civil procedure, penal code, verification, and so forth have been covered. So, we could say that the general issues related to e-government have been detailed here. Moreover, the enforcing area has been defined in this chapter.

Chapter two of the Act describes the digital signature and the electronic records. Here, clear indication of the authenticity of the electronic signature has been established. Moreover, this chapter shows how to recognize the digital signature. The government holds power to give the digital signature, and the authority can be provided only by the government. Anyone not abiding by the rule will be penalized. The digital signature and the procedure have different types, manners, formats, control processes, and procedures to ensure the integrity, security, and confidentiality of electronic records and payments. Chapter three of the 2006 Act covers the attribution, acknowledgements, and dispatch of electronic records. Attribution specifies the originator of the electronic records, for instance, who has the authority to act, how the record will be operated, and so forth. Acknowledgement points to the method of receiving the electronic records. Finally, the time and place of dispatch and receipt of electronic record are mentioned. Here, the time to enter in a computer and the time to receive an electronic record are determined.

In chapter four, the structure of electronic records and digital signature is prescribed. In chapter five, the controller and certifying authorities' descriptions are given. Here, the functions of the board of controllers are outlined as

- Exercising supervision over the activities of the Certifying Authorities;

- Laying down the standards to be maintained by the Certifying Authorities;

- Specifying the qualifications and experience which employees of the Certifying Authorities should possess;

- Specifying the conditions subject to which the Certifying Authorities shall conduct their business;

- Specifying the contents of written, printed or visual materials and advertisements that may be used in respect of a Digital Signature Certificate;

- Specifying the form and content of a Digital Signature Certificate;

- Specifying the form and manner in which accounts shall be maintained by the Certifying Authorities;

- Specifying the terms and conditions subject to which auditors may be appointed and the remuneration to be paid to them for auditing the Certifying Authorities;

- Facilitating the establishment of any electronic system by a Certifying Authority either solely or jointly with other Certifying Authorities and regulation of such systems;

- Specifying the manner in which the Certifying Authorities shall conduct their dealings with the subscribers;

- Resolving any conflict of interests between the Certifying Authorities and the subscribers;

- Laying down the duties and responsibilities of the Certifying Authorities;

- Maintaining computer based databases, which—

    - Contain the disclosure record of every Certifying Authority containing such particulars as may be specified by regulations and

    - Shall be accessible to the member of the public;

- Performing any other function under this Act or Codes prepared under this Act.

Chapter six of the 2006 Act 2006 describes the duties of subscribers with emphasis given to the security procedure, digital signature certificate, and safety measure of the subscriber. Chapter seven addresses breaching of rules, prevention, and penalties of the ICTs. This chapter clarifies the power of control, the emergency power of control, the power to announce the protection system, and the penalty for failure. The power of control has been vested in the Certifying Authority in order to protect the sovereignty, integrity, and security of Bangladesh.

In the case of penalties, there is an administrative order of financial penalty for failing to submit any given document, return, and report under the provision of the Act. An additional penalty may be charged for the failure to file a return, information, book, and so forth. There is also a residuary penalty if any person contravenes any rules of the Act for which the provision of penalties has not been fixed separately under the provisions of the Act, or rules and regulations made there under; in such cases, the Controller or any officer of the government or authorized by the government by special order, as the case may be, can fine the person for breaching the rule which may extend to 25,000 taka (approximately US $250)by mentioning the reasons in writing in an administrative order.

Chapter eight is very important as it clearly indicates offenses, investigation, adjudication, and penalties. Here, the penalties are presented in a clear format. For example, the penalties for damage to a computer or computer system are defined by the law in the following way:

- Accesses or secure access to such computer, computer system, or computer networks for the purpose of destroying information or retrieving or collecting information or assist other to do so;

- Downloads, copies, or extracts any data, computer database or information from such computer, computer system, or computer network including information or data held or stored in any removable storage medium;

- Introduces or causes to be introduced any computer contaminant or computer virus into any computer, computer system, or computer network;

- Damages or causes to be damaged willingly in any computer, computer system, or computer network, data, computer database or any other programs residing in such computer, computer system, or computer network;

- Disrupts or causes disruption of any computer, computer system, or computer network;

- Denies of causes the denial of access to any person authorized to access any computer, computer system or computer network by any means;

- Provides any assistance to any person to facilitate access to a computer, computer system. or computer network, in contravention of the provisions of this Act, rules or regulations made there under;

- For the purpose of advertisement of goods and services, generates or causes generation of spams or sends unwanted electronic mails without any permission of the originator or subscriber; and

- Charges the services availed of by a person to the account of another person by tampering with or manipulating any computer, computer system, or computer network.

The punishments for tempering with computer source code; hacking a computer system; publishing fake, obscene, or defaming information in electronic form; failing to surrender a license; failing to comply with an order; failing to comply with an order made by the Controller in an emergency; unauthorized accessing of a protected system; misrepresenting and obscuring information; and disclosing confidential and private information are clearly presented in the Act. Moreover, the way to organize a cyber tribunal, investigate offenses, and appeal a decision are presented here. Finally, in this chapter, miscellaneous considerations including the public servant, protection of action in good faith, power of government to make rules, and power of controller to make regulation are considered.

The Act is basically a guideline for carrying out e-government. It is necessary to announce legal issues before the application has been started. Moreover, the protection of the application should be amended based on new issues raised over time. The Act 2006 was amended in 2013. Specifically, the punishment of ICT Act 2006 was amended and updated. The previous punishment was bail-able with five to ten years' imprisonment, and the fine was up to one crore BDT (almost US $125,000). The new punishment ranges from seven years to fourteen years' imprisonment with the same fine. Moreover, the present amendment has curtailed the right of bail for the prisoner. Though this is a controversial Act as it has curtailed the right to bail for the imprisoned, the government's logic is to make the people more aware of the importance of these strict regulations. Moreover, other Acts and the amendment are for the smooth continuation of the 2006 ICT Act.

6.5   Empirical findings and analysis of e-government in Bangladesh

In short, e-readiness seems like an organization being prepared to provide online services with ICTs. The organization could be a government sector, a private bank, a social organization, and so forth. It is important

to note that the purpose of delivery of services varies with private and government organizations. Private organizations want to make a profit in return for their services, whereas public organizations intend to serve citizens profiting from it. Moreover, in present day the intension of public organizations is to create an atmosphere in which citizens can participate in the decision-making process to make the organizations more efficient and effective. In order for this to occur, governments all over the world must engage in a continuous reform effort. E-government is one of the most recent reform efforts to bring government services closer to citizens and offer other benefits. Before propagating ICTs, whole tasks of the government must be considered. It is also important to know that ICTs are not the only basis for e-government application and that e-government is a combination of other issues. These issues may include ICTs, the preparation of employees, their behavioral change, and management systems.

In order to collect the empirical data, this study has focused on three different case areas (Sylhet, Gazipur and Shirajganj) of Bangladesh's public administration. In Bangladesh, all district level e-governments run on the same strategic format established under the A2I program. So, to develop an overall idea of e-government activates at the field level, the chosen case areas were deemed sufficient for this research for the following reasons:

a) Each case area has been developed under the same A2I program for the readiness of e-government. The response was almost same from the pilot and other two case areas. The Prime Minister's Office in cooperation with the UNDP operates all functions of A2I projects

b) It would have been too expensive, complex, and time-consuming for this research to go to many other case areas which follow the same structure and would produce redundant responses

c) Enough participants have been interviewed in order to answer the research questions.

Data was collected basically to find the reason for the slow growth of e-government and thus to mitigate corruption, red-tape, and unnecessary delay of services by the administration. If we consider the Tri-categories of e-government (the context, the creation process, and the content for the success of e-government), then, on the basis of an initial reading of the empirical data, many different categories of context, content, and the creation process come to light. However, through identifying specific segments, labeling the segments of information, and reducing overlap and redundancy, the most important categories of the research emerge.

6.5.1   Infrastructures and communications

In the 21st century, in order to make the functions of government easily accessible for citizens and other stakeholders, everyone notes that easy access should be ensured. The focus has been on ICTs and the way to achieve the highest benefit from them. The government needs to follow the proper process of development to get desired the output from ICTs. Every government in the world has been aware of the benefits of ICTs, and as such, concentrates on their development. Bangladesh is no exception. The government of Bangladesh has allocated a lot of money to promote ICTs and thus to achieve the ultimate goal of e-government. However, e-government should be applied properly and maintained accordingly. The ICTs has different components, and each component is essential for the whole process to be successful. If any component is missing from the program, the whole process could be in vain. For instance, if there are available personal servers and personal computers in an organization but there is shortage of internet facilities, then the success of e-government would remain unable to be achieved.

Basically, ICTs components are the servers, personal computers, cellular phones, internet, land lines, and broadband. If we consider the internet with land lines and broadband first, then it is clear that immediately after the introduction of the World Wide Web for information retrieval services, our daily lives changed. The

world became a village in which anybody would never miss anyone's presence through connecting Internet. Moreover, the concept of the internet made daily life easy and fast. Although the internet is not yet so cheap that all people can avail its services, growing interest in internet service has decreased prices and increased availability.

Bangladesh is situated in the South Asia where a huge percentage of people are living below the average standard of life; however, the government has launched programs to give every citizen easy access to the internet. Though the introduction of the internet in Bangladesh was quite late in comparison to other countries, even to other South Asian countries, the government of Bangladesh started to provide internet facilities in 1996 (Table 14). Available facilities cover different government programs to make their services easily accessible for citizens. In the beginning the speed of the internet was quite slow, and the performance was very poor. Later, the government has realized the necessity of internet speed and initiated proper action to improve it. In 2006, Bangladesh entered the worldwide information superhighway through submarine cable (Techtainment, 2012).

Table 14. Internet facilities in Bangladesh (Ahmed, 2012)

Year of action to promote the internet facility	Speed over internet
1996	very small aperture terminal (VSAT)
2006	superhighway submarine cable
vision of ICTs	provide door to door internet facilities by 2021

Though access to the superhighway was quite late in comparison with other South Asian countries, the improvement could still benefit the overall development of e-government. One respondent has said that,

> *Internet facility is comparatively good now, however, the benefits of internet should be recognized and executed properly (Top management, district of Sylhet, 22 April 2013).*

If we examine the society, we would see that most people do not have the internet; some people do, but they do not have a high-speed internet connection. The speed of the connection depends on how much money has been spent for it. If anybody opts for a low-speed connection at low cost, then the performance is correspondingly low, and in most cases, the outcome is the ability to access only Facebook and other social media and not the ability to download forms or other necessary materials.

An additional issue is that the government does not properly monitor security over the internet. Though the government claims to have launched the Acts against any misuse of ICTs, in reality, there is no that kind of legal action against it. It is also notable that the authority has no clear knowledge about security and privacy. The most surprising finding was that employees considered technical hands are unaware of these systems. The scenario was observed in almost every case area. One employee revealed that,

> *We have not faced any trouble, so that, we need to give a remarkable emphasis on the security system. We think that we are secured, because, currently the functions are not used as two-way transaction methods. Citizens can only download some forms but not return or submit them automatically (Operative core, district of Sirajganj, 3 June 2013).*

Eventually, for the smooth operation of e-government, the Acts should be enforced. If the employees are not aware of capacity and security issues, then internet usage will be interrupted. E-government does not mean only the facility over the internet. There are other issues involved, and the government is solely responsible for ensuring security. Otherwise, e-government will never be a popular communication method, and the means behind the applications will be disrupted.

Computer and the cellular phones are important components of ICTs. In the case of e-government, cellular phone could be a handy and ubiquitous component for both the service providers and the receivers. The percentage of cellular phone users is growing rapidly worldwide. The percentage is rapidly expanding in Bangladesh as well (as evident from Table 15). Currently, more than 75% of the people are using cellular phones in Bangladesh, and 22% of the population has the 3G access. The government has introduced some facilities over the cellular phone almost everywhere in the country. For example, one facility available via cellular phone contains a text message for the purchasing order form for farmers. The name of that facility is e-Purjee. E-Purjee was initiated in 2009 under the A2I program. This e-service has been maintained by the government office through the queuing system of sending the text to the cellular phone of a farmer.

Table 15. Users of cellular phone in Bangladesh (Mobile for development impact, 2014)

User facility (normal vs. 3G)	Percentage of people
user for phone calls only	75
3G users	22

However, in reality, e-Purjee cannot be termed a success of e-government. This is definitely an e-service, but the goal behind the e-service remains unseen. Moreover, during e-service application, other issues such as feedback should be considered. Otherwise, the main goal of e-government would never be achievable. As one employee explained,

> *Government actually trying to ease the services only, but, the actual goal of e-government has not been properly considered here (Middle management, district of Sylhet, 22 April 2013)*

Cellular phones could speed e-government application, however, the large-scale application could never be possible with this small ICT equipment. For large-scale government operation, the proper set-up of computers is necessary. The government of Bangladesh has realized this and acted accordingly under the e-government vision. The current scenarios reflect many changes that have been made since the first introduction of the e-government vision in Bangladesh in the late 1990s. During the initial period, the government operated mostly by pen and paper. However, with the positive actions of the government, now every government office has computers and internet facilities. In principle, the computers and internet are not directly for e-government use; however, the term e-government has been incepted to the most of the staffs of government. One respondent explained that,

> *We all know the term digital or e-government, however, the real meaning is still missing to most of the employees (Top management, district of Sylhet, 22 April 2013)*

With enriched knowledge of e-government, the government should focus on setting up proper computer equipment. Before choosing the equipment, the government should know the volume and area of their works.

Because the government circulates between different groups in society, it should consider the demands of its stakeholders. In addition to the demand of the stakeholders, the main goal of e-government should be kept in mind by policy makers. If the policy is to install the computer and make the inside communication (government to government) strong, then the full capacity of e-government will never be realized. Policymakers should know e-government involves more than computer installation; it contains vast concepts. So, the computer should be installed with proper facilities and with proper capacities to make the program smooth and ensure the specific goals of e-government.

