Study of eGovernment in Bangladesh

Conducted by
Bangladesh Enterprise Institute

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Foreword

There is no denying that eGovernment presents significant potential for addressing many of the existing weaknesses in governance in Bangladesh. The importance of introducing and
operationizing eGovernment through the use of modern information and communication technology (ICT) also merits the focused attention of the Government of Bangladesh. The growing and expanding use of ICT through the use of informatics can help improve governance in multiple ways. It can also serve as a tool to enhance productivity and improve the quality of government services. In addition, it can help to institutionalize management systems that reduce the scope for rent seeking opportunities. Furthermore, it can strengthen information flow among government agencies and within the private sector and civil society.

As we all know, information is power in today’s world. Secrecy and opaqueness obstruct the process of sharing information. Many of the frustrations that citizens encounter in their interface with the government in Bangladesh could be removed through the increased practice of eGovernment. This will also pave the way for greater openness, transparency, and accountability in government performance.

Introduction of eGovernment in a phased way, with clearly defined objectives, responsibilities of public officials, and performance evaluation systems can set the basics right for combating corruption and ensuring effective use of public resources, thus alleviating poverty.

With these objectives in mind, the Bangladesh Enterprise Institute (BEI) undertook the study on “eGovernment in Bangladesh.” Our research team visited as many as 45 government Ministries/Divisions/Departments to investigate the present state of affairs regarding the introduction of eGovernment and the progress made in this area. In general, eGovernment initiatives appeared to be in an initial stage. Lack of serious resolve and sincere initiative and drive were found to be significant problems. Proper planning is also lacking, as well as genuine execution.

The study highlights the successful operation of the Roads and Highways Department of the Communications Ministry, the Hajj Management website of the Religious Affairs Ministry, Bangladesh Bank, and the electronic Birth and Death Registration Project of the Rajshahi City Corporation. Semi successful eGovernment activities of the Ministry of Foreign Affairs, the Ministry of Science and Technology, and the Parliament Secretariat have also been thoroughly studied to determine ways to achieve further success in future. Intensive study was also made of the unsuccessful eGovernment activities of the Election Commission’s Voter Registration project.

Like any other developing country, Bangladesh has limited resources in addition to problems of inequity and inefficiency. The introduction of eGovernment is a needed step for setting the basics right, which will in turn create enabling conditions for national development and prosperity through accelerated economic growth. In this connection, eGovernment can facilitate the increased flow of information about the availability and use of existing resources as well as public services. The Government needs to initiate, on a priority basis, a process of imparting e-education to the people involved in the country’s governance mechanisms.

I am grateful to my colleagues Mr. M. Shafiullah and Mr. Zahid Hossain for their participation in the study, including visits to multiple government agencies to collect necessary data in connection with the study. Mr. Mridul Chowdhury deserves special appreciation for his ready advice and professional knowledge as a consultant to the project. Finally this study would not have been possible without the support we received from The Asia Foundation. I would like to make special mention of Mr. Thomas Parks, the Foundation’s Regional Program Officer for Information Technology, and Mr. Kim McQuay, Representative to Bangladesh, whose enthusiasm and advice were much appreciated.
Farooq Sobhan  
President  
Bangladesh Enterprise Institute

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**List of Acronyms and Abbreviations**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACR</td>
<td>Annual Confidential Report</td>
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<tr>
<td>ADB</td>
<td>Annual Development Budget</td>
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<tr>
<td>ADP</td>
<td>Annual Development Programme</td>
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<tr>
<td>BANBEIS</td>
<td>Bangladesh Bureau of Educational Information and Statistics</td>
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<tr>
<td>BBS</td>
<td>Bangladesh Bureau of Statistics</td>
</tr>
<tr>
<td>BCC</td>
<td>Bangladesh Computer Council</td>
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<tr>
<td>BEI</td>
<td>Bangladesh Enterprise Institute</td>
</tr>
<tr>
<td>BOO</td>
<td>Build-Own-Operate</td>
</tr>
<tr>
<td>BOOT</td>
<td>Build-Own-Operate-Transfer</td>
</tr>
<tr>
<td>BOT</td>
<td>Build-Operate-Transfer</td>
</tr>
<tr>
<td>BTRC</td>
<td>Bangladesh Telecommunication Regulatory Commission</td>
</tr>
<tr>
<td>BTTB</td>
<td>Bangladesh Telegraph and Telephone Board</td>
</tr>
<tr>
<td>BUET</td>
<td>Bangladesh University of Engineering Technology</td>
</tr>
<tr>
<td>CA</td>
<td>Certification Authority</td>
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<tr>
<td>CIDC3</td>
<td>Consolidation of Institutional Development Component</td>
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<td>CIO</td>
<td>Chief Information Officer</td>
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<td>EBR</td>
<td>Electronic Birth Registration System</td>
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<td>ETS</td>
<td>Electronic Tendering System</td>
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<tr>
<td>G2B</td>
<td>Government-to-Business</td>
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<tr>
<td>G2C</td>
<td>Government-to-Citizen</td>
</tr>
<tr>
<td>G2E</td>
<td>Government-to-Employee</td>
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<tr>
<td>G2G</td>
<td>Government-to-Government</td>
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<tr>
<td>GIS</td>
<td>Geographic Information System</td>
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<td>GOB</td>
<td>Government of Bangladesh</td>
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<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
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<tr>
<td>IICT</td>
<td>Institute of ICT</td>
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<td>IMED</td>
<td>Implementation, Monitoring and Evaluation Division</td>
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<tr>
<td>LAN</td>
<td>Local Area Network</td>
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<tr>
<td>LIC</td>
<td>Legislative Information Center</td>
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<tr>
<td>MIS</td>
<td>Management Information System</td>
</tr>
<tr>
<td>MOFA</td>
<td>Ministry of Foreign Affairs</td>
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<tr>
<td>MORA</td>
<td>Ministry of Religious Affairs</td>
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Executive Summary

Bangladesh has only recently begun to take serious initiatives in eGovernment. The National Information and Communication Technology (ICT) Policy 2002 gives due emphasis to the gradual implementation of eGovernment in all government offices. To realize the goals set forth by the Policy, an ICT Task Force has been formed with the Prime Minister as the Chairperson and the Secretary of the Ministry of Planning as the Member Secretary. In 2003, a program entitled "Support to ICT Task Force (SICT) Project" was undertaken by the Planning Division of the Ministry of Planning with the mandate of serving as an administrative and secretarial arm to assist the ICT Task Force to realize various projects related to ICT, particularly eGovernment. eGovernment can be defined as the application of information and communication technology (ICT) to improve the efficiency, responsiveness, transparency, and accountability of government. Common applications of eGovernment include online delivery of government information and services, computerized licensing and registration, web-based tender notification and procurement, web-enabled complaints submission, and online public comment for draft legislation. eGovernment aims to streamline relationships between government, business, and citizens through effective use of ICT.

Several government offices have begun to undertake eGovernment projects, ranging from basic computerization to sophisticated information systems that aim to automate processes and to ensure more efficient service delivery. These projects have met various levels of success. While it may be too early to reach definitive conclusions regarding the final outcome and impact of these eGovernment initiatives, important lessons can be drawn from experience to date.

For analytical purposes, some case studies of eGovernment initiatives have been selected and classified according to the following three categories:

Category 1: Success Stories: projects which have met desired goals
Category 2: Semi-Success Stories: projects which have mixed experiences
Category 3: Unsuccessful Stories: projects which have failed to meet desired goals

The case studies under "Success Stories" include the following:
Ministry of Religious Affairs: has developed an interactive website for Hajis that includes facilities for searching particulars of individual Hajis and their respective flight particulars, and for sending and receiving messages or death bulletins.

Department of Roads and Highways: has developed an interactive website that includes features such as zonal operations, relevant contact information, searchable database of contractors, tenders, and schedule of rates.

Rajshahi City Corporation: has developed an Electronic Birth Registration System linked with health and schooling services provided by the city.

Bangladesh Bank: has automated a number of internal processes and developed an information-rich, dynamic website.

The case studies under "Semi-Success Stories" include the following:

Ministry of Foreign Affairs (MOFA): has developed an interactive website that contains searchable databases of Bangladeshi missions abroad and foreign embassies and missions in Bangladesh. The website does not get updated regularly and many links have yet to be activated. In addition, MOFA has built a modest level of ICT infrastructure, but it is not being used very effectively. Moreover, most internal processes have not been automated yet.

Ministry of Science and ICT (MOSICT): has been mandated to provide vision, direction and facilitation to ICT-related activities in the country. While MOSICT played a lead role in the National ICT Policy of 2002, most of its activities have been limited to ICT infrastructure development, with a particular focus on computerization, connectivity, and training. The Ministry is not well integrated with other important government institutions. Overall, the Ministry lacks the necessary empowerment to carry out its function effectively.

Parliament Secretariat: has computerized the Parliament Library, digitized various important bills and ordinances, created computer user centers for Members of Parliament, and established a well-connected Training Center. Despite progress to date, many of these resources remain unused, and no internal processes have been automated. In addition, the Secretariat is not well linked with other government institutions.

The case study under "Unsuccessful Stories" focused on the following initiative:

Election Commission Secretariat: undertook a national project to generate a computer-based ID card for each registered voter. The project failed almost completely due to poor planning, over-ambitious projections, and-most importantly—lack of adequate political commitment. The project was eventually abandoned.

Several important lessons can be drawn from the selected case studies. Among these, the most significant point to note is the importance of bureaucratic commitment and political will from the top level. Without such support, many projects—some of them quite expensive—have stopped midway, run out of funds, or otherwise failed to reach desired goals. Top-level political will and bureaucratic commitment is the single most important factor that has tipped the balance toward success or failure. As a rule of thumb, resources should not be wasted on projects that lack necessary ownership and commitment among relevant senior-level officials. From the case studies, it can be inferred that the optimal way to ensure success is to seek government agencies and eGovernment champions who have already developed an idea and are actively seeking support. If a project is initiated by a government decision-maker and project champion, there is a much greater chance of success. Accordingly, future initiatives should focus on identifying and supporting self-selecting eGovernment champions, rather than imposing or artificially injecting projects at the instance of external institutions, including donor agencies.
Another significant lesson is that the most successful projects are those that have emphasized the development of usable and practical software applications to automate internal government processes and to provide services more effectively using ICT systems. An eGovernment strategy that places too much emphasis on procuring hardware and establishing connectivity is bound lose sight of the key objective of making governance more efficient. In many eGovernment initiatives to date, there has been a distinct tendency to first "decorate" offices with new computers and then to set up a Local Area Network (LAN), without first analyzing what improvements these computers and networks will bring. In addition, it is frequently found that one project funds hardware procurement while another project provides resources for customized software and information systems. In many cases, training programs for government officials have not been consistent with associated hardware and software procurement plans. In view of these inadequacies, the Government of Bangladesh should take steps to ensure that ICT is purchased in "packages" that include application/software development, hardware, networking/connectivity, capacity building, change management for users, and the process and procedural changes that must accompany a new system.

An important observation drawn from the case studies is that the Government of Bangladesh does not have the necessary support structure to manage and maintain ICT systems in government. For example, the Government does not have an adequate system for recruiting and developing a permanent ICT human resource base, and it would be prohibitively expensive for all government offices to maintain permanent ICT staff in the short or medium term. As an interim solution, the Government should give high priority to establishing a unit within or outside government to provide advisory, management, and maintenance support services and allocate sufficient funds for them to carry out these functions. Although the Bangladesh Computer Council is supposed to carry out these functions, it is not given resources to retain highly trained and experienced technical personnel.

Another significant limitation to the current system of making ICT-related policies, priorities, and strategies is that these functions are relatively centralized. The National ICT Task Force is the highest ICT policy-making body of the country, but there are no similar bodies that identify ICT-related needs and priorities at the level of individual ministries. The Government should take immediate steps to decentralize ICT policy-making and develop more micro-level plans for incorporation of ICTs in the government. It should also allocate funds to individual ministries to carry out these functions.

Partnership with the private sector in implementing eGovernment projects is an area in which the Government of Bangladesh has shown a striking lack of initiative. Bangladesh's legacy of socialist-oriented economic principles has embedded a deep-rooted mistrust of the private sector among some government officials. The Government lacks adequate technical, managerial, or financial resources to venture into eGovernment solely on its own. For sustainability and strategic planning of eGovernment, it is essential for the Government to establish partnerships with the private sector. Save for a few isolated cases, such partnerships have yet to be established.

1. Introduction
1.1 Background
Bangladesh faces a variety of governance challenges, including corruption, public administrative
malaise, and lack of adequate transparency and accountability in the exercise of public decision-
making powers and the delivery of public services. These problems have prompted a growing
interest in practical reform initiatives. eGovernment holds significant potential as a tool to assist
the Government of Bangladesh in achieving its governance reform objectives. The Government
has undertaken a variety of information and communication technology (ICT)-related initiatives.
Some of these are limited to basic computerization, while others involve the automation of
sophisticated government processes and the online delivery of services to citizens and the
business community. With support from The Asia Foundation, Bangladesh Enterprise Institute
(BEI) has conducted this study on experience in, and lessons learned from, various
eGovernment initiatives in Bangladesh. The study has identified various constraints to the
adoption of eGovernment and analyzed the factors that contribute to the success of
eGovernment initiatives. It has also provided recommendations and identified specific short-
term action steps for the further proliferation of eGovernment in the country.

1.2 Objectives of the Study
The study was guided by the following objectives:
1. to identify the recurring, critical constraints to the adoption of eGovernment in
Bangladesh, especially those challenges that are non-technical in nature;
2. to determine the factors that have contributed to the success of eGovernment projects
that have met or exceeded their objectives;
3. to provide an empirical basis for the design and implementation of new program
strategies for accelerating the adoption of eGovernment in Bangladesh, through a combination of
private sector, civil society, and government targeted activities and partnerships;
4. to identify, motivate, and support eGovernment champions; and
5. to provide recommendations on eGovernment initiatives that offer greatest potential to
build on lessons learned from past experience.

1.3 Research Methodology
The study was conducted through a combination of research tools, including questionnaires,
telephone interviews, on-site visits, and face-to-face meetings with relevant officials and experts.
The BEI research team visited or interacted with 45 government offices, eight of which have
been selected for in-depth case studies. Among the case studies, four eGovernment initiatives
have been characterized as “success stories,” three as “semi-success stories,” and one as
“failed story.” The factors that were taken into account in evaluating eGovernment projects
include:
1. ICT Infrastructure: availability of hardware resources and connectivity infrastructure.
2. Government Process Automation: improvements in the efficiency in internal government
processes that have resulted from the eGovernment project.
3. Citizen/ Business Services: sophistication and efficiency of delivery of services for
citizens and business.
4. Management of eGovernment Process: how the transition process to eGovernment was
managed, including considerations such as human resource development, internal capacity, ICT
training and awareness, and maintenance.
1 Sustainability of eGovernment Project: sustainability of the eGovernment project, including considerations such as assurance of ongoing sources of funding, revenue models, and partnerships with the private sector and the academic community.

1 Championship from the Top: whether an eGovernment initiative was supported by champions of reform among senior-level bureaucratic officials and political leaders.

2. Conceptualization of eGovernment

2.1 What is eGovernment?
eGovernment can be defined as the application of information and communication technology (ICT) to improve the efficiency, responsiveness, transparency, and accountability of government. Common applications of eGovernment include online delivery of government information and services, computerized licensing and registration, web-based tender notification and procurement, web-enabled complaints submission, and online public comment for draft legislation. eGovernment aims to streamline relationships between government, business, and citizens through effective use of ICT. While computerization and networking among computers is an important first step towards eGovernment, it is not an end in itself. That is, eGovernment is not just about being able to type documents using computers. Computerization can only be characterized as eGovernment where ICT automation replaces inefficient manual government processes and thereby contributes to greater transparency and greater time and cost efficiency in the provision of government services to citizens and businesses.
eGovernment can provide several levels of service to citizens and business, which vary in sophistication from the most basic to the most sophisticated:
Stage I—Information Services: where the government provides information of various kinds, such as tender notices, forms, or contact points.
Stage II—Transaction Services: where the government provides transaction facilities, such as tax filing or submission of applications for business permits.
Stage III—Integrated Value-added Services: where the government provides integrated services that involve several government agencies and go beyond individual tasks or functions, such as comprehensive services involving change of address, establishment of a business enterprise, or sending a child to school.

While a few government institutions in Bangladesh have advanced eGovernment initiatives beyond basic applications, the country as a whole is still in the first stage of eGovernment.

Some countries, such as Singapore, have advanced to the third stage, where citizens no longer have to think about which government agencies are responsible for particular tasks.

2.2 Components of eGovernment

eGovernment has four major components:

1. G2C (Government-to-Citizen) involves interaction of individual citizens with the government. Examples include payment of utility bills or downloading government forms from the Internet. Singapore’s e-Citizen Portal is one of the most highly acclaimed G2C sites. The portal features relevant information organized by topic and includes specific entry points for teenagers, working adults, senior citizens, and foreign residents. It also includes mechanisms for citizen feedback and questions.

2. G2B (Government-to-Business) involves interaction of business entities with the government. Examples include corporate tax filing or government procurement through the
Internet. A notable success story for online government procurement is Malaysia’s e-Prohelan website, which has about 3,500 government procurement centers and about 30,000 suppliers.

3. G2G (Government-to-Government) involves interaction among government officials, including interactions within a particular government office and interactions among various government offices. Examples include the use of email for internal government communication or customized software applications for tracking the progress of government projects. A popular G2G service is the e-Police System in Karnataka, India, which features an electronic database of police records.

4. G2E (Government-to-Employee) involves interaction between the government and government employees with respect to services such as salary, pension, and vacation leave. For example, a government may introduce a database-supported personnel data sheet for each government employee that serves as a record of personnel information that can be easily accessed for various applications.

2.3 Why eGovernment for Bangladesh?
eGovernment is no longer a matter of choice or debate for Bangladesh or other countries that wish to improve governance standards. The key policy considerations are not issues of technology but rather of political resolve. In Bangladesh and other countries in Asia, eGovernment has brought about important transformations in the manner in which governments operate and provide services to citizens and businesses. There will come a time in the not-so-distant future when the ‘e’ in eGovernment will lose its significance, since the primary mode of government service delivery will be eGovernment. Today the critical question is not whether or not to adopt eGovernment, but rather how eGovernment can be most efficiently introduced and expanded.

The tangible benefits that eGovernment can bring to broader governance reform and economic development initiatives in Bangladesh include:

1. Transparency: eGovernment promotes greater transparency in government activities. Having ranked poorly in Transparency International’s Global Corruption Perceptions Index, Bangladesh must undertake strong measures to enhance its international image and commitment to reduce corruption.

2. Helps increase investor confidence: Improved transparency in government decision-making and other actions raises investor confidence, which in turn contributes to increased foreign direct and domestic investment.

3. Reduces scope for corruption: Increased transparency reduces the scope for corruption. Combating corruption is a top priority for all political parties and eGovernment can provide an effective tool in reducing corruption.

4. More efficient governance: eGovernment helps to make the procedures of government internal processes more efficient, saving time and resources.

5. More efficient services to citizens: eGovernment enables the government to respond to citizen needs and demands faster and more efficiently.

6. Helps boost the private sector: eGovernment helps to boost private sector performance and efficiency by reducing the time and expenses required for businesses to interact with the government—with particular benefits to the business environment for small and medium enterprises (SMEs). In addition, the simplification of government processes and services such as online procurement helps to reduce barriers to entry for new businesses and increases competition.
1. Allows for decentralization of governance: eGovernment makes decentralization of government services and decision-making easier, since data stored in digital format can be updated and accessed from virtually any office within a networked environment.

2. Allows for greater scope for integration: Digital storage of data and software applications provides greater scope for the integration of activities of different government offices, as data can be shared easily and efficiently.

3. Allows for learning from the past: Since eGovernment allows data to be stored and retrieved easily, the record and experience of past projects can be easily used for successor projects or the replication of successful initiatives.

4. Stimulates the local ICT industry: eGovernment projects also provide valuable experience to the local ICT industry that enhances competitiveness in an international market.

5. Makes ICT relevant to the masses: eGovernment makes ICT relevant to the general population as its benefits gradually extend to citizens and communities throughout the country.

3. Overview of eGovernment in Bangladesh

3.1 Background
Bangladesh is a small country with a population of more than 135 million people. It was part of India until 1947 and then part of Pakistan until 1971, when it achieved independence. As a young nation, Bangladesh began its journey as a socialist economy that placed most major industries under government ownership and control. This trend was especially adverse for the country’s telecommunication industry, which has yet to fully recover from years of inefficient management by the Bangladesh Telegraph and Telephone Board (BTTB). As of 2002, telephone penetration (fixed and mobile) had reached only 1.32 per 100 people, far below that of neighbors India, Pakistan, and Sri Lanka. Telephone lines are heavily concentrated in urban areas. BTTB charges for telephone calls are among the highest in the world, with the costs of Internet access through dial-up services commensurably expensive. Due to some shortsighted decisions by the government, Bangladesh is still not directly connected to the Global Information Superhighway, leaving ISPs to connect to it through satellite or Very Small Aperture Terminals (VSATs).