Moreover, in order to install computers for the application of e-government, it is important to secure the proper installation of hardware with decent software. The hardware system is usually used for high performance, such as long-lasting services and a high-capacity storage system. On the other hand, the software system is used to disseminate information, to promote communication, to conduct transactions, and to facilitate the governance service online (Table 16). Emphasizing hardware over software or vice versa will never produce a good solution. For instance, we know that the functions of government circulate from government to business, government to government, government to citizen, and government to employees. So, if the hardware lacks the capacity to store data, then government business is impossible. Similarly, if there is no proper software, then the transaction process will never be possible. Table 16 gives an overview of the general usability of software and hardware in an organization.

Table 16. Usability of hardware and software systems in general

Usability of software (in general)	Usability of hardware (in general)
To disseminate information	Long-lasting services
To promote communication	Capacity of storage
To conduct transactions	
To facilitate the governance service online	

If we examine the cases and the words of the respondents regarding the hardware and software systems, it is clear how equipment has been disseminated for the main purpose of e-government. First of all, if we consider the numerous operations performed by the government under the application of e-government, we see that the performances are not up to mark. Among the numerous services of government administration, very few services are provided online, and these are not in the proper manner based on the criteria for e-government application. For example, there is no visible end result of any online tasks from the beginning till the end. As one employee mentioned,

> *E-readiness towards e-government is not adequate. The main problems are the budget constraints and the lack of hardware applications (Operative core, district of Sylhet, 30 April 2013).*

The budget is not small. With the cooperation of UNDP, the government has initiated the 2002 National ICTs Policy in the hope of ensuring many services with the budget they have allocated. The hope has included the use of ICTs within public administration, the widespread dissemination of ICTs into society, the development of national data resources, and, most importantly, network-based communication between different stakeholders. However, the 2002 policy failed to meet the expected outcomes by the time the

overview was completed in 2006. Though there was a portal, the portal was not developed properly, and the communication system was developed met only the minimum level of expectation. One respondent said,

> *The funds should be allocated and there should be clear picture of using that fund. Besides, the usage of funds should be transparent not only to the government but also to the different stakeholders of the country (Middle management, district of Sylhet, 25 April 2013).*

Moreover, the storage system had no clear-cut guidelines for the employees. The storage system is one of the most important tools for the government and its administration. The storage system is necessary for the proper and speedy application of the data. For instance, a single window of government, the portal, has been finalized for e-government. Suppose, the portal has a lot of scattered information; then it will not an effective means of communication. Similarly, if the government office does not follow the proper storage method, then the whole system could never be disciplined. At this point, it has been noticed that in government organizations, computers have more or less sufficient storage facilities; however, employees do not follow the proper sorting and storage system. In addition, most of the technical personnel lack the training to know how the hardware is compatible with the given software system. On the other hand, it has also been noticed that the preparation of e-government does not reflect the unfortunate reality that the online service, feedback mechanism, and comment system are not moving in the right direction. One of the employees said,

> *The system is only the introduction of e-government fashion, however, the fashion is not in real mood (Operative core, district of Sirajganj, 2 June 2013).*

Similarly, the system sometimes has the capacity to work for longer periods of time but never does for many other reasons. Basically, in this part of the analysis, attention has been given to how reliable the system is in doing work for a longer period of time. The respondent in every case informed the researcher that the system is not bad at all or that the hardware systems can survive for longer periods of time, but the problem is the lack of an uninterrupted power supply. One respondent in the administrative area of Sirajganj said,

> *The power system is so bad even in the main office time, in most cases it has been seen that the power is missing to do the routine work (Operative core, district of Sirajganj, 21 May 2013).*

Electricity is poorly distributed in Bangladesh, and production does not match need. The current situation has improved a bit considering the situation of the last couple of years. However, there is no sustainable development in this sector. The present government came into power and promised to address the need for electricity. The government has emphasized the quick rental system (renting of electricity from different small power generation companies) for the improvement of the electricity supply. Along with quick rental systems, the government has allocated funds for a long-lasting method of electricity generation. At present, the government has two big projects of electricity generation. One is the Rampal Electric Power Plant (situated in the industrial administrative division of Khulna and close to the Mangrove Forest of Sundarbans), and the other is the Ruppur Nuclear Power Plant. However, both of these projects have been de-motivated by the mass of people in Bangladesh and by some international organizations as well. The reasons for this de-motivation are that the first power plant will destroy the world's most scenic place, The Sundarbans, and that the nuclear power plant brings with it serious concerns about damage.

In addition to the improvement of the electric supply of the nation and the storage capacity and performance of the computers, personal computers and their maintenance system should be emphasized. The maintenance system is not standardized. Moreover, different research has revealed that the current state of ICTs is woefully inadequate to support goals of e-government. Public sector ICT infrastructures and usages are quite meager, with inadequate hardware resources and a lack of information technology (IT) expertise in most government offices. Many of the existing PCs are outdated and insufficient; for every 100 employees, there are 30 computers at the ministry level and 8 computers at the division level. On average at the ministry and division level, only 48% of PCs are connected to Internet (Khan and Alam, 2012). The equipment at different administrative levels is insufficient for the installation of proper e-service, so also the authority is reluctant about improving it. The maintenance system is not proper, as one employee, a technical expert, has stated,

> *There is no pressure from either the government or the citizen, so, the maintenance of equipment are not so important to the authority yet (Operative core, district of Gazipur, 19 May 2013).*

In terms of hardware application, the level of satisfaction was very low and basically an early stage of e-government installation. In addition, in order to understand the details of the software system to support the available hardware applications, emphasis has been placed on the software application for payment system, the maintenance of security and privacy system, the request method of the customers, the way of linking different web pages at a time, and the process of transactions. Moreover, there should be a proper hardware system so that maintaining operation with the updated version of software systems is possible. For example, with the changing demands of society and the economy, the software and the hardware system are changing frequently. Therefore, the government should be cautious about replacing the old system with the new one.

At this point, if we look at the request methods from the different branches of government as well as from different group of stakeholders, it is clear to us that the current approach of e-government has no real process for updating the hardware and the software. The government claims to have a proactive approach towards e-government; however, this has not been proved. It was mentioned earlier that the government introduced e-Purjee; however, e-Purjee does not have any request systems. This is only a service to send a SMS (short message service) text message for the demand to the farmer. The farmer has no options for making further requests or sending feedback. One respondent said,

> *There should have a specific directions and guidelines for the request and to answer on it. Otherwise, the process will lose its effectiveness (Top management, district of Gazipur, 23 May 2013).*

Moreover, there is no proper step to make the communication process smooth and ensure two-way communications. Essentially, employees have very little knowledge about the available software to ease the work. One software namely Web Server Software (WSS) works as the citizen request software, but in most cases, employees have no idea about its use. One respondent said,

> *The software systems are developing and we are hopeful that proper installation of software will be initiated soon to fasten the communication system (Top management, district of Sylhet, 1 May 2013).*

The scenario is same in every case area. Besides WSS, there are no other software systems for automatic transaction processes. Reviewing the government portal and asking question of the respondents, it has been identified that there are a lot of programs such as land issues and license issues between the government and

citizens; however, the software system does not have proper guidelines, or, in some cases has guidelines but very poor service. The two-way communication system is not ensured. One respondent has reported that

> *The communication system is still in the early stage, we need lots to promote the actual means of communication (Middle management, district of Gazipur, 20 May 2013).*

Again, it has been seen that alongside security and privacy, employees should know the proper means of protection from viruses, intrusions, and unauthorized system access through updating the available software. The respondents were also unaware of these protections. Moreover, it has been noticed that even technically-sound employees are unfamiliar with them One respondent in the district of Gazipur stated that

> *Proper training is missing to improve our quality to handle different hardware and the available software (Operative core, district of Gazipur, 26 May 2013).*

Finally, emphasis has been placed on linking different pages on the web. Before asking questions, the researcher reviewed the portal of the respected field administration to see how it connects to numerous pages and links. Links were noted, but in reality, they did not always work and ultimately showed "not found." The respondent agreed about the existence of this problem and suggested improvements for the links. One respondent in Sylhet stated that

> *E-government is very new both in the government and in the citizens. A lot of initiatives are yet to take for achieving maximum benefits from it (Middle management, district of Sylhet, 29 April 2013).*

The theoretical part of this research outlined how systems could be made appropriate for online services. Once the internet is okay, the system should be compatible with internet facilities. In this research, it has been noted that internet facility is still poor and expensive. Although in some portions of the country there are proper internet facilities, this does not ensure two-way communications (from both the government and the citizen). Respondents remarked that although there is internet (whether slow or faster), online communication system is still very poor.

It was observed that most employees were not aware or proficiently trained in security, privacy, and ethical issues. In the theoretical part of this research, it was mentioned that security should be updated and monitored regularly. However, employees are not concerned about the security system to protect the organization from illicit modification, destruction, or exposure to unauthorized access. Since e-government is two-way communication between the government and its customers online, a privacy policy and ethical issues should be properly addressed. In reality, most of the employees do not address them as they should.

ICTs offer the potential not just to collect, store, process, and diffuse enormous quantities of information at minimal cost, but to network, interact, and communicate across the world (Crede and Mansell, 1998). Econometric study has found evidence of a strong positive relationship between investment in ICTs GDP growth, illustrating the importance of ICTs for development in both the commercial and the public sectors. Study (OECD, 2002) has also shown that investment in ICTs accounted for between 0.5% and 1.3% in GDP growth per capita per annum over a number of economies in the 1995–2000 period.

Table 17. ICTs has penetrated opportunities for e-government (Ciborra and Navarra, 2005)

Potentialities of ICTs	ICTs potentialities for e-government	Economic benefits
Collect, store, process, and diffuse enormous quantities of data in the fastest and cheapest possible manner	The general potentialities of ICTs have been used for smooth networking, interacting, and communication with the citizen.	Use fewer staff to complete the process
Facilitate the communication process	Different democratic values have been gained through smooth networking among different sectors of citizen	Citizen spends less money to get unlimited benefits from the government

This chart (Table 17) shows that dissemination of ICTs would ultimately bring two kinds of benefits for citizens and for the country as a whole. However, the benefits are not easily achievable. If the government spends money for ICTs, then ICTs applications can be installed and the process of collecting, storing, and diffusing of data can be initiated. The ICTs process could also facilitate communication systems. But in the long run, without the proper creation process, policies, and strategies for ICTs, the ultimate benefits will not be far reaching. The application of e-government would then mean the automation but not the process of democratic interaction. In this context the economic benefits could never be possible even through decreasing the amount of staff and giving cost-free services to the citizen.

One employee from the top-level management has mentioned that,

> *Considering the actual value of e-government the government has seem to involve mostly on the process of automation, but, this could be changed soon (Top management, district of Sirajganj, 16 May 2013).*

At this point, it is clear that the current development of e-government in Bangladesh is connected to the general matter of ICTs, but not to the real goal of e-government for democratic and economic achievement. Democratic and economic values could be achieved through a different process of networking and communicating. For example, if the networking is one-sided (within the government), then it will never become a means of democratic communication. The communication and networking process should be based on common interests shared by the government and citizens. There should be feedback mechanisms in the process of communication. The respected authority should be concerned with the value of the feedback the government receives from different stakeholders. Moreover, proper action should be taken in response to all received feedback.

Table 18. Democratic process of communication in general

Communication process	Democratic value
Government and citizen	• common interest in communications • feedback mechanisms • value creation processes

Therefore, democratic communication and the process of feedback are the most important mechanisms in mainstream e-government application. However, in reality, the condition of the feedback system is poor. As one employee said,

> *The communication system between government and citizen is still very limited due to the lack of proper guidelines of administrative polices and strategies (Middle management, district of Gazipur, 29 May 2013).*

In theory, feedback mechanisms increase the efficiency and effectiveness of employees. In the initial stage of the application of e-government, the policies and strategies should be properly described in written form. The government should be aware of the efforts and the final benefits. Subsequently, the economic benefit from ICTs should be considered pivotal in policies and strategies. As has been shown in Table 18, the economic benefits could come from the process of feedback and its benefits and from cost-saving interaction between the government and citizens. So, the process of feedback should be prioritized. Moreover, feedback should be used to promote accountability and transparency and to combat corruption of administrative systems as shown in Figure 21.
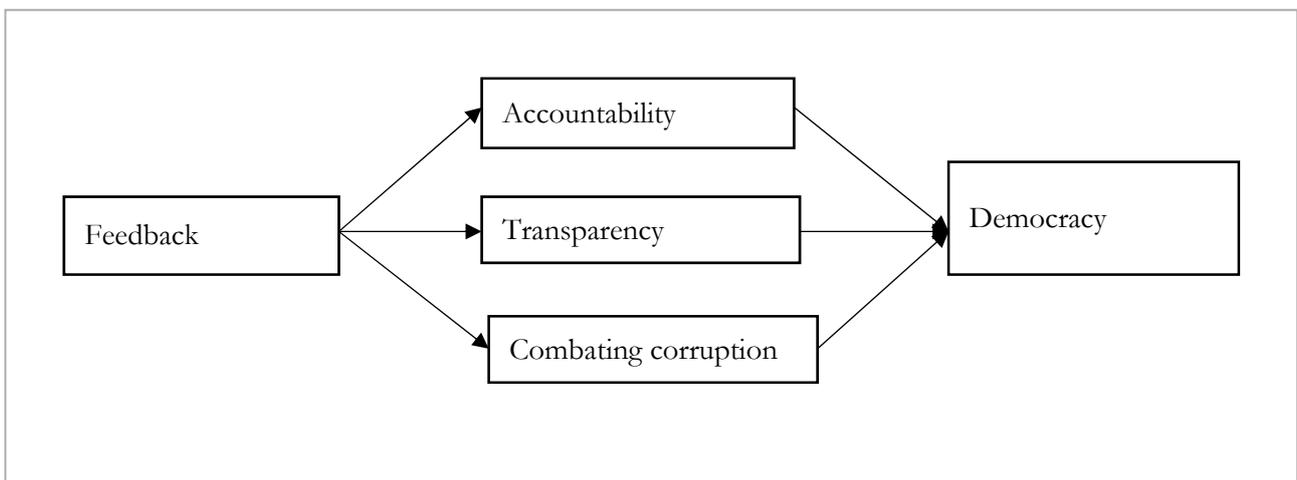
Figure 21. Democratic practice via feedback (Ahmed and Khan, 2016)

In reality, the administrative process of Bangladesh is still old-fashioned. The government follows the traditional bureaucratic system as the basis of its administrative practice. The traditional bureaucratic system has a typical vertical authoritarian system, which means that the top-most authority holds the highest power and is the decision-maker. Middle and lower-level authorities and staff only execute the policies decided upon by the highest authority. However, this directly contradicts the mainstream e-government process of operations. E-government suggests the application of ICTs to promote horizontal communication along with other two-way communication systems. The communication system should be developed, as one interviewee has stated,

> *The policy makers should be well aware of the policies and the context where the policies have been executed (Middle management, district of Gazipur, 31 May 2013).*

Therefore, e-government has different forms of execution. First, the policymakers considering the context of the economy, the society, and the country should select the best form. Before, initiating an expensive program of e-government, the government should consider the long-term vision of the country. ICTs could benefit

the society in the long run, but with a financial shortage, the main process could breakdown at any time, and the final result could be interrupted. Although Bangladesh has the vision of applying ICTs and promoting e-government by the year 2021, the present scenario of the administrative process indicates that e-government will never be possible if the present administrative approach does not change. One respondent has said that,

> *E-government is far-reaching with the current administrative approach. The government should focus on the*
> *administrative process first (Middle management, district of Sirajganj, 29 May 2013).*

Since this interview was followed with open-ended methods, additional information was collected during the interview, for example, how the policies match with real practice to ensure ethical handling of security and privacy. It has been noted that most of the employee were not aware of or trained in security, privacy, and ethics issues. In the theoretical part of this analysis, it was argued that security should be updated and monitored regularly. However, it has been seen that the employees are not very concerned with the security system to protect the organization from illicit modification, destruction, or exposure to unauthorized access. Moreover, it has been observed that e-government should involve two-way online communication between the government and its customers. So, privacy and ethics should be maintained properly, although in reality, most of the employees do not practice the mechanisms of e-government as they should.

6.5.2   Skilled management with proper training

Proper work guidelines and learning modules can make individuals efficient and effective. That said, the ways in which individuals are made efficient and effective should be changed over time as the demands from the society change. In early stage of administrative modernization, emphasis has been given only to increasing administrative efficiency through a clear-cut, hierarchical structure. This chain now requires modification. In order to achieve the highest-level administrative outcomes, innovative guidelines are needed. The mode of innovation in the domain of increasing efficiency and effectiveness has a long history. However, the most recent innovation started at the end of the 19th century. At present, accountability and the transparency have been regarded as the most important requisites for democracy, but most countries have been unable to make their administrations efficient and effective by emphasizing accountability and transparency among their administrative mechanisms. In most cases, administrations have been seen as outdated and practicing the old administrative approach with new innovations. In order to get the positive outcomes from the innovative approach of administrative modernization, both policymakers and implementing bodies need to play a positive role.

Administrative innovation is the combination of so many things in a program. This research has emphasized administrative modernization through the innovation of an e-government approach. It was mentioned in the theoretical part that before the word "government," the letter "e" has a lot of meanings. In short, this "e" means ICTs; however, a person unfamiliar with ICTs cannot execute them. In order to run the ICTs and create an effective government approach, other issues relative to administrative efficiency and effectiveness must be considered. Here, the most unavoidable issues of e-government are the application of ICTs by a skilled management force. A skilled management force could turn the tasks into a positive mode and make its efforts transparent and accountable to the society to get the respective benefits from the applications.

Moreover, the management needs to be positive in order to make any innovative application smooth and handy. For instance, it has been seen that e-government is designed to create a horizontal communication system between different bodies inside and outside the administration. However, if in practice, even after the

introduction of the application of e-government, the communication system follow the old vertical method of communication, then the overall outcome will be interrupted. Proper training facilities can only make employees skilled and change their mentality towards the positive outcomes of the approach. The government should emphasize proper training of all related authorities.

However, there is still debate on how the proper aspects of training can be ensured and how the outcome can be assessed. The respective authorities of the government bodies in the world have declared that they have the preparation for the application of e-government. However, the outcomes show that the real e-government is still far away from being implemented in most of the countries in the world. Therefore, in order to give guidelines for training employees, it is necessary to follow the directives that various researchers have outlined for the general requirements of training. Moreover, the initiatives must be properly sequenced for the highest outcomes from the training.

If we review the digital government training curriculum, it becomes clear that the curriculum has followed a specific method for emphasizing the training of employees. At the very beginning, the training program should emphasize the definition of the concept being covered. Then the focus should be on where the program will be circulated, the roles of the employees, and, finally, the process for assessing the employees' role in the organization. However, the case analyzed in this research shows that the meaning of the application varies from person to person. Here, the first question asked about the concept of e-government: its meaning and benefits. Most of the respondents were not familiar enough with the concept of e-government. Of course, some of them knew the term, its benefits, and even the stakeholders; however, there is still a gap between the actual concept and the benefits provided by government. Currently, there are no sufficient seminars/training sessions arranged by the authority to make the employees skilled. As one respondent in the pilot case has stated,

> *Awareness should be built, but, for this, at first proper training facilities should be initiated as an important aspect. Without the training, especially arrangement of seminar and other short-term courses, the awareness would never be developed and proper meaning of the application would be missing (Top management, district of Sylhet, 1 May 2013).*

The focus has been on the available training facilities in order to mitigate the debate over which group should circulate the functions of e-government and how the services will be delivered. It was explained in the beginning of this section that administrators have been tasked with increasing their work efficiency. However, in field it was noted that the way of increasing administrative efficiency was based upon a vertical communication system, whereas e-government relies on horizontal communication. The e-government application has been initiated by the government, but the communication system has not been specified, and the training facilities have no clear-cut indication to make them ready to replace the old communication system with the latest methods. One respondent said that

> *Training should be a continuous process and there should be clear guidelines of training applications and its approaches (Operative core, district of Sylhet, 25 April 2013).*

Moreover, the assessment of employees' roles and the arrangement of further training for them should also be considered important by the management. In this regard, the senior-level authority responsible for guiding the technically-skilled employees and assessing their performance was interviewed first. Thus, it was observed that there is no such guideline to assess the role of technically-skilled employee. Although, authorities mentioned that in the beginning of the recruitment they check the employee's certificate on the technical

issues such as handling of hardware and software, employees' proficiencies are not properly scrutinized. One senior official confirmed that

> *The development of the employees' skill can never be ensured overnight. We have now emphasizing on the training issues to make them skilled human capital. Side by side, we will prepare a guideline to assess their performance (Top management, district of Sylhet, 29 April 2013).*

It should be noted that employee training would not be related to computer matters such as the usefulness and application of MS Word, MS Excel, Spreadsheet, and so forth. Rather, the overall development of e-government must be focused on and ensured. Career officers in the administration get basic training on ICTs in their Foundation Training Course (FTC). The course focuses on only the most basic knowledge of ICTs. E-government does not mean to equip the government with computers; it is a way of replacing the old administrative approach. Therefore, human capital development has to be seen as the combination of all related issues that e-government demands for accepting a focus on ICTs. This is evident in the words of the current secretary of the ICT division of the Ministry of Posts, Telecommunication, and Information Technology (MoPTIT), whose statement clearly shows that still today, the concept of ICTs, the training, and the development of e-government is in question in Bangladesh. The secretary has said that (The Daily Star, 2015) "Our biggest achievement is that we have created a generation mentally ready and fit for adopting any technological challenge. Many people might think that development in ICT sector means donating more computers but I think developing human potential in this sector is the most important task."

In the secretary's words, emphasis is placed on building human capital through ICTs, but human capital alone without sufficient ICTs infrastructure and computers will not bring success to e-government. To quickly adapt ICTs as the sole object for successful e-government, equal emphasis should be given to on human capital, infrastructure, and computers. Insufficiency in any one of these three aspects will jeopardize the success of e-government. The proper mentality is necessary for the proper application. Of course, computers are the most important component of ICTs. Donating more computer will not solve the problem, however. Donating sufficient computers and updating them regularly is key for the smooth operation of e-government. It was noted in the discussion of infrastructures that the government offices still lack computers as a component of ICTs. Moreover, ICTs have basic demands for the application of e-government. Since the "e" before government means the use of ICTs, the knowledge of ICTs is important in this application. At this point, the most important component of ICTs is the computer and its components.

The theoretical part of the research offered a general explanation of the components of computers; however, to remind the reader, these components are the hardware and software- related ICTs equipment. It has been seen that hardware applications are generally in place with e-service in very small portion; however, because of the lack of knowledge and the approach towards e-service, the application has not been properly implemented. One respondent has said that

> *We are interested of learning the components and other application of e-government, however, the learning system is not regular and in some cases in the very basic levels (Operative core, district of Sirajganj, 21 May 2013).*

At present, the government is trying to improve the training facilities for government officials and different representatives in society such as schoolteachers. The training facilities should be regular and easily reachable for trainees. If we look at the training facilities, we see that the training is based in the capital city Dhaka, whereas the functions of administration are not only Dhaka-based; moreover, the government functions cover the whole country. BANBEIS (Bangladesh Bureau of Education Information and Statistics) has held

training on the computer application since 2003-2004. Under different projects and programs, the bureau is arranging training for both the administration and other representatives of the government. The most recent one has been started under the project of BKITC (Bangladesh- Korea ICT Training Center for Education). The main objectives of this project are to

- Improve the capacity of Bangladesh's ICT human resources through the ICT application training for the citizens;

- Improve access to ICT training in Bangladesh through the participation of teachers, officials and individuals;

- Contribute to narrowing the digital divide and enhancing the ICT Diploma, Certificate, and Refresher courses and the Web-mastering Course; and

- Establish an International Standard Training Center for Human Resource Development in ICT to meet the challenges of the 21st Century.

Under these objectives, BKITCE became a modern ICT Training Center fully-equipped with state-of-the-art technology for industry standard Human Resource Development in ICTs to meet National and International demands. However, the vast training needs can never be met by only one center in only one place. The training facilities should be decentralized and should target every individual employee in even the remotest corners of Bangladesh. One respondent said that

> *Training facility should be vast and should cover the entire employee from top to the bottom level of government administration (Middle management, district of Gazipur, 23 May 2013).*

Similarly, the Bangladesh Computer Council in cooperation with the United Nations has launched a training program in ICT. Specifically, this training has been launched by the Training Centre for Information and Communication Technology for Development (UN-APCICT) of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) in cooperation with the Bangladesh Computer Council and is located in Dhaka (cf. Unescap, 2014). This training program has been initiated for government officials and policymakers to improve capacity-building and leverage ICTs for national and regional socio-economic development. However, capacity-building for government employees is not a problem that can be solved overnight. The issues need a long-term plan and effort. If e-government is the prime concern for the government of Bangladesh, then the most important focus of e-government, human resources development, should receive full attention. Moreover, the training facilities should be available for all the administrative units of Bangladesh.

Eventually, the training curriculum should be incorporated into every training institution and developed accordingly. First the concept being covered in the training should be properly defined and explained to the entire unit and every individual in government administration. Second, there should be an overview of the technological component, skillful orientation, and generation of leadership qualities among the employees. Moreover, the way to allocate work to intended group should be clearly outlined in the training curriculum. Therefore, the proper curriculum could train employee appropriately. One respondent has said that

> *Government should first set-up the target of e-government properly and then set up the training centers and train-up the employee in an intensive manner (Middle management, district of Sirajganj, 2 June 2013).*

Basically, e-readiness of the government of Bangladesh has been introduced under a project named A2I and operated by the UNDP in close collaboration with the Prime Minister's (PM's) office. The vision is to introduce e-government through the administration in every corner of Bangladesh. The government formed a policy implementation committee for ICTs in 1999. Moreover, the committee announced the ICTs policy in 2002; however, after several years, the outcomes seem in a review of the policy were minimal. Then the government introduced a new policy reviewing the old system and announced allocation of a lot of money. However, there has been no visible sign of real e-government development. Therefore, it can be said that the application of new innovations has been ineffective, and the government is spending money without setting a specific goal for the country. One respondent explained that

> *The project is good, however, the application has still lacking to make it successful one, due to, the lack of sufficient training of employees and the broad participation of citizens (Operative core, district of Gazipur, 26 May 2013).*

Moreover, the expected value of the program is to provide services online, promote transparency and accountability, minimize the cost of service, and practice democracy by giving power to the citizen and other stakeholders. However, the latest report by the United Nations (2014) explained that Bangladesh is in a very low stage of achieving the above values. Moreover, the growth is so slow that Bangladesh has not been included even in the top twenty countries in Asia. Accordingly, the e-government development index shows that place of Bangladesh is 148 in consideration of the online service component, telecommunication infrastructure component, and human capital component. In 2010, the United Nations' report on Bangladesh was more progressive and ranked Bangladesh 134 out of 183 countries. As we have seen, the value of e-government can never be realized without replacing the old system with new innovation. Moreover, e-government cannot be achieved without the infrastructural component and without the development of human resources. If the government thinks that e-government is only the allocation of money for ICTs and assumes that other issues would be resolved automatically, then it would be foolish. The proper value of e-government can be achieved only with proper initiatives and the nurturing of those initiatives. One respondent justified that the main value of the program has not yet been achieved both theoretically and practically. As the respondent in the district of Gazipur claimed,