Despite these constraints, some positive developments are taking hold. In the last few years, some private operators have begun to operate in the mobile telephony sector. The fixed telephony sector has recently been liberalized, with resulting scope for the entry of private operators. Internet service providers have emerged in scores, promoting a heavily competitive environment. Fiber optic cables have been laid through much of the country to carry Internet traffic. Steps are being taken to link Bangladesh to the Global Information Superhighway through underwater submarine cables, while BTTB charges have begun to be reduced. The establishment of a national Internet backbone to carry domestic Internet traffic is being discussed at the highest policy-making levels. BTTB now provides dial-up Internet services to all 64 districts. In addition, a new regulatory body—the Bangladesh Telecommunication Regulatory Commission (BTRC)—has been established to promote liberalization, competition, and greater efficiency in the telecommunication industry.

The potential of eGovernment is heavily dependent on the establishment of an affordable and broadly accessible ICT infrastructure to deliver online services. With the recent steps outlined
above, Bangladesh is setting the stage for the gradual proliferation of eGovernment services throughout the country.

3.2 eGovernment at the Policy Level

eGovernment in Bangladesh has only begun to be discussed at the policy level. The National ICT Policy of 2002 gives due importance to the issue of eGovernment, declaring that “the Government shall use ICT systems within the public administration to improve efficiency, reduce wastage of resources, enhance planning and raise the quality of services.” The policy further provides that “the Government shall implement ICT systems to provide nation-wide 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.” To realize the goals set forth by the ICT Policy, an ICT Task Force has been formed, with the Prime Minister as Chairperson and the Secretary of Ministry of Planning as Member-Secretary. In 2003, the Ministry of Planning launched a “Support to ICT Task Force (SICT)” program, with the mandate of providing administrative and secretarial support to the ICT Task Force in realizing various ICT projects, particularly eGovernment. The primary objective of the SICT program is “to ensure access to information by every citizen to facilitate empowerment of people and enhanced democratic values and norms for sustainable economic development by using the infrastructure for human resources development, e-governance, public utility services and all sorts of on-line ICT-enabled services.” The objectives of the SICT program include:

1. Video-conferencing: Establish an alternate communication network, which will provide optimal reliability and security of communication and enhance the speed and efficiency of decision-making and follow-up actions.
2. Police: Facilitate improved communication between citizens and police and empower police departments to better monitor and supervise police functions.
3. Digital Divisional Town: Provide electronic delivery of major citizen services, empower local officials, introduce electronic services, and build cyber-kiosks to enhance citizen access to government services.
5. eGovernment Initiatives: improve the efficiency, effectiveness, transparency, and accountability of government through ICT applications.

The Ministry of Science and Information and Communications Technology (MSICT) is also working to advance the computerization and internal networking of different government offices, particularly at the Ministry and Division levels.

3.3 Status of eGovernment Initiatives

While computers in most government offices tend to be used primarily as typewriters, some government offices have begun to apply ICT to achieve more efficient governance. For example, the Finance Division of the Ministry of Finance has developed customized software for budget planning, sensitivity and impact analysis, financial projections, and preparation of various reports. In addition, the Finance Division has created software to facilitate interface between the development and revenue budgets. The Bangladesh Bureau of Educational Information and Statistics (BANBEIS), the statistical wing of the Ministry of Education, has created a geographic information system (GIS) map-based software that provides information on density of academic institutions in particular regions, individual institution-level data, and other useful educational statistics. The website of the Planning Commission has a useful searchable database
of all Annual Development Programme (ADP) projects undertaken in the last three years. The Commission has also established an Intranet whose features include: file-sharing facilities through a Local Area Network (LAN), video conferencing, an electronic notice board, a digital library that stores policies, minutes of meetings, and other useful documents in searchable format, ADP database facilities, and application software for tracking the movement of files. Other important eGovernment projects will be discussed in the next chapter on selected case studies.

Under the SICT Programme, several ministries and government departments have undertaken major eGovernment projects. Examples include the Dhaka Passport Office under the Ministry of Home Affairs, the Ministry of Education, the General Manager North’s Office of the Ministry of Post and Telecommunication, the Department of Agricultural Marketing under the Ministry of Agriculture, the Land Record Office in Manikganj under the Ministry of Land, Ministry of Labor and Employment, and the Ministry of Expatriate Welfare and Overseas Employment. Many other government offices—including the Bangladesh Bank, the Ministry of Law, Justice and Parliamentary Affairs, and Dhaka City Corporation—are also in the process of implementing important eGovernment initiatives. By the end of 2004, the government of Bangladesh is expected to achieve significant progress in eGovernment.

Table 1 summarizes the current status of eGovernment in the 45 government ministries and agencies surveyed.

Table 1: Statistics on eGovernment Readiness

<table>
<thead>
<tr>
<th>Name of Organization</th>
<th>Customized Website; Availability of Software; Purpose</th>
<th>Availability of Content Type</th>
<th>Internet facilities; e-mail facilities;</th>
<th>Permanent Internet facilities; e-mail facilities;</th>
</tr>
</thead>
<tbody>
<tr>
<td>President’s Office</td>
<td>No; Partnership with ICT HR User group</td>
<td>No; Staff to all level</td>
<td>Yes; Staff to all level</td>
<td>Yes; Staff to all level</td>
</tr>
<tr>
<td>Prime Minister’s Office</td>
<td>Yes; Scheduling/ Officers and Staff</td>
<td>Yes; Dynamic</td>
<td>Yes; Class I</td>
<td>Yes; Class I</td>
</tr>
<tr>
<td>Cabinet Division</td>
<td>Yes; Database of meetings between 1972-2003</td>
<td>No</td>
<td>Yes; Staff to all level</td>
<td>Yes; Staff to all level</td>
</tr>
<tr>
<td>Ministry of Finance</td>
<td>Yes; Budget System</td>
<td>Yes</td>
<td>Yes; Some</td>
<td>Yes; Some</td>
</tr>
<tr>
<td>Ministry of Foreign Affairs</td>
<td>Yes; Interactive</td>
<td>Yes; All Class I</td>
<td>No; All Class I</td>
<td>No</td>
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<td>Ministry of Planning</td>
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4. Lessons Learned from Select Case-Studies
This section presents the findings of select eGovernment case studies, which are grouped in three different categories:

Category 1: Success Stories—projects that have met desired goals
Category 2: Semi-Success Stories—projects that have achieved mixed results in meeting their desired goals
Category 3: Unsuccessful Stories—projects that have failed to meet desired goals

4.1 Success Stories
In this section, four case studies of eGovernment initiatives undertaken by four government agencies are discussed: the Ministry of Religious Affairs, the Department of Roads and Highways under the Ministry of Communication, Rajshahi City Corporation, and Bangladesh Bank.

4.1.1 Ministry of Religious Affairs: Online Hajj Information Management
Brief Description
Tens of thousands of Bangladeshis travel to Saudi Arabia each year to perform Hajj. One of the primary mandates of the Ministry of Religious Affairs (MORA) is to provide various support services to these pilgrims. Through an innovative eGovernment initiative, the Ministry launched a website in 2002 to provide some information-based services to pilgrims, their relatives and friends, agents, and related government officials. The project has been initiated and funded internally by the Ministry. Since its launch in 2002, the website has been undergoing revisions and updates.

The interactive website can be used for the following purposes:
1. If a user selects district and thana, the website lists all registered pilgrims for the upcoming Hajj from a particular thana, together with each individual’s Pilgrim Pass (PP) number,1 photograph, and other personal details.
1. If a user inputs a specific PP number, the website provides the most recent status of the pilgrim with the particular PP number.
1. The website can be used to send and receive messages from individual pilgrims. This important feature allows easy and reliable communication between pilgrims and those interested in their pilgrimage.
1. Access to policies and regulations on issues such as health instructions, baggage rules, and the 2004 Hajj policy.
1. Access to an alphabetical list of authorized agents and their contact information. This list is important for verifying the validity of particular agents
1. Access to various Hajj-related forms that can be downloaded, together with guidelines for completing the forms.
1. Access to frequently updated news, including death bulletins, flight delays, lost and found, and weather.

Why Is It a Success Story?
The website of the Ministry of Religious Affairs has brought a new dimension to the efficient provision of government service to citizens. It serves as a model for citizen-focused government services in Bangladesh. The factors that led to its selection as a prime success story include:
1. Enhanced citizen service: Users can instantly determine the status of pilgrims, their flight information, and their well-being during the journey, and can also communicate with pilgrims by
posting messages to the website. Users can also access useful information such as weather updates, maps, and relevant rules and regulations.

1 Coverage of service around the world: With the introduction of the website, government services are accessible to users from any place that an Internet connection is available. The website has fundamentally transformed traditional citizen services that required face-to-face interaction with government officials and staff.

1 Internal government efficiency: Government officials can now easily generate reports and relevant statistics about pilgrims in a matter of seconds using the database of pilgrims. Previously it would take days to determine the simple statistical information necessary for governmental policy and strategic decisions.

1 Transparency: The website has also increased transparency of the Hajj Office under the Ministry of Religious Affairs by making information available to the public that was previously kept in closed files.

1 Reduced corruption and exploitation of the public: Citizens no longer have to visit a government office to access information on the flight schedules, well being, or other particulars of individual pilgrims. Previously citizens would have to wait long hours to get simple information, for which they would sometimes be requested to pay bribes. Where information was not available, corrupt Hajj agents would take advantage of the opportunity to exploit people. The list of agents available on the website also helps users to verify whether or not a particular agent is authorized or not, and to obtain contact information for individual agents.

1 Public-private-academia partnership model: The website is an excellent example of a tripartite partnership model in which the government, the private sector, and academia join hands in building an effective business model.

1 Financially sustainable model: The website is also a financially sustainable model, since the operational costs of the website are being collected through a small fee from individual pilgrims.

1 Popularizing ICT among common people: The website is making ICT popular among common people and, by so doing, contributing to the development of a “knowledge-society.”

Lessons Learned

The Hajj website is one of the most successful eGovernment models in the country, from which many important lessons can be learned. They include:

1 Financially sustainable model: The website had a startup cost of about Taka 20 million, which was borne by the Ministry of Religious Affairs from its own resources. The operational expenses of maintaining the website are now covered through a small “computer fee” collected from individual pilgrims. As a result, it is not a financially draining project, as most eGovernment projects in Bangladesh initially tend to be.

1 Partnership-based Model: The tripartite business model involving the Government, the private sector, and academia has proved very effective. The Government outsourced the development and maintenance of the website for two years to a private firm named Hatil IT, which in turn engaged the Institute of ICT (IICT) of the Bangladesh University of Engineering Technology (BUET) to develop the website and to manage the various technical aspects. Hatil IT is now responsible for updating and maintaining the website.

1 Importance of championship from the top: This project exemplifies the importance of championship and leadership from the highest levels of government. The Hajj website was
initiated by Mosharref Hossain Shahjahan, the State Minister of Religious Affairs, whose
determined interest and commitment served as primary impetus for making the website a reality.

1 Overcoming internal resistance through training: Training programs have played a crucial
role in helping MORA and Hajj Office officials and staff to overcome any fear that their jobs or
authority were threatened as a result of the eGovernment initiative. For eGovernment projects to
be successful, timely training programs are vital to ensure a sense of ownership and buy-in
among officials and staff.

1 Importance of Adequate and Timely Funding: The success of the website was further
attributable to the availability of timely and adequate funding for the design and implementation
of the project. This underlines the importance of careful financial planning to ensure that a
project does not face difficulties during the development and implementation phases.

Recommendations for Further Enhancement
The continued refinement of the Hajj website should ideally be guided by the following
considerations:

1 Control over data needs to be with the government to avoid security breach: It is vital
that MORA maintain complete control over all data regarding Hajis. While it may not be
desirable for the Ministry to retain exclusive authority over every aspect of updating and
maintaining the website, any outsource model (i.e. where a third party handles and disseminates
data) will require close supervision and comprehensive supervisory procedures. There are
several ways in which this can be ensured: (i) maintain a backup database server in MOFA for
security and monitoring purposes; (ii) monitor data handling by third party vendors on a regular
basis during the months of Hajj-related activity; and (iii) maintain full control and ownership over
all data so that vendors can be changed if needed.

1 Increase the use of Hajj Management MIS by government officials: Subject to
reasonable confidentially safeguards, the data on Hajis can be used to generate various reports
and statistics that will inform future policies for Hajj management. Software for producing such
reports should be developed. Ministry officials should be well trained to use the software to
generate reports internally, as needed, and not rely solely on vendors to do it for them.

1 Create a Bangla version of the website: One of the most widely cited shortcomings of
Hajj website is that it is completely in English, whereas the vast majority of potential users
cannot read English. Steps should be taken immediately to create a Bangla version of the
website, to expand access to a wider section of the population.

1 Create a more user-friendly and searchable, database-driven agent list: The list of
agents provided in the website can be made more user-friendly through the introduction of a
searchable, database-driven list. Such facility would also make it easier for the administrators of
the website to update information about the agents.

1 Provide printable versions of all application forms: The website should include printable
versions of all relevant forms that the Hajj Office provides.

4.1.2 Department of Roads and Highways: MIS for Project Management and Transparency
Brief Description
The Department of Roads and Highways (RHD) under the Ministry of Communication regulates
a large portion of expenditure on the physical infrastructure of Bangladesh. An efficient and
reliable information system is crucial for the implementation, monitoring and policy-making
functions of the Department. Unlike the previously discussed Hajj website project of the Ministry of Religious Affairs, RHD’s eGovernment initiative in the Department of Roads and Highways did not initiate internally; rather, it was developed as one of several focal areas under a project for the institutional development of RHD, as a condition of funding from the World Bank. This background has important implications for lessons learned from the project. The eGovernment initiative of RHD involved the launch of a website that provides a variety of information, data and notices to users. Website users include the private sector, related government offices, ordinary citizens, and donor agencies. The website features the following services:

1. **Personalized access**: The website provides different levels of access for guests, suppliers, internal government users, donors, and monitoring agencies such as the Implementation, Monitoring and Evaluation Division (IMED). Users can obtain a personal ID and password after completing a short course on use of the website.

2. **Information about the Department of Roads and Highways**: The website provides details on the responsibilities of various RHD officials, together with contact information. It includes complete service book details of all 13,000 RHD employees, the location and reporting of all 20,000 posts, and detailed data on the construction, condition, and traffic use of the 20,000 kilometers of roads and the 10,000 bridge structures under RHD. It also provides access to on-line documents, including design and test standards, maps, and the complete set of management manuals, with associated job descriptions and operational procedures.

3. **Information about zonal operations of the Department**: The website provides details on RHD zonal operations in Dhaka, Chittagong, Comilla, Rajshahi, Rangpur, Khulna, and Barisal, together with the names of officials in charge and their contact information.

4. **Contractor database**: The website has a database of contractors registered with the system, which can be searched on the basis of different options, including names, registration details, experience records, equipment details, enlistment information, financial capacity, personnel type, workshop facilities, and RHD license information. The website responds to user inquiries by providing the names and contact information of organizations that match given criteria.

5. **Schedule of rates database**: The website provides the rates of different kinds infrastructure building components from past projects. Inquiries can be made for general site facilities, earthworks, pavement works, foundation works, structures, and incidentals. The website responds with the unit and total price of the selected item.

6. **Tender database**: The website lists tenders issued by RHD and its subsidiaries across the country. Inquiries can be made on the basis of zones, date of submission, range of estimated cost, type of tender (general works, road works, bridge works, road-bridge combined, lease, toll-collection, or repair and maintenance), and type of expenditure (revenue or development). The website responds with a list of tender schedules that match the selected criteria.

7. **Project Monitoring System**: RHD consumes a significant percentage of the annual development budget of the Government and its road and bridge network is the largest single national asset in Bangladesh. To monitor the progress and expenditure on these projects, a Project Monitoring System that provides detailed information about all projects of RHD has been developed. Through the system, field offices can enter progress and financial information
at contract level, and this is aggregated up to a central system that is used for monitoring, planning, and budgeting.

Why Is It a Success Story?
The eGovernment project of the Department of Roads and Highways represents a significant milestone for the transition to eGovernment in Bangladesh. Factors that account for its characterization as a success story include:

1. Internal government efficiency: The databases created have made it possible to obtain information that was either unavailable or extremely time-consuming to obtain through manual search prior to the creation of the website. For instance, finding out the exact status of physical infrastructure within a specified zone now takes a few minutes, whereas previously it could take weeks to months, while the reliability of the information was always in question.

2. Facilitation of quicker decision-making: The ready availability of data on road and bridge networks with annual survey data makes possible advanced calculations and preparation of the Annual Maintenance Plan. The system also prepares project progress reports for all ADP projects and sub-projects of RHD.

3. Improved business and citizen services: The website provides a large repository of information about physical infrastructure projects and progress in the country, with a variety of references, maps, files, and records for professional and public use.

4. Increased transparency: The website and databases created under the eGovernment project have been instrumental in promoting greater transparency in RHD operations. Tender notices can be easily accessed through the website, while progress of the Department in various sectors can be tracked by ordinary citizens and databases of contractors and their experiences can be easily verified.

5. Reduced scope for corruption: The Department of Roads and Highways is allocated a significant portion of the Annual Development Budget, creating opportunities for corruption to flourish at all levels. The databases of projects, contractors and tenders have made considerable information available to the public, monitoring agencies, and the international donor community, as well as to government officials. This has reduced scope for manipulation. Where political will exists, the databases and the website can be used as effective tools for fighting corruption.

Lessons Learned
The RDH project offers important lessons for future, large-scale government MIS projects of a similar kind. They include:

1. Overcoming internal resistance to change: Since the project was not initiated internally, there has been greater internal resistance to its implementation than in the case of projects that were initiated by senior-level bureaucrats and politicians. Enthusiasm to adopt the new ICT systems has been low due to lack of incentives and insufficient pressure from senior bureaucratic quarters. Training and awareness programs have been somewhat effective, but are not adequate for long-term sustainability.

2. Developing ownership and top-level leadership: eGovernment initiatives can only be internalized within the Department of Roads and Highways through internal “ownership” and strong leadership from senior-level RHD officials. Developing ownership of the project within government is destined to be a challenge, as externally imposed projects often take time to be internalized. This is especially the case given the fact that many within the Department are not particularly supportive of the transparency achieved through eGovernment.
Challenge of sustainability: Considering the above factors, long-term sustainability of the project is likely to pose a significant challenge following the scheduled completion of Consolidation of Institutional Development Component (CIDC3) in March 2005. Under the existing arrangement, the Government of Bangladesh pays the salaries of local GOB project staff in development posts, which amounts to approximately 5 percent to 10 percent of the project cost. After IDC3 completes its role, it will be a challenge to find appropriate ICT-trained human resources to maintain and update the systems. One solution may be to outsource to third-party vendors, but this will require that the government allocate an ICT budget.

Importance of adequate and timely funding: One of the major reasons for the degree of progress made in such a short time is the availability of adequate and timely funding. Many government projects stop midway, due to lack of funds or unexpected delays in securing continued funding. This project has not suffered from those adverse circumstances.

Recommendations for Further Enhancement

The continued refinement of the RHD website may take the following considerations into account:

Create championship from the top: If this project is to be sustained, the biggest task for the donor agencies involved will be to secure championship and support from top-level bureaucracy. Necessary funds for continued partial financing of the project may not be a big hurdle if senior bureaucrats are willing to take responsibility and provide leadership to the project.

External pressure: Another potentially effective method to ensure sustainability of the project is to link its continued operation with future grants and loans from the World Bank and other donor agencies. This would provide good incentive for the GOB to take steps to ensure its sustainability. It is likely that potential donors would insist that funding be tied to refinements of the website as opposed to continued operations.

Create popular demand: Creation of popular demand from citizens, businessmen, and the media for the services provided by the RHD website would bring pressure to bear for the continuation of services. To this end, strong marketing campaigns should be launched to make prospective users aware of the online services and the other benefits. Marketing is an important component of any service-oriented eGovernment project which strategists often ignore.

Give financial incentive to officials and staff: There should be some system of financial or other incentives to create buy-in among RHD officials and staff. If they believe that the administration, use, and maintenance of the MIS and the website is an added responsibility for which they receive no additional benefits, they will be reluctant to use the ICT systems.

Incorporate in revenue budget: The project should be incorporated into the revenue budget as soon as IDC3 funding stops to ensure sustainability. The direct and indirect cost and time savings that result from the MIS systems within RHD should be on a scale sufficient to justify spending from the revenue budget.

Create revenue-earning model for sustainability: Plans should be developed to find sources of added revenue from the services being rendered through the RHD website. For example, registration on the website may be tied to a nominal payment. Initially, people may not be willing to pay, but as demand and popularity grow, a revenue-model may be generated. This is an important lesson from successful business models of information portals around the world. RHD may generate revenue by selling different kinds of information, statistics and maps available through the website (payments may have to be made physically until online payment is
legalized in Bangladesh). Another important issue is that, under the current legal system, all government revenues go the Ministry of Finance. For RHD to benefit from its own revenues from the sale of information, either a legal change must be effected that would allow RHD to retain its revenues, or the Ministry of Finance will have to develop an efficient way of channeling the revenues back to RHD.

1 Re-training and re-allocation of government employees: To make best use of the MIS and website, government officials and staff of RHD will need continuous training. They may also require new sets of skills, while some skills may be outdated. Training programs should be planned and operated on a continuous basis, since people in government positions are always changing. Reassignment of certain government employees may also be necessary to ensure the optimal development and use of ICT systems.