> *E-government has seen as a buzzword, the volume of application is slow both from the central and field level of administration (Operative core, district of Gazipur, 31 May 2013).*

On the other hand, since e-government is a new inception, regular meetings should be held to discuss the new features. The meetings should emphasize the overall features of e-government. The features should include the concept, an overview of the technologies, skills and leadership qualities, organizational qualification, and engagement of citizens and businesses; these should be prime concerns in the discussion at the meeting. The focus of the meeting should not be a general overview of progress; eventually, the focus will be establishing appropriate training. For example, if it has been noticed that the employees are well aware of the concept, then emphasis should be on the next feature of the training. However, it has been seen in the field that there is no provision for regular meeting between the employees. One interviewee has said that,

> *The program is good but no regular meeting to make the project successful and no specific job description (Operative core, district of Sirajganj, 16 May 2013).*

E-government and its readiness means to give services online and maintain relations between different parts of the government. The employee should be trained in that direction as well. However, it has been seen that online services are limited, and there are no two-way communications. Moreover, there is no suitable software to enable communication between employees. Suitable software must be installed, and employees must be trained to handle it. Moreover, employees must be motivated and informed about the easy features of the software system. For example, there is "commerce server software" which compiles all information related to products, shopping, shipping, taxes, payment, and receipts. The government should introduce this kind of software and train employee to be familiar. However, the administration of Bangladesh government is still in a primary stage of communication and online services. Besides, employees are not interested enough to communicate online. One employee claimed that

> *Due to the limited resource, training, power supply, etc. the growth of the application is very slow (Operative core, district of Sirajganj, 16 May 2013).*

It has been observed that some employees are skilled in word processing, spread sheets preparation, graphics, and so forth. However, most employees have only basic level of skill in word processing and in the preparation of spreadsheets. In some cases, practical work on these applications has been reviewed. However, in most cases, it has been noted that the employees are not proficient in graphics design techniques such as making pictures and diagrams. One respondent claimed that

> *During the time of recruitment, we had basic knowledge on the word processing and the graphics design, however, we need more training to cope with the changing world (Operative core, district of Sirajganj, 3 June 2013).*

Employees should keep database records in a decent and professional way to provide expected services quickly. In this field it was observed that in most cases, there was no such professional method of recordkeeping. In some cases there was a sorting and filing system, but the employees did not always follow it. Without proper recordkeeping, the system of e-government cannot be properly applied. Moreover, recordkeeping should lead to faster work outcomes. For example, if any request comes from a customer, it would be possible to receive faster feedback when the record is its proper place and can be found easily. Otherwise, the system will be unable to show its effectiveness. One technical assistant has told that,

> *Due to the small portion of e-government application, this system of record keeping has not been developed in an efficient manner (Operative core, district of Sylhet, 30 April 2013).*

E-mail is designed to speed up work by replacing the post-mailing system and phone calls, and, of course, saving valuable time for employees and customers. Email has been widespread since the invention of the internet. However, as has already been mentioned, the internet facilities are not good enough in many case areas, so the culture of e-mailing and answering an e-mail is not ingrained in most of the employees. Additionally, the alternate system of remote access has not been developed, so alternate means of communication are not yet possible. People should have so many communication methods and they can enjoy their preference. Here, one respondent who is an upper-level official said,

> *We have the intention for promoting the communication between different levels and classes of people and gradually we will develop the communication approaches (Top management, district of Sirajganj, 29 May 2013).*

The training is not only to focus upon the different applications of e-government and its readiness but also to train managers to make them proficient for the application. The role of management and their approach toward e-government is a key factor in e-readiness. On the whole, before going to start any program, it is necessary to train the management on a specific program. Every program has challenges on the way to success. Since the managers are not well aware of the challenges and have not changed their approach to make the program successful, it is difficult to think that the program will succeed.

For any innovative changes in a program to succeed, teamwork is necessary. Moreover, teamwork is a culture in a work environment and possible only if there is an open culture in the administration. The traditional administrative process based on a vertical communication system has the power vested only in the top management. The lower-level managers in the traditional administration system follow instructions from the top management and have no sense of working as a team. However, the new e-government approach of management system has introduced a culture of teamwork through the horizontal commutation system. Here, the employees are considered a team, and everybody has the right to work as a team member. The change needed is to make the administration more effective by replacing the old administrative system with a new e-government management system. Most of the respondents informed the researcher that there is as of yet no culture of teamwork. The concept of innovation has not been incorporated through trainings, seminars, symposiums, or any other activities by the government. One respondent said,

> *With the availability of ICT infrastructures, other efforts, such as training, seminar, symposium should be taken in a regular basis to change the total administrative approach for the inception of such innovative thoughts, e-government (Middle management, district of Sirajganj, 21 May 2013).*

Most of the employees know about the program of e-government but do not receive quality training to cope with the changing pattern of administration. The administrative pattern cannot be changed only with the initiative; moreover, the pattern should be made familiar by the training facilities. For example, if we consider NPM, we would see that NPM couldn't be initiated only as a program; the government has established the proper way of learning and made training available. Similarly, e-government cannot be promoted only to install ICTs; thus, raising consciousness among the employees through different initiatives is important. As one respondent said,

> *We are conscious government employee, we only need some effort to make us technically conscious and the way of changing our old administrative pattern (Middle management, district of Sirajganj, 3 June 2013).*

It was noticed that there are huge scarcity issues in terms of different e-readiness matters, including a lack of reliable network, inadequate network capacity, lack of resources, lack of training, lack of integration across government systems, lack of complexity in understanding lack of g processes, availability and compatibility of software system and its applications, etc. On the basis of the empirical data and secondary sources, it could be said that with such a huge gap in understanding and reality, it is very difficult to expect that the approach of the employees will be very positive towards e-government. Training is part and parcel both to make the employee skilled and to change their approach from the old system of administration to the new e-government approach.

6.5.3   Portal

ICTs (both the equipment and training) are the fundamental prerequisites for the application of e-government. It has been expected that the application of ICTs will automatically increase effectiveness and efficiency of government administrations. Moreover, the expectation was that the readiness of ICTs would automatically transfer various services to the citizens. However, the outcome shows that the expected results are far from the reality. Although the outcomes from e-government have been rapidly expanded due to the technological expansion all over the world, technological expansion has no direct impact on the administrative systems. Here, technology is considered as the requisite for e-government application.

Earlier it was pointed out that in order for a government to disseminate ICTs successfully, achieve the proper outcomes, and reach the highest maturity level of e-government, it must effectively implement policies and strategies. Thus, it is very important to remember that the core of e-government cannot be avoided during the execution process. For example, the core of e-government is to make the functions of government open to establish two-way communication between the government and its citizens to promote administrative effectiveness and efficiency. If we see that the application is only to show off or if the core values of e-government are missing, then the application will waste many resources. We could give examples of countries in the developing world (cf. Amoretti, 2007) that are using ICTs not for empowering the citizens and promoting the democratic process, but for automating the government to smooth and speed up communication between different levels of government by the central bodies.

Moreover, the challenges of e-government identified by different researchers and world organizations (cf. Ndou, 2004; CID, 2000, Brown, 2003; UN and ASPA, 2002) have not been properly considered by the countries in the developing world, particularly by the case country, Bangladesh. In addition, the initiated programs have been executing without assessing the purpose and the expected benefits for the society and the economy as a whole. At the same time, the strategies and the action plans are missing in most of cases. It was mentioned in the theoretical part that the process of government starts with specific functions, and functions should have specific guidelines so that clear indications of governing are visible to citizens and other stakeholders. However, in reality, if we see that there are no proper guidelines for governing mechanisms, then the whole governing process is interrupted, and the success of economic and social benefits stagnates. Similarly, for the countries that have allocated a lot of money to adapt new technologies for mainstream administrative reform and to promote the democratic atmosphere in the society and country as a whole, the end result is basically frustrating. There is neither any visible action of the promotion of democracy nor the advancement of any action that suggests that the democratic value is the future.

The value of e-government should not impose but inherit as per the requirements of the society for the end result of the application. Starting the application is good, but if it has no end result, then what will happen? The application would be a burden and would be a great loss for the country. Before starting an e-government agenda, the government should have clear guidelines for how the agenda will increase administrative responsibility with fairness, accountability, transparency, and neutrality in the administrative process. These guidelines are for the content (the readiness) of the e-government process; however, the beginning should have a great impact for the program. That means the strategies and the policies should be proper for the e-readiness of the application of e-government.

The strategies and the policies depend first of all on the political strategies of the government, meaning that the government should determine which values it expects in the process of government from the application of e-government. The government could automate the process only, or it could make its functions open for citizens to practice democratic values. Therefore, when the expected values are determined, the next step of e-readiness is combining political, technical, organizational, and human factors. The technological factors should be well established. The organizational factors should support a positive attitude in employees

towards the application with a participatory approach among individuals. The term "human factors" refers to the process of training that familiarizes employees with the application can carries them to the final result of digital civic engagement.

If we consider the technological factor as the first process of the application of e-government, then it is necessary to remember that the dissemination of technology should be accomplished in such as way so that user-friendly outcomes can be seen. One of the important outcomes of e-government is visible on the portal; it should have proper information and available services. Moreover, the services should be organized to support a single-entry screen. The initiatives preparing a portal for the government of Bangladesh were primarily about promoting e-government, e-governance, and, more specifically, the process of interaction between the different targeted groups of government. The United Nations' (2012) recent study on e-government showed that the least development in e-government has been observed in South-Asia and in Africa. The reason they (ibid) provided is the imbalanced digital divide, mainly the e-infrastructure for providing information and knowledge creation. Moreover, the survey showed that countries are now concentrating on the decentralized single-purpose organization model by a single portal through which citizens can use all necessary information without any hassle (On e-government evaluation, Gupta and Jana, 2003). However, it has been observed that in most cases, the portal does not meet the main purpose of e-government in Bangladesh. One of the respondents said that,

> *Portal could only be an effective initiative when the whole effort would be coordinated in a very positive and progressive manner (Top management, district of Sirajganj, 29 May 2013).*

The effectiveness of the portal means a lot—establishing smooth communication, promoting transparency and accountability, and making a corruption-free democratic society. However, the effectiveness of the portal is not achieved only by the set-up of the portal window. During the preparation of a portal, a government should consider many issues to make it effective. For instance, national web portals should function as information centers for international as well as national users. The portal's language should, at the very least, cover the national and international language to make the governing system visible to national and international bodies. In the era of globalization, the government is not responsible only to the nation's citizens; it has some international responsibility as well. Therefore, the portal should contain the national language along with the international language--English. However, it has been observed that the national portal of Bangladesh has the alternative language (English) only on the initial page of the portal, and it is missing from the next pages. The screenshots in Figures 22 and 23show the language barrier of the portal of Bangladesh's national government.

This page has options for two languages, the national language, Bengali, and the international language, English. However, if we go through the next service from the portal, we find that the important services are not available in English. If we look at the screenshot in Figure 23, this will be clear to us.
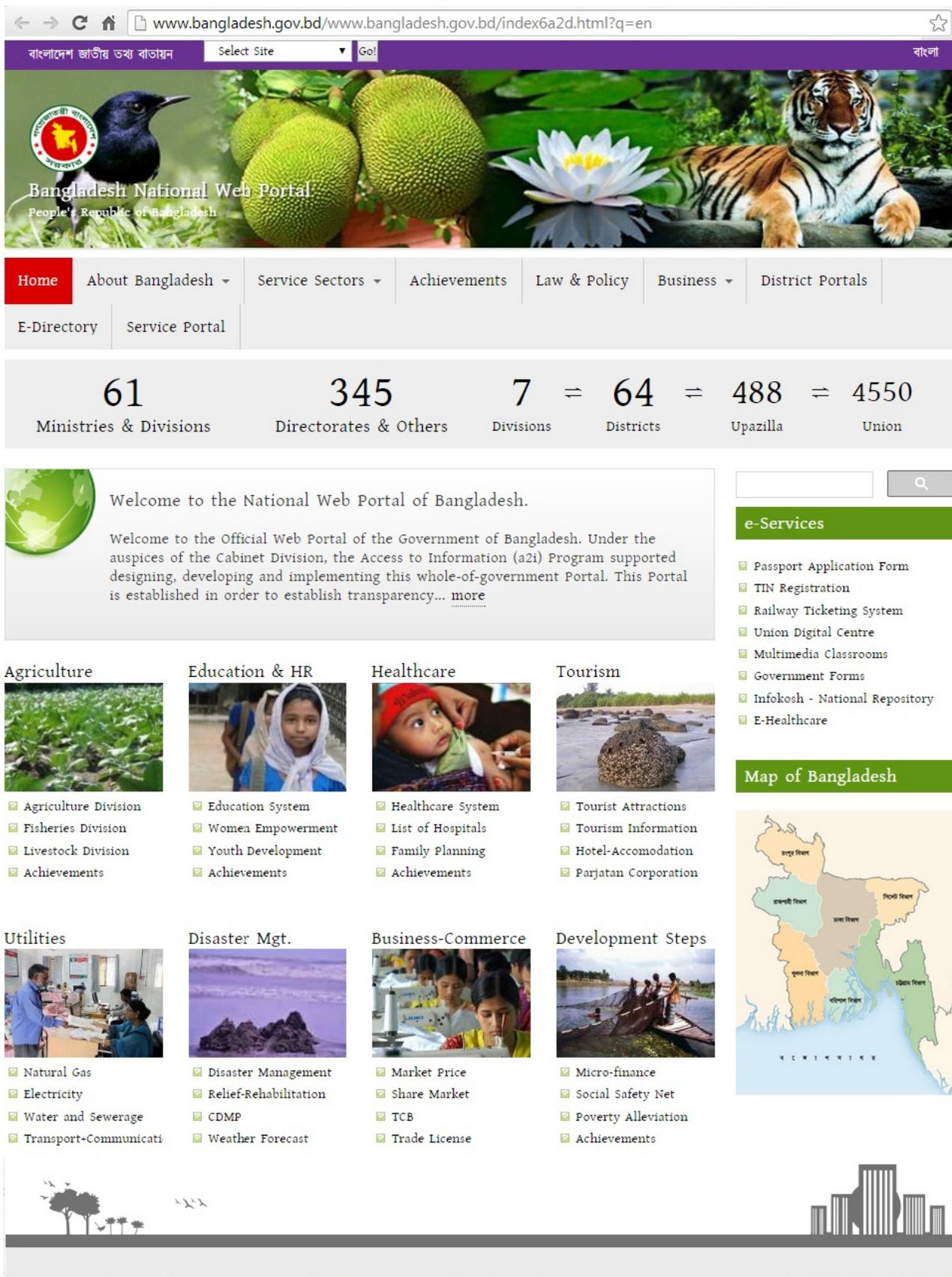
Figure 22. Screenshot of front page of national portal of Bangladesh