4.1.3 Rajshahi City Corporation: Electronic Birth Registration System

Brief Description
Bangladesh is one of the few countries in Asia that does not have a standardized national system of identification for every citizen, or an effective system for birth registration. As a result, crucial statistics needed for policy-making cannot be easily determined or maintained. The Rajshahi City Corporation (RCC) has taken a landmark step in developing an Electronic Birth Registration System (EBRS) that provides citizens with a unique identity card that can be used for various services, including education and health care. Since the card helps in securing certain social services and benefits, citizens are now encouraged to register births, which was previously regarded by many people as a pointless inconvenience. EBRS has been initiated by the Rajshahi City Corporation and the Local Division of the Ministry of Local Government, and implemented with technical and financial support from UNICEF.

Why Is It a Success Story?

Rajshahi City Corporation has played a pioneering role in the introduction of eGovernment applications in the context of local governance. For a country in which economic activities are heavily concentrated in a handful of major cities, the EBRS is a major achievement. Some of the factors considered in characterizing the project as a major success story include:

1 Improved citizen services: Previously, people would take have to wait in a long queue and then complete several lengthy procedures to register the birth of a child. Through the EBRS, it takes a few minutes to complete the registration process. Citizens register birth information at the local ward office, and the certificate is generated from the Health Department of the City Corporation. The system also generates an immunization schedule for every child. The electronic ID is used for immunization purposes and also for securing admission to government primary schools in Rajshahi.

1 Internal efficiency of RCC: Under the previous system of birth registration, RCC preserved large volumes of registration data on a manual basis. As a result, it took a lot of time to complete simple inquiries such as the number of female births in the past five years. In addition, the manual system could not fully guarantee that duplication of entries would not occur. The EBRS allows easy entry and retrieval of data in seconds. Moreover, since data is now stored in databases and CD-ROMs it is not prone to damage of the kind to which paper-based data storage is vulnerable.

1 Helps keep track of each child: The EBRS helps to keep track of each child registered under the system, starting from immunization requirements to school enrollment status. It helps
the RCC to monitor the needs of a community and empowers the Corporation to better perform its duties.

1. Reduces scope for corruption: EBRS provides a unique identity for every citizen, which is crucial for the security of records of this kind. At present, even the Passport Office has no way of uniquely identifying identity. As a result, anyone can theoretically apply for and receive as many passports as they wish. Systems such as EBRS can provide a foundation for a secure national-level identification system.

1. Helps in national-level decision-making: Since data related to birth were previously maintained in haphazard manual systems, the statistics gathered were often erroneous and unreliable. The EBRS system has largely eliminated human errors and is able to provide the reliable data needed for national-level decision-making and monitoring of progress.

1. Transparency: The EBRS system increased the transparency of RCC. Users can easily determine the status of all registered children with respect to immunization, schooling, and other social service that the government is responsible to provide for every child. The system can generate reports on the number of children who have not received necessary immunizations.

Lessons Learned

1. Relatively quick demand creation: Following the implementation of EBRS, public demand for such a computerized system was immediately apparent. This is crucial for the government in justifying that a program should be continued and refined.

1. Minimal internal resistance: There was minimal internal resistance at RCC during the implementation of the EBRS. Timely training and awareness programs were crucial in preventing any resistance. In addition, championship from top-level officials helped to ensure a smooth transition to the new electronic system. As a result, RCC officials and staff take pride in the new system.

1. Sustainability: UNICEF will not continue to fund this program on an ongoing basis. Accordingly, the government will have to assume responsibility for maintenance costs through the revenue budget. With most of the necessary training complete, the system is likely to continue on a sustainable basis since there is clear public demand for it and RCC officials are very much in favor of the new electronic system. In addition, it is not an expensive program to continue, given the benefits that it provides to citizens and the efficiency that it has brought to RCC.

1. Decentralization of governance: An electronic system that operates in a networked environment can facilitate the decentralization of governance to the level of ward commissioners. Since electronic data can be easily exchanges among local offices, the ward commissioners can share the workload and provide various information-based services that were traditionally available only from the City Corporation.

1. Linkage and integration: Electronic data also facilitates easy integration and linkage among different offices. For instance, when the Health Department immunizes a child and enters the information into EBRS, all connected offices have instant access to the immunization record. This has made integration of related activities much more efficient than before.

1. Involvement of civil society: Civil society was involved from the very inception of the project through meetings with public representatives and members of academia. This helped in popularizing the new system among local citizens.

Recommendations for Further Enhancement

Future refinements for the EBRS system may be guided by the following considerations:
1. Self-financed sustainability: RCC may consider charging a nominal fee to citizens to cover the future maintenance costs of the electronic system. This would create a self-sustaining model independent of central government’s budget allocation and other approval procedures.

Create website to disseminate information: RCC should create a website to deliver information-based services through the Internet. With the EBRS, RCC is able to better coordinate its efforts with the Department of Health and primary schools. Different information—such as rules and regulations regarding the use of ID generated with EBRS—on immunization and admission to schools should be posted on the website. Citizens will be able to access this information from cyber cafes around the city.

Extend EBRS to ward-commissioner level: EBRS should be extended to the ward-commissioner level so that ward commissioner’s offices are empowered to assume additional responsibilities that currently fall to the City Corporation. eGovernment can help to facilitate decentralization of governance functions to increasingly local levels. RCC can achieve a further milestone by decentralizing operations to the ward commissioner-level through EBRS.

4.1.4 Bangladesh Bank: Automation of Internal Processes

Brief Description

Bangladesh Bank began to computerize its functions ahead of most other government institutions. Today it is one of the most fully computerized public institutions in the country. The following processes have been automated: export receipts; import payments; invisible receipts; invisible payments; scheduled bank advances; scheduled bank deposits; scheduled bank bills; scheduled bank debits; co-operative bank advances; cooperative bank assets/liabilities; summary statements; central accounts of Bangladesh; loans and grants; exchange rates; monetary survey; broad money survey; salary bill of employees of Bangladesh Bank; Bangladesh Bank employees’ provident fund; press communiqué liquidity position; assets/liabilities; export form matching; wage earners’ remittance; secret test key development of National Credit and Commerce Bank Ltd.; secret test key development of National Bank Ltd.; and secret test key development of EXIM Bank Ltd. Bangladesh Bank has also established a dynamic, information-rich website that contains information about important macro-economic indexes and other relevant financial information. The website is updated regularly.

Why is it a Success Story?
Bangladesh Bank can be termed as a major eGovernment success story for the following reasons:

1. **Internal efficiency**: Computerization has substantially improved the internal efficiency of Bangladesh Bank, with the work of the Bank made easier through customized software. Applications that were implemented manually used to take three to four times longer than the computer-based systems that replace them. A variety of reports are now efficiently generated through different customized software. The reports are used by international agencies to evaluate the financial status of the nation and to recommend fiscal and monetary measures, by different ministries for policy-making purposes, and also by Bangladesh Bank for internal management purposes.

2. **Improved citizen services**: Citizens can now access various services and information through the Bangladesh Bank website, including current exchange rates, interest rates, and inflation rates. This has greatly reduced the need for telephone inquiries and personal visits to the Bank.

3. **Relatively little internal resistance during implementation**: The vast computerization initiative did not encounter a significant degree of internal resistance, despite the fact that the functions and responsibilities of many officers and staff were greatly affected.

4. **Sustainability ensured**: The sustainability of ICT projects at Bangladesh Bank appears to be ensured since the Government of Bangladesh plans to incorporate the projects into the revenue budget at the conclusion of World Bank funding in 2008.

**Lessons Learned**

1. **Continuous training helps to reduce the chance of internal resistance**: The Bangladesh Bank Training Academy has been effectively used to provide ongoing ICT training to officers and staff of the Bank, helping to facilitate the adoption of ICT and reducing the chance of internal resistance.

2. **Leadership from the top**: The initiative and leadership of the Governor and Deputy Governor of Bangladesh Bank have contributed to the smooth and efficient implementation of eGovernment initiatives in Bangladesh Bank.

3. **Tangible and immediate benefits create faster buy-in**: The benefits of computerization at Bangladesh Bank have been more immediately tangible than in most other government offices engaged in automation efforts. The nature of the work of the Bank is such that ICT applications are absolutely essential.

4. **Adequate number of ICT human resource**: The relatively smooth implementation of eGovernment can also be attributed to a large human resource base with specialty experience and technical capacity in ICT applications. This human resource base presently numbers more than 110 officers.

4.2 Semi-Success Stories

This section presents case studies that focus on eGovernment initiatives in three government offices: the Ministry of Foreign Affairs, the Ministry of Science and Information and Communications Technology, and the Parliament Secretariat.

4.2.1 Ministry of Foreign Affairs: Interactive Website

**Brief Description**

The Ministry of Foreign Affairs (MOFA) is one of the most important hubs for communication and negotiation with foreign countries. MOFA was one of the first Ministries to begin the process of computerization, having started in 1996 under the leadership of former Secretary
Farooq Sobhan. Although it has not initiated any full-fledged eGovernment project per se, MOFA has launched an interactive ministry website. The most important features of the website include: a searchable database of all Bangladeshi missions abroad, with contact details, and a searchable database of all foreign embassies and missions resident in Bangladesh, together with contact information. The website also provides links to the websites of foreign missions abroad.

Why Is It a Semi-Success Story?
While MOFA has only begun to create an environment for eGovernment, the following factors weigh in characterizing it work to date as a semi-success story:

1. Officer's access to personal computers (PCs): The Ministry, which employs about 90 officers and 110 staff, had 50 PCs as of December 2003. All Class I and Class II officers have access to PCs, although most do not have PCs on their desks.

2. Officer's Access to Internet and e-Mail Facilities: Most of the PCs in the Ministry are connected to the Internet. The PCs are also connected in a LAN environment. All Class I officers have access to Internet and e-mail.

3. Citizen-service oriented interactive website: MOFA is ahead of most other ministries in creating an interactive website. The website has a searchable database of contact information of Bangladeshi missions abroad and of foreign embassies and consulates in Bangladesh. Recently, the MOFA website provided results of expatriate students who appeared in Board Examinations, thus giving them access to the results from whichever country they were in.

Despite this progress, MOFA still has a long way to go in achieving a more efficient governance system through the use of ICT, as is suggested from the following points:

1. Internal processes not automated: MOFA has been unable to use its hardware resources and connectivity infrastructure to effectively automate its internal processes. Moreover, it has not developed any customized software to facilitate day-to-day business.

2. E-mail and internet not yet used optimally: Internet use has yet to be fully internalized at MOFA. Few MOFA officials use the Internet as a tool for gaining knowledge of other countries’ policies and strategies. In addition, email is not used as much as it should be to facilitate everyday communication with Bangladeshi missions abroad.

Lessons Learned

1. Importance of top-level championship: Championship from the top-level played a crucial role in initiating the eGovernment process at MOFA. In a traditionally top-down bureaucratic environment of the kind that prevails in Bangladesh, the importance of such leadership cannot be over-emphasized.