Figure 23. Screenshot showing available services through portal

The above picture appears if we click "Service Portal" on the home page of the Bangladesh government portal. There should be language options in the portal. In the era of globalization, in order to make a proper connection between national and international individuals and businesses, it is very important to focus on the language barriers of portal. The idea of the portal is not to complicate information for the users. It should, rather, be a very organized government window with all of the necessary information. There should be clear, visible links specifying where to find information. For example, if the services are related to "health care," there should be detailed information related to that in a stand-alone webpage detailing the health-care system. The main theme is that the topic should be elaborately explained with all necessary information for users. However, if we follow the site (Figure24), we would see that one of the most important topics, "health care," has no clear information for citizens and other individuals. Moreover, there are no available links to get other important information.
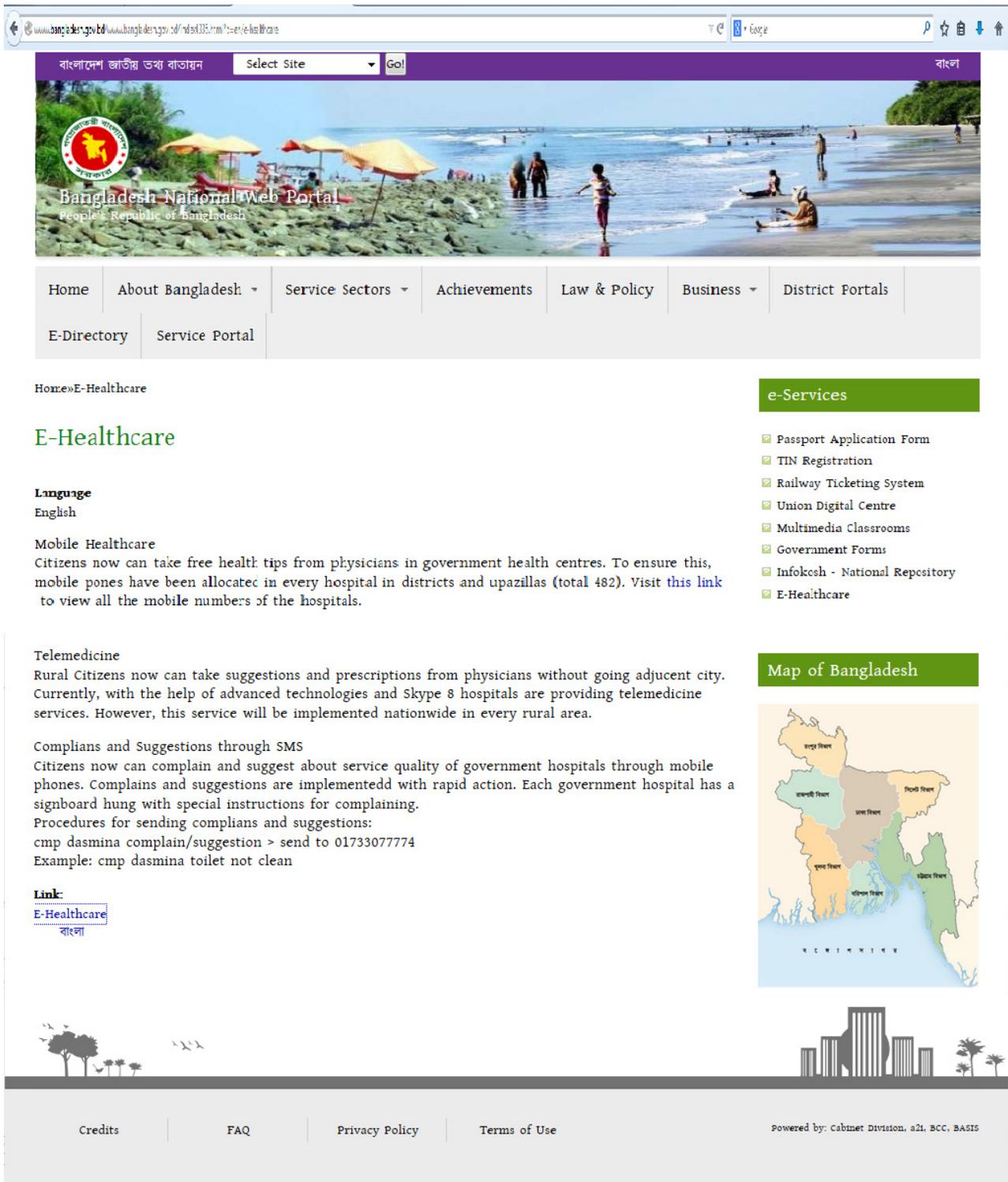
Figure 24. Lack of necessary information in portal

In addition, before initiating a portal as a window of government information, three most important issues--hardware, software, and the internet--should be carefully considered by the technical experts. These issues have a deep impact on the overall structure of the portal. The selection of hardware is key for the smooth operation of e-government. For instance, hardware should have the ability to perform numerous operations at a time and be able to handle a huge workload without requiring extensive modification. In this regard, it is necessary to mention that Bangladesh's government claims to have allocated many funds in the ICTs sector

to procure contemporary hardware equipment. However, in reality, the allocation of national funds is very poor to make ICTs a growing sector (cf. Digital-review.org, 2008).

Furthermore, internet access in Bangladesh is still very limited, and the capacity is not as good as it should be for e-government application. In 2004 the government adopted its Internet Connection and Usage Policy (ADB, 2006); however, after a decade, the condition of the internet has not made a great impact on the culture of the country's overall administrative process. For a seamless communication process, the need for internet service is obvious. Besides internet, there must be an uninterrupted electricity supply to use the available internet. However, there is huge lack of electricity in the whole country. Moreover, if we come to the issue of software systems, we see that the software should be compatible with the available hardware facilities. The goal is for e-government to circulate between the government and its different customers, so the hardware should be installed based on the software demand. However, in a real sense, the government has not installed the software system for its portal properly.

The National Web portal of Bangladesh (http://www.bangladesh.gov.bd/) is visually impressive and contains a lot of information but still has many problems. First, the portal appears to be static. All the information provided by the government is one-sided. The communication system between its different groups is not properly developed. At some point, citizens can download files for their further use and send feedback, but this doesn't seem satisfactory. If we examine Figure 25, it is clear that the communication process is correct and the feedback mechanism is almost missing from links all over the portal.
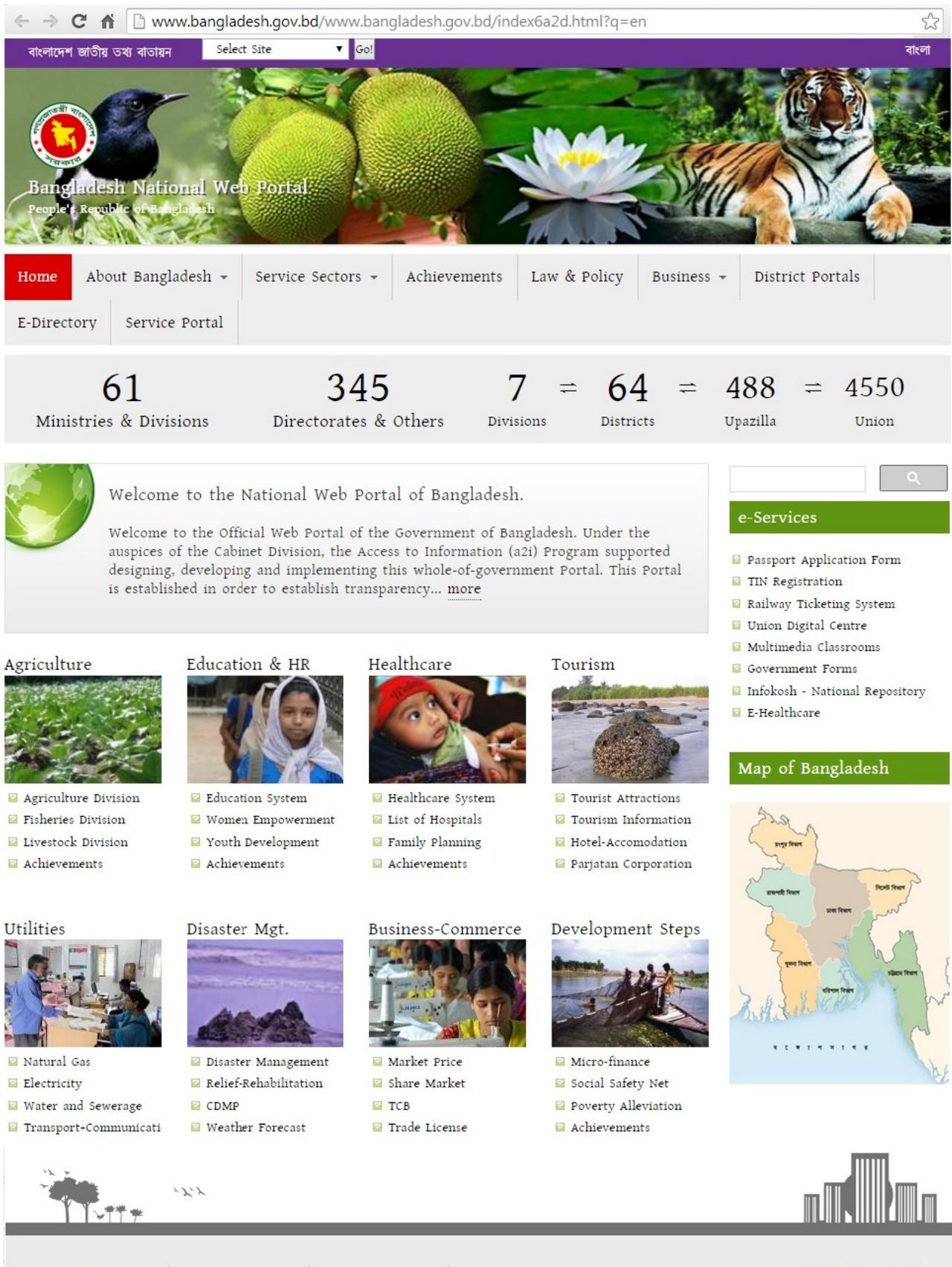
Figure 25. Indication of the communication process through portal.

In practice, the main page of the portal visualizes limited services; citizens and other stakeholders have no mechanism for giving their thoughtful responses. Feedback is the most important tool for democratic development of a country. If there is proper mechanism for feedback and the evaluation process is properly maintained, then the main theme of e-government is easy to achieve because feedback could create the opportunity to make the administration accountable to citizens, and accountability would automatically decrease corruption and unwanted happenings of administrative culture. One respondent said that

> *Portal should be considered as the window of communication process between the government and the citizens, however, the culture is still missing in Bangladesh (Middle management, district of Sirajganj, 3 June 2013).*

Another aspect observed here is that if anyone tries to access the portal for some specific information, the page remains unfound. Moreover, the portal monitoring system is inadequate. The government should develop and be aware of the information on the portal for dissemination. The information should be elaborated upon, and the dissemination of the information should be sequential. For example, on the "vehicle" page of the portal, the information should be explained properly, and a link should be given for further information. In addition, the monitoring system should be maintained properly. If any new information comes, then it is necessary that the information be uploaded to the portal without delay. Moreover, if any request comes from citizens, there should be means for prompt action to solve it or to provide feedback. However, the reality is that the portal of Bangladesh government administration still has a huge lack of information and monitoring. One interviewee said that

> *Specific information and the monitoring system are key features of a portal; as such the administration should realize the necessity of proper information for the citizen and a proper monitoring system (Operative core, district of Gazipur, 20 May 2013).*

If we consider the above statement, it is clear again that the intention of the government is essential for e-government. Obviously, the portal is very important to give a window for overall activities, however, the intention of the government and its administration is more important. For instance, if the government still wants to automate the process of administration or otherwise wants to establish smooth communication between the government's mechanisms and control their functions, then the portal cannot change anything. With full-featured automation, there may be proper information and a very good method of dissemination; however, the communication system among citizens would never be developed. Therefore, if there is no communication between government and its different stakeholders, then the overall outcomes of e-government remain obscure.

6.6   Summary

E-government is a vast initiative and cannot be successful without proper plans and strategies. With improper plans and strategies, a government can commence e-readiness for a successful e-government; however, at the end, it administrative effectiveness and efficiency will be the same as before. Before initiating the process of e-readiness, the government should focus on the actual success factors of e-government. The three most important factors for the success of e-government--infrastructures, trainings, and portals--have been identified here. In addition to these three, sub-factors are also important for achieving the utmost benefits of

e-government. The government should emphasize key issues before starting an e-readiness program for expensive e-government implementation. The issues may include:

a) Finding out the actual problems behind ineffective and inefficient administration,

b) Making proper plans and strategies (considering socio-economic condition of the specific country) for the program to be executed, and

c) Most importantly, determining the effective benefits from the application the government is expecting.