2. Inadequate revenue budget expenditure for ICT: MOFA does not receive a significant share of the annual Development Budget, since it is not directly involved in ground level, development-related activities. In Bangladesh, many eGovernment projects are funded through the Development Budget. As a result, MOFA faces financial constraints in eGovernment initiatives that many other Ministries do not.

3. Inadequate training and awareness can create rear and resistance: MOFA officials should, in principle, be more ICT-savvy than their counterparts in most other Ministries, given the fact that MOFA is in constant communication with the rest of the world. In fact, MOFA officials are no better oriented to IT than counterparts in other government agencies. One of the reasons for this may be that MOFA does not have a system for regular ICT training and
awareness programs for officials. Without human resource development support of this kind, it is difficult to create buy-in for eGovernment.

1. Human resource deficiencies prevent websites and databases from being updated regularly: MOFA appears not to have a good strategy for updating its websites and its databases. This reflects the lack of an adequate IT human resource base to perform the specific tasks of updating information systems, which results in inefficient and unreliable updating mechanisms.

Recommendations for Further Enhancement

Future efforts to refine MOFA’s eGovernment systems should take the following considerations into account:

1. Automate correspondence and communication with missions abroad: MOFA should develop customized software to facilitate and keep track of correspondence and communications with missions abroad. Internal notice boards, government circulars, and minutes of meetings may be posted and viewed effectively through the website, with access limited to authorized government officials and diplomats.

1. Website should constantly be updated: The mechanism for updating the MOFA website should be made permanent, reliable, and timely. Many of the links on the website still do not have any content. Some of the addresses and contact information given in the website have become outdated. The website does not include a feature that indicates when it was last updated, which would increase users’ confidence in the information presented in the website. Updating websites is not a very technical exercise and can be undertaken by government officials themselves if they are trained. Progress is constrained by the popular misconception that websites can only be updated or revised by individuals with a strong technical background.

1. Online forms and regulations: Forms of various kinds relating to travel to and from Bangladesh should be made available on the website. Related regulations should also be posted online in both English and Bangla.

1. Searchable database of relevant foreign policies and treaties: The website should be updated to include a searchable database of relevant foreign policies and treaties. Rather than listing them sequentially in a large list, it would be more user-friendly if the website provided a facility to conduct database searches on the basis of keywords, dates, names of countries, and other relevant terms.

1. Missions abroad should also have websites: All Bangladeshi missions abroad should have their own websites for which individual embassies would be responsible. The websites should cater to specific target groups in the respective countries, including potential investors, visitors, or those conducting research on Bangladesh. Such country specific websites would make a positive contribution to increasing transparency and enhancing the image of Bangladesh abroad.

1. Coordinate with Ministry of Commerce: The websites and other MIS systems should also be used to coordinate activities and missions with the Ministry of Commerce. Promotional activities of the Ministry of Commerce may be conducted through websites of individual Bangladeshi missions in foreign countries.

1. Extend email and Internet facilities to Class II officers: Class II officers should be provided email and Internet facilities. It is often the case that mid-level officials are more enthusiastic about and competently trained in ICT but do not have access to computers, since most desktop computers are assigned to more senior-level officials.
4.2.2 Ministry of Science and ICT: Policy Hub for eGovernment

Brief Description
In March 2002 the Ministry of Science and Technology was renamed the Ministry of Science and Information and Communications Technology (MOSICT) and tasked with the additional mandate of providing vision, direction, and facilitation to ICT-related activities in Bangladesh. So far, MOSICT has been involved in providing physical and ICT infrastructure facilities for the software industry, drafting the ICT Act, providing ICT training to government officials and citizens, and assisting in the disbursement of equity funds to the ICT sector. In addition, one of its primary objectives is to serve as a hub for eGovernment initiatives in different government offices. MOSICT has had a mixed experience in this function to date. A project is expected to start by the middle of 2004 through which MOSICT will distribute 50 PCs to different Ministries and divisions, and set up internal networks (LANs).

Why Is It a Semi-Success Story?
The positive efforts of MOSICT in facilitating eGovernment in Bangladesh have had four dimensions: (i) assisting some government offices to computerize and establish networks; (ii) helping different government offices with ICT procurement and needs assessments; and (iii) providing ICT training to government officials; and (iv) providing connectivity to ISPs and cyber-cafes, through its subsidiary the Bangladesh Computer Council. While each of these functions is important, as the ministry responsible for the Government’s ICT-related activities, MOSICT’s scope of work should be much broader than it is at present. The factors that weighed in the characterization of MOSICT as a semi-success story include:

1. Too much emphasis on computerization: MOSICT places disproportionate emphasis on the purchase and distribution of computers, with insufficient attention to developing plans for the use of computers to make governance more effective and efficient. It should assume a more strategic role than that of distributing computers within the government. Thus far MOSICT has not provided significant vision or undertaken comprehensive planning for broad scale eGovernment initiatives.

2. Not well integrated with the Ministry of Post and Telecommunications: The heart of ICT is communication facilities. One cannot plan for the effective use of ICT without having a complementary, cost-effective plan for telecommunication set-up. MOSICT is not well integrated with the policies and priorities of the Ministry of Post and Telecommunication, which places the former at a further disadvantage in facilitating a comprehensive ICT planning for the country.

3. Unplanned training: MOSICT, through the Bangladesh Computer Council, has been involved in ICT training of government officials for some time. The training has been largely unplanned and conducted on an ad hoc basis to date. In addition, training programs have focused primarily on teaching government officials word-processing skills, with inadequate attention to providing officials an overall sense of how ICT relates to governance.

4. No achievement in facilitating ICT-related research and development: MOSICT spends approximately Taka 120 million on research and development. So far, this allocation has not been used effectively to fund ICT-related research and development. This largely reflects MOSICT’s lack of appreciation of the research and development requirements for developing ICT in Bangladesh. Local ICT companies are not financially strong enough to fund research and development on their own and this is an area where the government could play had a primary role. One major bottleneck for eGovernment is lack of standardization of Bangla language for
ICT and also the lack of Bangla-based application software and web content. Without investment in research and development, integration of Bangla with ICTs will not happen soon. To date MOSICT seems oblivious to this urgent issue.

Lessons Learned
There are some important lessons to be learned from analyzing why MOSICT has not been able to fulfill its potential in spearheading eGovernment in Bangladesh. They include:

1. MOSICT is not empowered: Although MOSICT has been given the mandate to act as the ICT hub of the Government, it has not been sufficiently empowered to fulfill its responsibilities. MOSICT is one of the “poorest” Ministries in the whole government, with modest fund allocations. For example, it cannot take actions without first securing project approvals from the Planning Commission.

1. MOSICT is not well integrated with other ministries: ICT is not an independent issue for individual ministries; rather, it is very much a crosscutting issue of relevance to all facets of government. MOSICT is in large part bound by the status of the predecessor Ministry of Science and Technology, which had more or less independent functions and responsibilities. As a result, MOSICT is not very well integrated with other government agencies, and thus is at a disadvantage in understanding and responding to the demands, needs, and priorities of different offices.

1. Need for a national-level eGovernment Focal Point: A national-level focal point or central planning unit for eGovernment is vital for a nation. With demand for such a leadership role increasing in Bangladesh, MOSICT must rise to the occasion in filling that gap. Without such leadership, a holistic transition to eGovernment at the national level will prove difficult.

Recommendations for Further Enhancement
Future efforts to strengthen the leadership role of MOSICT should be guided by the following considerations:

1. Empower MOSICT: The Ministry and its subsidiaries such as the Bangladesh Computer Council should be empowered to work as focal points for ICT implementation in Bangladesh. MOSICT should be allocated sufficient funds to recruit necessary ICT personnel and to meet the salary expectations that qualified specialists command. It should also be given adequate authority to exercise some level of influence and directive power, if necessary, over other government institutions in implementing and adopting ICT.

1. MOSICT’s officials should be technically competent: MOSICT has been given an important mandate. For MOSICT to carry out its responsibilities, at least some of its key officials should have a background in ICT. This should be made a requirement so that the Ministry is optimally staffed to take policy and strategic decisions regarding ICT.

1. Planned training for eGovernment: MOSICT should undertake a better planned training program to make government officials aware of ICT in relation to governance. Teaching basic courses on word-processing will not suffice.

1. Better integration with other ministries: MOSICT should be better integrated with other government agencies for better planning and execution of eGovernment.

1. Facilitate ICT-related research and development: MOSICT should play a major role in facilitating ICT-related research and development, especially with respect to “Bangla language processing”, including Bangla-based web content, Bangla Optical Character Recognition (OCR), and Bangla text-to-speech.
4.2.3 Parliament Secretariat: Strengthening Parliamentary Democracy through ICT

Brief Description
The Parliament of Bangladesh is the focal point for national policy-making and legislative activities. Automation of its processes can strengthen governance, while greater openness of parliamentary activities to public scrutiny can strengthen democracy. With those objectives, ICT is an important component of the UNDP-supported “Strengthening Parliamentary Democracy Project (SPDP)”. Under this project, some preliminary steps for eGovernment have been undertaken, one of the most important of which has been automation of the Parliament Library. Some of the tasks under this project are outlined below:

1. Computerization of the Legislative Information Center (LIC) or Parliament Library, together with Internet access and internal LANs connecting 29 workstations and 4 servers.
2. Automation of the library cataloguing system, with a searchable database of books and documents.
3. Computer user centers for Members of Parliament (MPs) in the Library.
4. Digitization of various bills, acts, ordinances, important speeches, and other relevant documents.
5. Computerization of various departments of the Secretariat, including the Debate Editing Section, Parliament Printing Press, Speaker’s and Deputy Speaker’s offices, Chief Whip’s office, and Finance Committee offices.
6. Establishment of a Computer Training Center with 12 workstations and one LAN-connected server with Internet facility.

Why Is It a Semi-Successful Story?
The computerization process at the Secretariat began more than five years ago. Although some progress has been made since then, most activities have been limited to building a basic ICT infrastructure through PCs and limited access to the Internet. The factors taken account of in classifying the Secretariat as a semi-successful story include:

1. No automation of internal processes: There has been little progress made in automating the various internal processes of the Secretariat. No customized software has been developed, nor has any database been created save for library cataloguing.
2. No link with other Ministries and government offices: No link has been established to share information with other government offices, such as the Prime Minister’s Office or the Bangladesh Bureau of Statistics (which is a rich source of information and statistics).
3. No significant improvement in transparency through eGovernment: The eGovernment activities at the Parliament Secretariat have had minimal impact on transparency. One of the stated objectives of the SPDP project has been “to increase public awareness about the activities of the Parliament,” yet the website does not contain any information regarding the specific activities of the Parliament.
4. Little ICT training-related activities: The Computer Training Center is not being used optimally for ICT training of Secretariat officials, staff and—most importantly—MPs.

Lessons Learned
Important lessons learned from the eGovernment experience of the Parliament Secretariat include:

...
eGovernment limited largely to computerization: The Parliament Secretariat is a typical case where eGovernment is largely limited to basic computerization. This is a problem that affects many government offices in Bangladesh, where the procurement of computer hardware is perceived as a major achievement. The importance of using PCs for purposes other than typing is not taken account of in planning for eGovernment; however, the Secretariat has indicated that it plans to embark on more holistic eGovernance initiatives later in 2004.

Bureaucratic hurdles in the way of transparency: One of the major reasons why parliamentary proceedings and other relevant information are not posted on the website is that any such information must pass through a complex bureaucratic approval procedure. There is currently no mechanism for making this information available to the public through the direct efforts of the Secretariat. As a result, citizens depend on newspapers and other media sources to learn about parliamentary activities.

Training not taken seriously enough: ICT training and awareness programs should be a top priority for any eGovernment project; however, many government offices do not take this point seriously enough. The Parliament Secretariat is no exception. The Computer Training Center at the Secretariat is underutilized as a means of changing people’s mindset concerning ICT.

Recommendations for Further Enhancement
The Parliament Secretariat is planning to launch a more comprehensive eGovernment program from 2004. It will be best to conduct a thorough needs assessment and proper process analysis before embarking on such a project. This would help to determine the priorities of the government and citizens, possible sources of internal resistance if ICT systems become operational, and other important issues. Some recommended tasks for the expanded project include:

1. Update website on Parliament-related activities: The website should be made dynamic and database-driven, with information of various kinds that may be useful to citizens, reporters, researchers, the international community, and democracy-monitoring agencies.

2. Provide information on MPs and their constituencies on the website: The website should also provide information about individual MPs and their constituencies. A GIS-based map connected to a database of MPs would be useful to present the above information in an interactive format.

3. Create efficient approval process: An efficient mechanism should be devised so that the process for securing approval for information such as Parliamentary proceedings or topics of debate, to be published in the website, does not take too much time.

4. Create electronic interface between citizens and MPs: Steps should be taken so that citizens can send emails directly to MPs. Each MP should be given an individual email address that would be publicly known.

5. Take training seriously: ICT training and awareness programs should be seriously taken up. MPs should be given regular ICT training to instill a positive mindset towards ICT and make them aware of how ICT can strengthen governance. Training programs should stress the relevance of ICT for governance rather than teaching individuals how to type.

6. Establish network link with other government offices: The Parliament Library should be connected with other relevant library and information systems such as the National Data Bank of Bangladesh Bureau of Statistics (BBS) and the ADP database of the Planning Commission.
Create a permanent ICT maintenance and updating team: It is important to establish a permanent ICT maintenance and updating team. Without such a team in place, eGovernment initiatives cannot be made sustainable.

4.3 Unsuccessful Stories
This section presents a single case study of a Voter ID Card Project undertaken by the Election Commission Secretariat.

4.3.1 Election Commission Secretariat: The Failed Voter ID Card Project

Background
In Bangladesh, an effective and completely reliable method of uniquely identifying citizens has yet to be developed. This poses a particular problem in the case of elections. The Election Commission Secretariat maintains a list of eligible voters, which is updated every five years, but under this system of voter registration citizens are not given a unique identifying number. To account for this inadequacy, a project was undertaken by the Election Commission Secretariat at the order of the Government in 1995 to generate laminated ID cards for every eligible voter in the country. The Voter ID Card Project, as it was popularly known, was completely funded by the Government of Bangladesh, with almost no foreign technical or financial assistance. The task of generating the ID cards was outsourced to a few private vendors. The work comprised the following components:

1. print the complete list of voters (provided by the Election Commission Secretariat)
2. physically locate all voters to take their individual passport-size photographs
3. generate an ID card containing the name of the voter, father’s/husband’s name, profession, age, ID number, and photograph.

Why Is It an Unsuccessful Story?
The Voter ID Card Project reached a disappointing conclusion. It was not a case of technological failure, but rather one of management and strategic failure. The reasons why the Voter ID Card project largely failed to reach its objectives include:

1. Problem with locating voters: The vendors were given the task of physically locating each individual in the voter list to take photographs. This proved particularly challenging for vendors to implement within a short period of time.
2. Problem with taking pictures of women: Social and occasionally religious prejudices led some rural women to resist having their pictures taken.
3. Problem with distribution of voter ID cards: There was also a problem with the distribution of ID cards, since many individuals changed addresses and the postal system in Bangladesh was not reliable enough to ensure safe delivery of cards in every case.
4. Poorly planned codification system: The unique numeric ID generated for each voter was based on several criteria, one of which was the present address of the voter. This created particular problems since the present addresses of people can change at any time. For a permanent ID system, it was not a good idea to base the identification on the present address of the voter.
5. Could not reach 100 percent of the population: Records indicate that the Voter ID Card project reached approximately 76 percent of the target population, while some suggest
that the actual percentage was less. Since 100 percent of the voters could not be reached within the scheduled time, the ID could not make a mandatory requirement for the elections, as originally intended. As a result, few people used their ID cards for identification at the polling station during local and national-level elections.

Project abandoned altogether: Due to the serious inadequacies of the Voter ID Card project, the project was abandoned in the sense that no follow-up project has been undertaken to date. If a similar project is undertaken in future, in response to a continued need, it is likely that it will have to start fresh, with new ID cards generated.

Lessons Learned

Important lessons to be learned from the ‘failure’ of the Voter ID Card Project include:

1. eGovernment projects cannot succeed if there is lack of adequate political will and support: From the very inception of the project, there seemed to be lack of necessary political and bureaucratic commitment to the effort. The issue of providing ID cards to uniquely identify voters is a politically sensitive one, and without the unequivocal support of all stakeholders the venture cannot succeed.

2. Poor planning: The Voter ID Card project suffered from poor planning and execution from its inception. Many of the mistakes that compromised the project could have been avoided if strategies had been carefully crafted prior to implementation.

3. Over-ambitious planning: The project was overly ambitious right from the beginning, with impractical deadlines set and unrealistic expectations raised.

4. Should have undertaken pilot projects: A nation-wide program of Tk. 187 crore should not have been undertaken right from the start. The project should have been carried out in phases, through medium-scale projects that incrementally expanded the Election Commission’s successful earlier pilot initiatives, to identify risk factors and other lessons before extending the project to the national level.

5. Should have taken cultural issues into consideration: The project did not take adequate account of cultural issues, such as the resistance of some women to having their photographs taken. Special steps such as awareness campaigns should have been taken to persuade women to sit for the photographs.

Recommendations for Further Enhancement

The following considerations should be taken account of in any future effort to produce national voter identification cards:

1. Create citizen demand for the ID Card project: It is important to recognize that a national voter ID Card project is in no way akin to an infrastructure building project. Its success requires a substantial amount of awareness raising at the local level. To reach citizens at the local level, it is vital that political leaders and civil society members are actively involved. This is not a task that can be outsourced to a group of vendors with the expectation that satisfactory results can be achieved. The importance of an electronic ID card in the free and fair election process must be made clear to the citizens beforehand. The media can play an effective role in this regard.

2. Properly planned codification system: The codification system should be carefully thought out to ensure that it serves as a permanent ID number and is properly representative of the cardholder.

3. Incorporate cultural considerations in the plan: Cultural and social barriers may be encountered in implementing a voter ID card project. Before execution of the project begins,
these potential barriers should be clearly identified and documented, and plans should be made to overcome those barriers in a systematic way, with the active engagement and support of local leaders and representatives.

1. Be aware of resistance from local political groups: It is likely that local political strongmen may be opposed to voter ID cards on the basis that the cards will undermine their ability to manipulate the electoral process. Plans must take careful account of factors of this kind.

1. Integrated with Central Database System: It is important for government projects to be well integrated to avoid repetition and wastage of resources. The Election Commission Secretariat, with technical and financial support from the UNDP, is currently in the process of creating a “Central Database System” that will contain relevant information about all voters in the country. If a voter ID Card Project is undertaken again, the project should be fully integrated with Central Database of Voters.

1. Create online election results updating system: In addition to the voter ID Card project, an important area that requires further attention is an effective election results updating system. At present, the website of Election Commission Secretariat has only modest capacity to provide results and other information regarding elections. This website should ideally be used to disseminate results of elections instantaneously, so that domestic and international users can view results as they are reported.

4.4 Summing Up Lessons Learned

Important points can be drawn from the preceding case studies. Some are unique to individual cases, while others are relevant for almost all cases. Since the concepts related to ICT are new to most policy-makers, it is only natural that mistakes will be made in early efforts to integrate ICT and governance. Valuable lessons can be learned from every experience, however characterized, and it is important to take stock of those early mistakes, draw important lessons from them, and ensure that the lessons are reflected in future actions and strategies. Some of the most important lessons from the case studies covered in the report are discussed below.

1. Undertake eGovernment programs only if there is championship and support from the senior level: The importance of bureaucratic commitment and political will from the top-level to the success of eGovernment projects cannot be overemphasized at this early point in Bangladesh’s transition to eGovernment. From the case studies, it was found that the Ministry of Religious Affairs has achieved success in the launch of its Hajj website largely due to the leadership of the Minister, while the Election Commission Secretariat faced disappointment in the outcome of the Voter ID Card project due to lack of political and bureaucratic commitment. As a general rule, resources should not be wasted on projects that lack a necessary degree of ownership and commitment on the part of senior-level officials. Given the hierarchical bureaucracy that defines the Government of Bangladesh, if there is lack of top-level support, mid-level and lower-level officials will be reluctant to risk getting too involved, which will in turn doom a project to failure. From the case studies, it can be inferred that the optimal course to ensure success is to identify and cultivate government agencies and eGovernment champions that have already developed an idea and are looking for support. If a project is initiated by a senior government decision-maker and project champion, there is a much greater chance of success. Future initiatives should consciously focus on providing support for eGovernment
champions, rather than launching a project that may be compelling in principle but lack requisite high-level support.

1 Emphasize the development of eGovernment software applications: The case studies affirm that the most successful projects are those that emphasize the development of practical, user-friendly software applications that will facilitate the automation of internal government processes and provide services more effectively through ICT systems. An eGovernment strategy that places inordinate emphasis on procuring hardware and establishing ICT connectivity is bound to lose sight of the primary objective of making governance more efficient. ICT must be purchased in “packages” that include application/software development, hardware, networking/connectivity, capacity building, change management for users, and the process and procedural changes that accompany a new system. This holistic approach is essential to ensure that an ICT system achieves significant impact.

1 Establish a unit for advisory, management, and maintenance support: An important lesson from the case studies is that virtually all the eGovernment projects suffer from inadequate advisory, management, and maintenance support. In view of this, the Government should give high priority to establishing a unit within or outside government that will provide these services. It is important to recognize that the personnel in this unit will have to be paid salaries higher than the typical government rate.