These issues are very important since there is a huge financial involvement in the process of e-readiness execution. If a government, especially in developing world, allocates and spends money without knowledge of the outcomes only to satisfy its development partners, then the losses are enormous. The citizens will sufferer, and the country will be poorer than its current state.

7 CONCLUSION

There is no doubt that e-government could be an actual reform effort for an effective and efficient administration in a developing country, especially in Bangladesh's public administration. Eventually, the positive growth of e-government is not negligible in these countries. The growth has happened both in the positive responses to e-government initiatives and the reform efforts for the success of those initiatives. It has been agreed that e-government could benefit from economic, social, and other sectors along with the administrative development of a democratic society and country as a whole. It has been observed that with few exceptions, most countries have shown positive responses to e-government development. Moreover, these countries have taken visible actions for the success of their initiatives.

However, it has also been observed that there are multifarious challenges to the utmost success of e-government. The most important one is e-readiness. E-readiness might be a single item with significant factors for the success of e-government. These factors include the application of ICTs, development of employees' personal growth through training, development of management approach for the success of e-government, and so forth. The most important component for the success of e-government is making proper plans and strategies for the application of e-readiness and setting the guidelines through which the outcomes will be achieved in the long run.

7.1 Overall e-government situation with key empirical findings

E-government development in most developing countries is slow, and progress is not steady. It has been observed that in some years, the countries have progressive affirmation, while in later years, they regress. Bangladesh significantly improved its e-government development scores in global rankings. With Bangladesh having progressed to a world e-government development ranking of 134, the outlook was not incompatible with the integration of economic, social, and environmental goals for development planning. The most recent rank of 150 shows the egression of e-government in Bangladesh in two years. In order to come out of this regressive situation in terms of the e-government development index, the following issues should be focused on by the national government:

1) Developing all applications with necessary citizen interface,

2) Distributing strictly-defined responsibilities for employees implementing the initiatives by A2I, and

3) Collecting feedback from citizens/businesses in a structured way, and analyzing and incorporating key feedback in the portal (as well as in e-government) to ensure maximum benefits from the A2I project.

If we consider the above issues, it is clear to us that e-government opportunity recognition is very important for the government institutions. This means that the concepts and opportunities created from e-government should be well-known to government officials, and actions should be taken accordingly. E-government is not only for online government and the creation of government windows via a portal; the opportunities of e-government are vast and can facilitate the government in providing endless benefits to citizens. Therefore,

the opportunities penetration and benefits gain should be considered the most important success of government. The penetrations of opportunities have different challenges, and there should be guidelines for a way out. The guidelines should be proper in terms of policies and strategies, infrastructures, training facilities, and a positive approach of management towards the overall development of the government institutions and their recognition of the opportunities from it.

The government institutions in most developing countries do not consider e-government as their thrust sector of development. The institutions have conceived the positive side of the e-government; therefore, they have initiated the program. However, at the end, most of the countries have no progressive remarks from e-government development. Recent studies by the United Nations (2014) reveal that the expected developments of e-government are not in sight in developing countries. The reasons for poor success may be considered here as the challenges that have been defined for e-government from different studies that have not been considered seriously. The reason for poor progress in e-government is the fact that the governments in question have not taken the challenges and their remedial measures seriously. Moreover, the money for such projects is spent without defined policies and strategies of e-government development.

The goal of e-government is same for every country in the world. What is important in the developed countries could be same for developing countries. Moreover, it has been noted that making the government effective and efficient through strengthening national capabilities, enhancing government performance, including public services, promoting transparencies, and reducing corruptions in the public sector is the goal of e-government. Therefore, the focus has been on how effectiveness and efficiency can be gained. Essentially, effectiveness and efficiency have been considered as the democratic outcomes of the applications. The democratic outcomes are possible only when there is a transparent and accountable administrative system. In order to make the administrative system transparent and accountable, the focus has been on the communication process between different stakeholders of the government, both inside and outside of the government institutions.

The communication process has been seen in developing countries as a sizeable dilemma. The government is very much interested in increasing the effectiveness and efficiency of its administrative mechanisms; however, the administrative process of government is not ready to embrace it, putting the whole e-government application at risk. The outcome and the benefits will never be possible with the current government approach. For example, promoting transparency and reducing corruption of the administration could be gained from enhancing government performance with inclusiveness of public services and citizens' feedback. In this regard, citizens have an important role as they are the beneficiaries of better government; however, if citizens are unable to give their comments and cannot frequently communicate with the authorities, then the whole outcome would be impossible, and the goals of e-government would remain out of reach.

Governments in developing countries have initiated e-government for democratic uplift. However, most developing countries have not changed the traditional administrative values that in most cases act as the main barrier to the development of a democratic administration. The overall condition of e-government is immature, as it has not been developed in an appropriate manner. Certain developments are visible in these countries: initiatives have been undertaken, the portal has been prepared, and the government has started focusing on e-government. However, findings show that the real sense of e-government is not progressive due to the unavailability of e-readiness factors such as readiness from ICTs, readiness from management approach, and, finally, readiness from the administrative or political approach. Empirical data has shown that the success of e-government is especially dependent on the success of e-readiness. The major empirical findings support this statement. The major empirical findings of this research at a glance are:

1) The success of e-government is solely dependent on the success of e-readiness.

2) Plans and the strategies are the basic readiness criteria for an effective and efficient administration.

3) The system of governing should be compatible with e-government reform efforts.

4) ICTs, proper training, and management approach should be considered the key elements for e-readiness dissemination.

7.2   Theoretical contribution at a glance

Theoretically, this study makes considerable contributions to perspectives on the e-government phenomena. These perspectives include e-readiness, e-government approaches and challenges for developing countries, and the modernization process of government and its administration through ICTs. Thereupon, different theoretical challenges have been faced to determine the best administrative process for e-government. Moreover, it has been noted that the administration process plays a vital role in the overall success of e-government. In principle, e-government is the combination of three most important issues--the content, the context, and the creation process--and each issue has a great impact on the success of e-government. Moreover, in order to make e-government successful, polices and strategies are critical. The government and its administration, especially in the developing country context, create the policies and the strategies. However, these policies and strategies often do not take into consideration the success of e-government.

During the case study on the e-readiness of Bangladesh's government, it was noted that the concerned authority does not properly understand the terms e-government and e-readiness. So, in addition to the guidelines, approaches, and challenges and their remedies through e-government, attention has been paid to clarifying e-government and e-readiness. It has been noted that e-government has many purposes to serve its functions. Moreover, the purposes have different indicators to mark effectiveness. In order to achieve the highest goals of e-government, the purpose should be served proficiently and in consideration of e-government indicators.

E-readiness is considered as contextual basis for e-government. When policies and strategies have been initiated, organizational culture should be developed to cope with changing patterns of administration on the basis of those policies and strategies. Moreover, here the technological requirements have been considered as an effective tool for the maturity of administration and its management. In the matter of e-government readiness, all these issues have been categorized and focused to develop the overall concept of the theoretical framework. On the whole, through the theoretical framework, it has been identified that the contextual basis of e-government is the combination of policies and strategies to make a successful administrative process for the maximum benefit of citizens and other stakeholders.

E-government has various challenges to its successful application. It has been identified that without proper harmony, the success of e-government is going to follow the pattern of NPM. Although NPM and e-government are different in applicability, as NPM is considered the approach of management and e-government is more to install electronic form into management, both concepts have almost the same reason for failure, and that is the reluctant attitude to change administrative approach and its management to support the concept. It has been clearly identified in the theoretical framework that the process of administration and its procedure are very important for the success of e-government. The technical, financial, and organizational challenges are manifold; however, the vital challenge for the success of e-government is the approach or process of governance adapted by the administration.

This study has formulated some important guidelines, approaches, and policy challenges for the concept of e-government. Before initiation of an e-government project, the following guidelines should be considered:

a) A starting point for the e-government approach should be determined;

b) The issues should be considered sequentially; and

c) The outcomes should be considered as the determiners of the success of e-government.

Regarding approach, a government should identify which approach is suitable for e-governance considering its own prospects and limitations and should adopt the approach that will yield the most positive result. In other words, the government should analyze the available theoretical frameworks in detail and sort out suitability for adoption in the work plan for gaining the recommended outcomes from e-government. Of course e-government has a lot of challenges, especially in the developing country context. These challenges include policy challenges, readiness challenges, and specific drawbacks for the outcomes. Although it can be difficult to foresee numerous challenges and identify proper methods for remedying them, adoption of certain strategies may be considered as a general tool for addressing any challenge. These strategies include:

1) The administrative systems to operate e-government,

2) E-government plans and strategies,

3) ICTs tools and techniques,

4) Expected outcomes from e-government,

5) Preparation of a portal for available information and their further links,

6) An online participation process for citizens and other stakeholders, and

7) A process of financial allocation.

7.3 Final remarks

7.3.1 E-readiness to promote e-government

The governing process of a country is reflected in the way the government and its administration act. In general, the governing process of a country follows a suitable governing style considering the common interests of people. Eventually, most of the democratic governments in the world want to secure citizens' rights and determine a governing pattern to become accountable and transparent to citizens. At present, there are generally four different government styles--self-governance, open governance, hierarchy, and rational goal. However, these forms of government are not always able to mitigate the common interests of citizens and secure their rights. Therefore, reform initiatives have been promoted both from inside countries and from the outer world. The outer world in the context of developing countries means developed countries and their alliance organizations such as The World Bank, The European Commission, and The United Nations. These organizations try to offer good solutions for promoting the democratic environment in a country so that citizens' rights can be ensured and government administration can become more efficient and effective. It was mentioned in the theoretical chapter that the most recent trend in such initiatives started in the 1970s. E-government has been considered the most effective of such initiatives.

The main theme of e-government is government online, while the main purpose of government online is more than what might be assumed from the term. In order to make the government online, readiness in terms of infrastructures, training, and finances is necessary. We have seen that the governing process in Bangladesh has followed the traditional system in which the highest authority always initiates policies and strategies and

directs field-level authorities to implement them. This might be one style of governing out of many alternatives, but this style of government should not be considered as the most effective alternatives of e-government applications. It has been shown in the theoretical chapter that the outcome of different e-government approaches is different. Some approaches of e-government could make the administration more democratic in nature, while others could make the government more autocratic. While readiness for online dissemination is important, readiness for democratic values is more important for achieving the right outcomes from the most sophisticated e-government application.

Detailed study reveals that the success of e-government depends on two main themes: the government online and the government with effectiveness and efficiency. Basically, the government online is the dissemination of ICTs (i.e., the computer, the internet, and the combination of hardware and software) and available training and the approach of management toward the applications. The outcome of ICTs via one single window or portal brought out the effectiveness and efficiency of the overall situation of government and its administration. There should be a proper plan of government for the application of e-government followed by visible actions to reach the final outcomes.

In the theoretical chapter, the proper action plan for e-government was delineated. The action plan is effective when there are positive end results. The government of Bangladesh first initiated e-government at the end of the 1990s. The first committee was formed in favor of the proper action of e-government in 1999, and the first policy from the plan was initiated in 2002. Since then, other committees have been formed and have formulated new policies and strategies. However, the end result was not progressive; rather it showed regressive feedback from the application. The regression is not only in terms of the dissemination of ICTs; the political approach of the implementation of e-government is also to blame for these unexpected happenings. Therefore, it could be said that the proper action plan should be taken both from the ICTs and from the political approach for the progressive feedback from the application that was found missing in Bangladesh.

The government of Bangladesh has spent a lot of money on the application of e-government; however, the outcome from this huge investment has had no positive indications. It could be said that the processes of e-government is the combination of every issue related to the application. The most important part is allocating money in accordance with the action plan. If there is not an effective action plan, then achieving positive results, even with spending the entire allocated amount of money, will be impossible. Since the initiation of e-government in Bangladesh, the government has allocated money to move the government online. The key issue of promoting the practice of democracy inside and outside of government has been missing from this plan, a fact that has gone unrecognized by the government.

Democratic values have different forms to be achieved. The most common form of democracy is the process of communication both inside and outside of government. Essentially, the communication should have a process through which both parties have free access to comments, remarks, and feedback on related issues. However, in reality, it has been observed that although the government is allocating funds, it is not getting constructive results from the application. The claim of a certain government authority that e-government has made the lives of people very comfortable is ridiculous. The only comfort found is the ability to download some forms from the government window. There is no solid approach of democratic values inside the practice through the e-government application. Pride in e-government could only be ensured with extensive and easy two-way communication. Communication should be taken as constructive for the improvement of the administrative process.

Abraham Lincoln famously described government as of the people, by the people, and for the people. Achieving democracy with the help of ICTs requires strong involvement of both political leaders and public managers or top bureaucrats. Without it, an e-government endeavor is doomed to fail, as there will be an obvious lack of power and leadership and insufficient resources in both e-government design and

implementation. In brief, "e-government" is more about governance and democracy than technology. This notion of democracy is not perceived in its true sense in the developing countries, which poses a challenge to the motives and rule of government in developing e-government.

In most of the developing countries, political and institutional context is very challenging because of weak governance in democratic institutions, high transaction costs in dealing with public agencies, and corrupt practices. In the context of Bangladesh, the use of ICTs for facilitating government-citizen interaction is overshadowed by the unwillingness of the bureaucratic circle, lack of accountability, and lack of transparency. This implies that the true breakthrough will not take place until the political-administrative framework within which e-government is applied has a supportive and enabling role vis-à-vis e-government practices, and especially government-citizen interaction.

It is a well-known strategy that citizens should not be neglected in e-government development. Yet, in e-government policy design and implementation, including the portal design, the role of Bangladesh's citizens has been marginal. Attitudinal readiness among the public is not necessarily a particularly critical problem as such, even if almost non-existent citizen involvement in e-government and portal design and implementation implies that the social shaping of technology is almost exclusively dominated by politicians with strong emphasis on ceremonies and signs of power as well as by public managers who are responsible of project management. The national portal may not include in its current form the most vital information to most citizens; on the other hand, as it is a gateway to government services, citizens could be given more say on the content of the portal, and at a later stage, they could be given more transaction services and also personalization.

Additionally, the basic approach of e-government and the use of ICTs in the government concerning the degree of government intervention, financial arrangements, and supply and demand emphases in e-government design should be more approach-oriented rather than follow the traditional way of delivering services. If the e-government agenda does not include any radical changes in government structures and processes—that is, if it is not meant to contribute to the transformation in the first place--it may merely reinforce existing power structures and governance systems. The power structure of governing systems should be developed and/or modified considering the current economic and social values of a country emphasizing an e-government agenda.

The regimes of a government are not always as compatible as the e-government demands. If we go to the theoretical framework, we see four types of governing systems. After the introduction of e-government, these governing systems have been turned into the reform-oriented e-government, open e-government, authoritarian e-government, and managerial e-government. However, it has been noticed that the authoritarian form of e-government only speeds the process of communication between central government and its local bodies than creating actual democratic practice through empowering citizens. Hence, the authoritarian form of e-government is not recommended; other forms that empower citizens through the actual democratic process should be considered for implementation. The study shows that most of the governments in the developing world follow the wrong type (authoritarian e-government), which is why these countries are not getting the proper benefits of e-government in terms economic and social development.

Eventually, if the current government status in Bangladesh is taken into account, it stands that the e-government initiative is in effect following the authoritarian mood. If we look at the e-government stage of maturity, we see that out of the five maturity stages needed for success of e-government, only two are in place in Bangladesh. These are stage one and stage two. However, analysis reveals that stage two is not even complete in all respect. It lacks bulk information in content and lacks site maps. The three other stages of online forms and submissions, transactions, and mirroring services are completely absent. The key issue of whether the increased use of ICTs will increase pluralism and meet the demand for democracy in society and increased economic prosperity does not arise here at all since the government is not considering incorporating

all the known stages of e-government. So, it is necessary for the government to look into completing all the components of e-government before expecting an outcome like open and participatory e-government.

7.3.2 Creation process, context, and content as the basic e-readiness factors

With the action plan, visible outcomes are expected from the application of e-government. The steps to achieve visible outcomes are disseminating ICTs and ensuring proper training and other e-readiness facilities for employees and others involved in the application. Theoretical analysis of the thesis clearly indicates that e-government is a system in which the creation process (policies and strategies) facilitates the context (the readiness) for the outcomes or the content. It has been described in the previous section that the policies and strategies are not proper in developing countries to achieve the expected benefits from e-government. Here, the focus of the coming analysis will be the context (the readiness process) of the e-government application that has been seen from the empirical data and the possible ways to overcome its challenges.

Bangladesh's public administration expected to achieve the process of context (i.e., e-readiness) through disseminating ICTs and providing the available training for employees. However, in reality, the dissemination of ICTs was poor in every aspect, with inadequate computer facilities, poor computer networks, and limited software applications. The government administration controls varieties of public activities where they do not have sufficient computers and networks that eventually slows down the government functions. Moreover, proper installations of software have not been ensured with the available hardware system. On the other hand, there are no proper training facilities for the employees in order to make the employees ready to use the software application and maintain the ICTs. The overall development in Bangladesh's e-government has serious flaws, and that is why the real goal of the application is not in sight.

Alongside the development of ICTs and the method of their dissemination, focus should be placed on usage through remote communications. The most important issue in increasing the usability of ICTs is internet connectivity. In order to provide services online, high-speed internet facilities should be ensured by the government. However, the government has no constructive initiatives to provide internet facilities to government offices or citizens. Particularly in Bangladesh and developing countries as a whole, the internet is very expensive for citizens, and government employees do not have enough internet facilities for their activities. Most government activates are still based on pen and paper. The e-mail system between government officials and different stakeholders in the government has not been popular due to the slow bandwidth of internet facilities. The government should focus on making the internet cheaper and faster so that people can easily afford to use the internet for their daily activities. Moreover, a culture should be developed in government administration for extensive use of the internet for day-to-day activities and transactions.

The internet has security and privacy issues that need a legal and technology framework to prevent abuse. The government of Bangladesh has promoted the legal issues of the use of the internet and its applications. However, the legal basis should be well-defined and well-known by both citizens and government employees. The legal framework would forbid people from illegal activities that break national and international laws through the internet and government employees from using the internet for personal purposes. Additionally, the government should arrange awareness-building campaigns on a regular basis. In this regard, the government should arrange regular meetings for employees, provide proper training, and give employees a clear conception of the privacy and security of internet usability for the application of e-government.

Presently, cell phones are ubiquitous, even in developing countries. The fashion of using cellular phones is so vast that people cannot think of daily life without one. This is true in Bangladesh as well. The government of Bangladesh has initiated some small-scale e-services (SMS application over cellular phone). These e-services presently offer only one-way communication (government to user) that contradicts the main theme of e-

government. It was mentioned earlier that the application of e-government should promote two-way communication. In this context, the government should take the initiative to put in place user-to-government communication so that citizens can get the full benefit from such SMS applications.

Bangladesh has another huge problem, which is that it struggles to provide a constant supply of electricity for its citizens. Since power outages have become a regular phenomenon all over the country, the government can use mobile devices in its ICTs fleet for seamless service to citizens in case of power failure. Because mobile devices have built-in power storage; inclusion of such devices in ICTs would ensure e-government services as ubiquitous applications. Additionally, the government should emphasize increasing its power supply capability by establishing new power plants and overhauling the old ones.

Besides infrastructures, there must be proper training facilities to address the general issues of e-government. Providing available ICTs applications such as computers and ubiquitous applications and training employees to handle these applications could make proficient employees to provide services and on responsive citizens to receive and communicate with the government. In addition to ICTs, other issues of e-government such as understanding the concept of e-government, leadership skills for handling situations, the method for transforming services, and so forth should be focused on in the training. It has been noted that government initiatives in providing constructive training to its employees are primitive. Considering the huge number of government employees, the government should divide the functions it provides and train the employees in a small team to develop their skills and gain the utmost benefits from e-government. Eventually, it has to be believed by the government that modernization of the administration is possible only through the application with the proper and efficient handling of that application.

Employing technical personnel who are mainly responsible for maintaining the ICTs hardware and software has been found problematic. The present process of selecting new recruits involves checking only theoretical knowledge that is far from the actual skill requirement. It is hereby recommended that technical skills should be the main criteria for new recruits. Skillful technical employees would be able to grasp new technologies easily through training; otherwise, technical employees could be a burden for the system. At this point, the present recruiting system needs modifying in a way that would ensure judgment of the recruits' theoretical, attitudinal, and practical knowledge. Moreover, the citizen, who is the service receiver in most cases, should be educated through different government initiatives from central to grassroots levels.

Summarily, the portal could be the indicator of the outcomes of e-government applications. The benefits of e-government must be reflected in the windows of portal. The maturity of e-government has been categorized in five different levels, with each level having outcome indicators and indicators of the failure to fulfill the utmost benefits from e-government. The lacks in different levels are visible through a review of the nation's portal. For example, the lacks in the highest maturity stages of e-government are characterized by the quality of integration of G2G, G2C, and G2B interaction. For highest maturity of e-government, the interactions should facilitate two-way dialogue through retaining the use of web comment forms and innovative online consultation mechanisms through using collective decision-making by the integration of consultation. Nonetheless, in reality, if it has been seen that the portal cannot support the above mechanisms and cannot fulfill the outcome of achieving the democratic social structure through the accountability and transparency of administration. Without changes, administration will never be an effective and efficient mechanism or see the utmost benefits of e-government.

The government should focus on what is lacking for the available maturity benefits of the portal. It should devise a mechanism to identify the problems and take necessary actions without delay. As part of the e-government application, the government should also focus on the leadership qualities of its employees so that the employees can find problems suggest solutions. To succeed on this front, group meetings of employees could be arranged on a regular basis so that the employees can have opportunities to share their views and thoughts.

Finally, e-government is the most sophisticated reform initiative of a government and its administration. This reform initiative is complex, with many issues involved. E-government offers a rare opportunity to uplift the status of a country in terms of economic and social development. One of the main obstacles towards instituting all components of e-government is the government's attitude towards involving its citizens in the governing process. If a government is really eager to implement e-governance, present day technologies offer many alternatives that can be easily adapted for successful application. The different known issues (creation process, context and the content) that impede the reform effort should be addressed systematically. Initiatives, planning, funding, procurement and installing of ICTs, training, and portal should all be designed and implemented following strict procedures so that every step has defined strategies and goals.

7.3.3   Critical scenario

In the context of Bangladesh, it has been observed that despite the government spending a considerable amount of money, there has been no significant outcome in terms of government reform through e-government applications. The bitter fact is that the highest authorities (the policymakers) are reluctant to democratize components of the governing process. It is therefore necessary to help policymakers understand the urgency for e-governance to be put to maximum use for the country. Otherwise, Bangladesh will be left far behind on the world stage. In this context, donor agencies can play a vital role by arranging international workshops with policymakers as participants and spread awareness of the importance of e-governance.

It has been observed that most of the workshops and training programs on e-governance and related issues are organized by donor agencies; government initiatives seem to be lacking in this area. Without participatory involvement of the government in terms of policy and finance, e-government achievements are doomed to fail.

The world is changing day by day; new technologies are evolving to make life easy and comfortable, and government plays the role of facilitator. It would be indeed a great failure for any government to lag behind the modern trend of governance (utilizing e-technologies with citizen participation) that helps societies elevate their status in the contemporary world, thus making democracy truly meaningful.

7.4   Proposals for future research

Despite lot of efforts the developing countries are not getting fruitful outcomes as per expectations from e-government due to lack of initiatives in correct fashion. In the empirical data, it has been observed that the requirements related to e-government were not supported by proper applications and trainings. Thus, it could be said that the e-government is not sound for e-readiness. In order to make the e-government a well-accepted application in the society, there is long way to go. For success, regular research efforts on e-government and e-readiness are necessary.

Considering the research findings, the following future steps in the field of e-government research are recommended:

1) Proposing a framework for donor agencies and other international players in educating governments of developing and underdeveloped countries so that these governments can move forward in implementing e-governance concepts in their systems through sustainable means and goals;

2) Identifying the ways in which people want to get services through e-government mechanisms so that it will be possible for the government to change from the traditional approach to the new approach easily;

3) Examining additional benefits that are possible in developing countries, especially in Bangladesh, that offer new benefits for societies through e-government; and

4) Studying social challenges to the expected result from e-government development programs in terms of how the broader relation between government, society, and the economy can be improved in the long run.

Through this proposed research, it would be possible to ask the people what they need from the government and in which ways their expectations have been met. Side by side with democratic advancement, e-government is supposed to open the era of economic advancement in society. Though different societies have different economic patterns, it is important to identify the ways in which e-government could be beneficial in a particular economic and social context. E-government involves not only the automation of the administration, but also numerous other challenges in the social context that should be identified through research and incorporated in the e-government agenda for the overall development of the country.

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APPENDICES

Appendix 1 (Interview questions)

General Information

Name:

Designation:

Specific Duties:

District:

Date:

1. How do you define the concept of e-government?

2. How do you think that the current regime of government is favorable for the application of e-government?

3. How do you think that the strategies of e-service are the right way to execute e-government?

4. How do you evaluate the e-readiness for the success of e-government?

5. How the e-readiness plan have been implemented by the government?

6. How have you been trained up for e-government?

    6.1   How do you come up with the basic technology component?

    6.2   How do you assess that the expected value of e-government has been gained from the current training program?

    6.3   How do you think that you are skilled enough for the success of e-government?

7. How the infrastructural basis should be for e-government?

    7.1   How the system allowed citizen to connect the number of pages and links?

7.2   How the online transaction process works?

7.3   How the administrations are prepared to handle the numerous performances at the same time?

7.4   How the hardware components match with the software applications?

8. How the behavior affects for e-government?

8.1   How have you been trained up to cope with changing pattern of administration?

8.2   In your opinion, how different barriers affect to change the current administrative approach towards e-government approaches?

9. How do you evaluate the current administrative portal of government?

10. How do you determine the outcomes of e-government?

11. How do you think that the current administrative approach is favorable for the application of e-government?

12. In your opinion, how mature the current governing process in case of the application of e-government?

Appendix 2

Government of People's Republic of Bangladesh
Office of the Deputy Commissioner, Sylhet
ICT Section
(www.Sylhet.gov.bd)

Memo no: 05.60.9100.024. 06.00 3.10 -87   Date: 22/04/2013

Ref: Application of Mr. Abir Hasan Khan, Student of PhD, School of Management, University of Tampere, Finland.

With the reference of above mentioned application, the permission of accessing the office of the Deputy Commissioner, Sylhet for the collection of data of PhD research is hereby granted. You can access this office and can interview selected officers and other subordinates associated with e-service.
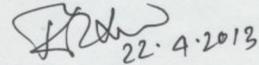
22. 4.2013
(Sheikh Matiar Rahman)
Additional Deputy Commissioner (Edu & Dev)
&
Focal Point (ICT)
Phone: 0821-722716

Mr. Abir Hasan Khan
Student of PhD
School of Management,
University of Tampere,
Finland.

Copy to:
1. Dean, School of Management, University of Tampere, Finland.
2. CA to Deputy Commissioner, Sylhet to inform him.
3. Office Copy.

Appendix 3

Government of Peoples Republic of Bangladesh

Office of the Deputy Commissioner, Sirajganj

ICT Section

(www.sirajngaj.gov.bd)

Memo no.: ICT. 3-3/2013-64   Date: 16.05.2013

Ref: Application of Mr.Abir Hasan Khan, Student of PhD, School of Management, University of Tampere, Finland

With the reference of above mentioned application, the permission of collecting data of PhD research from the office of the Deputy Commissioner, Sirajganj is hereby granted. You can have access to this office and interview selected officers associated with e-service for this purpose.
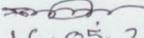
16.05.2013
(Ommey Salma Tenzia)
Additional Deputy Commissioner (Revenue)
&
Focal Point (ICT)
Phone: 0751-62585

Mr.AbirHasan Khan
Student of PhD
School of Management,
University of Tampere,
Finland.

Copy to :
1. Dean School of Management, University of Tampere, Finland.
2. CA to Deputy Commissioner, sirajganj to inform him.
3.Office Copy.

1

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Appendix 4

Government of Peoples Republic of Bangladesh

Office of the Deputy Commissioner, Gazipur

ICT Section

(www.Gazipur.gov.bd)

Memo no.: 05.12.3300.025.02.001.09-209   Date: 19.05.13

Ref: Application of Mr. Abir Hasan Khan, Student of PhD, School of Management, University of Tampere, Finland

With the reference of above mentioned application, the permission of accessing the office of the Deputy Commissioner, Gazipur for the Collection of data of PhD is hereby granted. You can access this office and can interview selected officers and other subordinates associated with e-service.

19.05.13
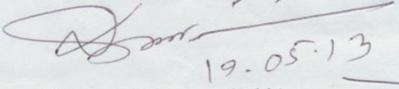
(Dr. Dewan Muhammad Humayan Kabir)

Additional Deputy Commissioner (Revenue& L.A)

&

Focal Point (ICT)

Phone:

Mr. Abir Hasan Khan

Student of PhD

School of Management,

University of Tampere,

Finland.

Copy to:

1. Dean School of Management, University of Tampere, Finland.
2. CA to Deputy Commissioner, Gazipur to inform him.
3. Office Copy.

Appendix 5 (The coordinated department of functions at DC office)
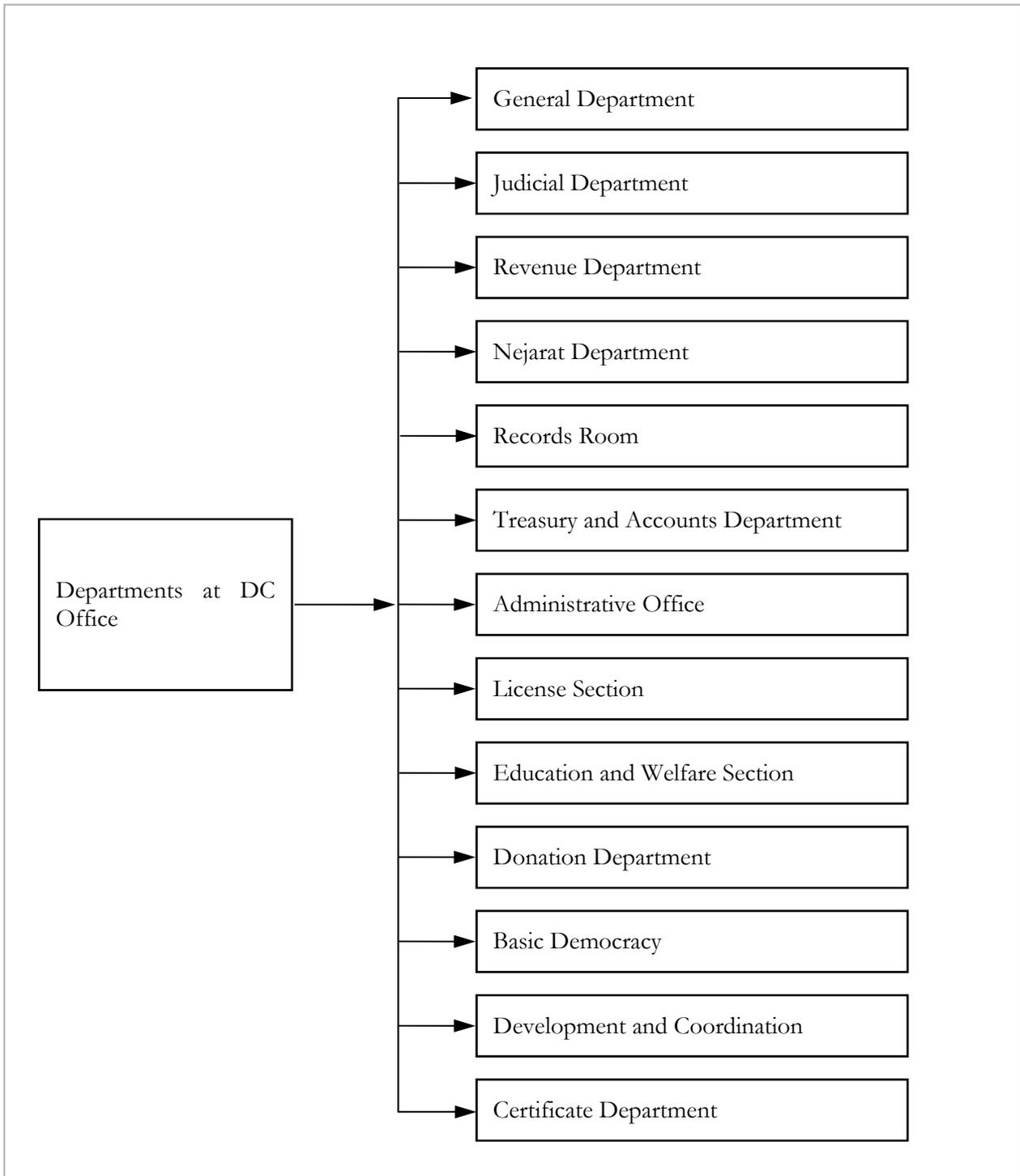
Appendix 6 (Organogram of Sylhet district administration)

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                          ┌──────────────────┐
                          │ Deputy           │
                          │ Commisssioner (DC)│
                          └──────────────────┘
                                   │
     ┌───────────┬────────────────┼─────────────────┬──────────────────┐
     ▼           ▼                ▼                 ▼                  ▼
┌──────────┐ ┌──────────┐ ┌──────────────┐ ┌──────────────┐ ┌──────────────────┐
│Additional│ │Additional│ │Additional DC │ │Additional DC │ │Additional      DC│
│DC(General)│ │DM        │ │(Revenue)     │ │(Local        │ │(Education and ICT)│
│          │ │          │ │              │ │ Government)  │ │                  │
└──────────┘ └──────────┘ └──────────────┘ └──────────────┘ └──────────────────┘
     │           │              │                 │                  │
┌──────────┐ ┌──────────┐ ┌──────────┐   ┌──────────────┐   ┌──────────────┐
│General   │ │Imigrant  │ │Record room│  │Local         │   │Education     │
│section   │ │Welfare   │ │          │   │government    │   │              │
└──────────┘ └──────────┘ └──────────┘   └──────────────┘   └──────────────┘
     │           │              │                                  │
┌──────────┐ ┌──────────┐ ┌──────────┐                    ┌──────────────┐
│Relief  and│ │Treasury  │ │Land      │                    │ICTs          │
│Rehabilitation│ │       │ │          │                    │              │
└──────────┘ └──────────┘ └──────────┘                    └──────────────┘
     │                          │
┌──────────┐             ┌──────────┐
│Nezarat   │             │General   │
│(Protocol)│             │Certificate│
└──────────┘             └──────────┘
     │
┌──────────────┐
│Information and│
│Claim          │
└──────────────┘
     │
┌──────────────┐
│Business   and│
│Trade         │
└──────────────┘
     │
┌──────────────┐
│Establishment │
└──────────────┘
     │
┌──────────────┐
│Library       │
└──────────────┘
```

Appendix 7 (Organogram of the Sirajganj district administration)
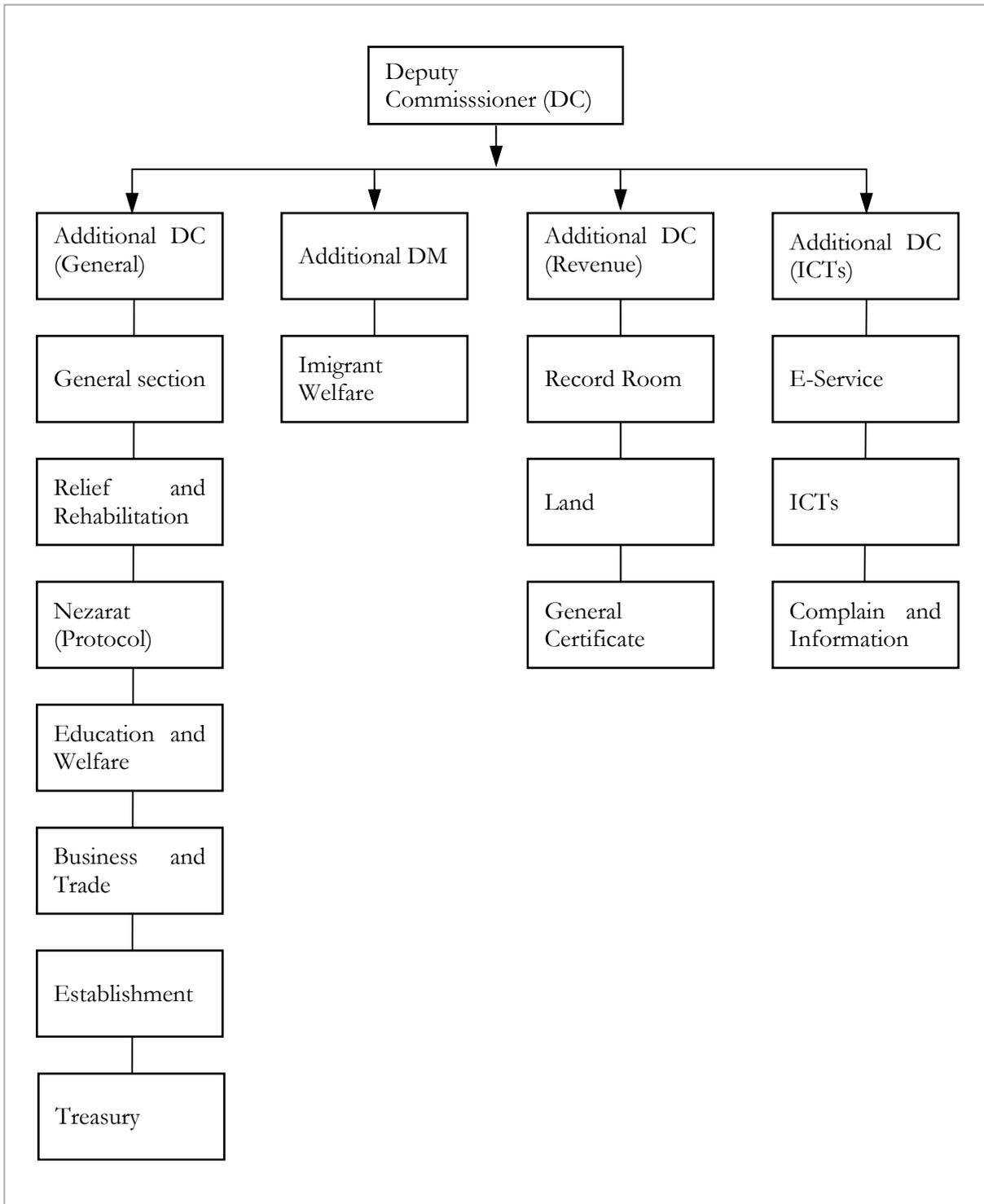
Appendix 8 (Organogram of the Gazipur district administration)

```
                        ┌─────────────────────┐
                        │ Deputy Commisssioner │
                        │ (DC)                 │
                        └──────────┬──────────┘
        ┌──────────────────┬───────┴──────────┬──────────────────────┐
        ▼                  ▼                  ▼                      ▼
┌───────────────┐  ┌──────────────┐  ┌──────────────┐  ┌──────────────────┐
│ Additional DC │  │ Additional DM │  │ Additional DC│  │ Deputy Director  │
│ (General and  │  │              │  │ (Revenue)    │  │ (Local government)│
│ ICTs)         │  │              │  │              │  │                  │
└───────┬───────┘  └──────┬───────┘  └──────┬───────┘  └────────┬─────────┘
        │                 │                 │                    │
┌───────▼───────┐  ┌──────▼───────┐  ┌──────▼───────┐  ┌────────▼─────────┐
│ General Section│  │ Imigrant     │  │ Record Room  │  │ Localgovernment  │
│               │  │ Welfare      │  │              │  │                  │
└───────┬───────┘  └──────┬───────┘  └──────┬───────┘  └────────┬─────────┘
        │                 │                 │                    │
┌───────▼───────┐  ┌──────▼───────┐  ┌──────▼───────┐  ┌────────▼─────────┐
│ ICTs          │  │ Passport     │  │ Land         │  │ Law              │
└───────┬───────┘  └──────┬───────┘  └──────┬───────┘  └──────────────────┘
        │                 │                 │
┌───────▼───────┐  ┌──────▼───────┐  ┌──────▼───────┐
│ Nezarat       │  │ Donation and │  │ General      │
│ (Protocol)    │  │ Rehabilitation│ │ Certificate  │
└───────┬───────┘  └──────────────┘  └──────────────┘
        │
┌───────▼───────┐
│ Education and │
│ Welfare       │
└───────┬───────┘
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┌───────▼───────┐
│ Business & Trade│
└───────┬───────┘
        │
┌───────▼───────┐
│ General       │
│ Certificate   │
└───────┬───────┘
        │
┌───────▼───────┐
│ Treasury      │
└───────┬───────┘
        │
┌───────▼───────┐
│ Establishment │
└───────────────┘
```