1 Allocate ministry-level budget for ICT spending: An important observation from the case studies is that representatives of the various government ministries and agencies studied have complained about the fact that the Government has yet to establish a specific policy for allocating resources for ICT development and applications from state sources. As a result, many eGovernment projects that begin with ample donor funding face sustainability challenges beyond the fixed term of donor support. An additional consequence of this situation is that it hinders the process through which responsible government officials assume ownership of these projects. It is vitally important that the Ministry of Finance provide an adequate budgetary allocation to each Ministry for ICT development.

1 Create citizen/business awareness regarding the potential of eGovernment: Successful eGovernment projects have swiftly created demand from citizens and businesses following implementation. It is important to make citizens and business leaders aware of how eGovernment can provide them with better services and support. Since politicians are swift in responding to citizen demand, public demand may actually contribute to the development of political will.

5. Recommendations
This section presents strategic recommendations for eGovernment strategy and discusses some specific action items for the Government of Bangladesh.

5.1 Strategic Recommendations
While the Government of Bangladesh is behind most countries in Asia in terms of eGovernment, it has the advantage of being in a position to learn from the experience of, and mistakes made by, other countries. It can set policies and determine priorities based on the experience of others in addition to its own experience. This section presents some strategic recommendations for an overall eGovernment strategy.
Stress awareness about ICT among government officials: Training programs should stress awareness of the potential of ICT in government rather than concentrate on typing skills and other rudimentary applications. One of the primary reasons why government officials resist the use of ICT lies in the way the training programs are structured. Typical training programs introduce government officials to ICT through programs such as Microsoft Word, leading to confusion about what computers are really about and how ICT will benefit them. Since most officials do not need to type documents themselves, they cannot relate to computers as far as their daily office work is concerned. ICT training programs should be re-oriented to facilitate a thoughtful and positive attitude towards ICT, and not place undue emphasis on the basic mechanical skills of using the keyboard. For instance, the Public Administration Training Center (PATC) has recently started a two-hour theoretical introduction to eGovernment and eCommerce as part of a three- to four-month training program for government officials. While this is a positive step in principle, two hours is hardly sufficient for exploring the complex dimensions of policy-making and prioritization for eGovernment. PATC should take steps to prepare a full-fledged curriculum to introduce government officials to the major policy issues of eGovernment in a systematic way.

Consider public-private partnership-based eGovernment models: The Government often does not have adequate technical, managerial or financial resources to venture into eGovernment on its own. For sustainability and strategic planning of eGovernment, it is vital that the government partners with the private sector. Such partnerships may contribute in the following areas:

- Financial investment through BOO (build-own-operate), BOT (build-operate-transfer), or BOOT (build-own-operate-transfer) models.
- Needs assessment studies and feasibility studies for eGovernment projects.
- Preparing plans for systems integration when different government offices need to interact and share information and resources.
- Designing an architecture for eGovernment to ensure interoperability, scalability, and robustness.
- Creating software applications.
- Maintaining and updating ICT systems.
- Collecting revenues from citizens/businesses for online eGovernment services.

Most countries that are seriously pursuing eGovernment have partnered with the private sector to share the costs of starting and running eGovernment projects. Public-private partnerships have been a key strategy for eGovernment initiatives in East Asian countries and in India. For example, the Indian Customs and Excise Department has outsourced the computerization of “courier clearances” to a private company, which collects revenue by charging a fixed sum for every document filed. The Government of Andhra Pradesh has gone a step further by forming a separate independent company in joint venture with a private company to maintain the government’s portal, which provides various services for business and citizens. The new company has created its own business model by collecting revenues from the users of the portal. Bangladesh’s traditional socialist economic orientation has embedded in the Government a mistrust of the private sector. Many government officials are uncomfortable with the idea of partnerships with the private sector. This attitude needs to change. The private ICT sector in Bangladesh has become quite mature in recent years and there are several ways in which the financial, managerial, and technical strength of ICT companies can be judged. One such
method to evaluate ICT companies has been devised by the Bangladesh Bank to give out equity funds. ICT companies have begun to establish track records of experience with large-scale projects and financial responsibility. The Government and donor agencies should explore ways in which they can partner with the private ICT sector to achieve sustainable eGovernment.

1. Organize marketing campaigns for available eGovernment services: At present the Government is especially weak in marketing. In recent years, it has set up several useful websites that provide services to citizens and businesses; however, they are not widely known to the public. The Government should undertake marketing campaigns to make the public more aware of the existence and usefulness of these websites. As an increasing number of online services are introduced in future, the government must have organized plans to market them.

1. Allow for decentralization of governance wherever possible and relevant: One of the limitations of the Government of Bangladesh is that it is overly centralized. Many government officers and offices have an insufficient amount of work and responsibilities. eGovernment allows for decentralization of governance through easy sharing of relevant information and documents. For instance, the Electronic Birth Registration System has created opportunities for some of the responsibilities of Rajshahi City Corporation officials to be delegated to the ward-commissioner level. Electronic data storage has enabled data previously stored only at the corporation-level to be accessed from the ward-commissioner level instantaneously. The Government should give serious consideration to eGovernment projects that facilitate greater decentralization of governance and empower subsidiary government offices.

1. Explore scope of integration: Another significant constraint facing the Government of Bangladesh is lack of integration among different government offices. This results in duplication of effort and resources, or loss of important lessons learned from experience due to inadequate documentation. One reason for this situation is that, in the manual system, there is no easy means of transferring data and information from one government office to another, nor is there an easy way of accessing necessary information. eGovernment allows for digital storage and retrieval of data that can be shared by all relevant government offices. For example, the Ministry of Planning and the Ministry of Finance work closely in making budgetary allocations to projects. With integrated databases accessible to officials from both ministries, decision-making has become more efficient than before. Given this experience, in planning eGovernment strategies the Government should seriously explore opportunities for better integration and sharing of resources and knowledge among related government offices.

1. Build ICT infrastructure throughout the government: eGovernment can be expanded if there is an adequate level of ICT infrastructure throughout the government. Stand-alone computers (i.e. those that are not connected in a network) are of little use for eGovernment. There should be plans for computers to be connected internally in offices through local area networks, and in turn to be inter-connected with other relevant offices through a wide area network (WAN). The network should eventually extend to the district-level and ultimately the local-government level. At the same time, it should be recognized that a wired government is not a pre-requisite for eGovernment, and that lack of adequate inter-connectivity among institutions should not be seen as a significant bottleneck. In the initial stages of eGovernment, it is advisable to focus on automating internal government processes and making citizen and business services available through the Internet.

1. Improve ICT access by citizens: For online eGovernment services to be accessible to all potential users, it is important for the Government to invest resources and introduce necessary
policies to extend ICT (Internet and telephone) facilities throughout the country. The Government, through the Bangladesh Telecommunication Regulatory Commission, should also take steps to ensure that the cost of ICT is reduced to make it affordable for a wider section of the population. At the same time, it should be recognized that having widespread Internet access is not an essential pre-condition in the initial stages of eGovernment. The reason is that in a country with a teledensity of 1.4 (including fixed and mobile), it will not be possible for Internet to reach the entire population in the near term. If services and information are made available through the Internet, info-mediaries (information middlemen) will play a role in getting information to target groups. In addition, other more prevalent media such as TV, radio, telephone, and newspapers can draw on information from relevant websites to serve the needs of those who do not have personal access to the Internet.

1. Emphasize Bangla interface for citizen services: One common problem with citizen-centered eGovernment services in Bangladesh is that they are almost all in English. While business services may be in English, most citizen services should have Bangla interface as a matter of policy since a vast majority of the population is still not comfortable with English. Lack of standardization of Bangla content on the web or in other digital format is a major impediment. To move to a standardized approach, the Government should make further investments in research and development.

2. Plan on an open eGovernment architecture to ensure interoperability and scalability of ICT systems: The importance of integrated and holistic planning for eGovernment architecture and the choice of technologies to be used for specific application software are often ignored in eGovernment projects in Bangladesh. The following two scenarios illustrate the consequences of inadequate advance planning. In the first scenario, a website is created that provides certain services to citizens and businesses. Gradually, the number of users of the website grows beyond expectation and the database is not flexible enough to handle the load. In the second scenario, related government offices have built two different ICT systems, and there comes a time when these two systems need to be integrated into a single shared system. Due to the wrong choice of technologies, these systems do not interact and interoperate with each other. As a result, the shared system must be built from scratch. In order to avoid such situations, technology choices should adhere to open standards and architecture so that systems can easily interoperate.

3. Do not expect quick returns: eGovernment projects may not produce returns overnight. For projects to advance, it is often necessary to change the mindsets of government officers, or for other related government offices to become automated. All of these steps take time to occur. In addition, the benefits derived from eGovernment projects—such as time saving—cannot be readily quantified. It is important to realize that a nation will only begin to see tangible benefits from eGovernment projects over a extended period of time and that conclusions about the success or failure of projects should not be drawn hastily.

4. Accept failure, learn, and move on: It is common for eGovernment projects to fail in meeting all their goals satisfactorily, especially in the initial stages of transition. Even India has a high rate of failure in eGovernment projects. Surveys conducted by “egov4dev” suggest that more than one-third of eGovernment projects in developing/transitional countries are “total failures.” If projects do fail, there is no reason to think that eGovernment will not work for Bangladesh or that popular attitudes, the administrative framework, or the political structure are
not yet amenable for eGovernment. It is important to learn well from failed projects and not repeat the same mistakes in the future.

5.2 Specific Action Items
In addition to the preceding strategic recommendations, specific action initiatives for the Government may include:

1. Create incentive for championing ICT: An incentive structure should be introduced for the promoters and champions of ICT in the government. The ICT Policy of Bangladesh states that “ICT-literacy shall be evaluated in the ACR (Annual Confidential Report) of officials to ensure utilization of ICT in the public services”. This policy statement has yet to materialize; however, it is being discussed at the highest levels. Awards or other honors from the Prime Minister or the President may be an effective way to begin to recognize the work of ICT champions in the Government.

2. Allow revenue budget for recruitment of ICT human resource in government offices: It is important to recruit ICT human resources through the revenue budget to ensure the sustainability of eGovernment projects, many of which are launched under the development budget through financial assistance from donor agencies. Once donor involvement ends, many projects face serious financial challenges. To address this situation, the Government should implement a policy for the permanent recruitment of ICT human resources in government offices that have taken up medium to large-scale eGovernment projects.

3. Establish a maintenance team which can be shared by different offices: The Government’s ICT Policy states that “Each Ministry, Division, Directorate, Department, Autonomous body shall establish an ICT Cell, to be managed and run by well-trained ICT professionals, who will be given special compensation package comparable to that of private sector.” It is not realistic to assume that the Government will be able to recruit expensive ICT specialists for all government offices in the near future. To meet needs in the interim, the Government should appoint an technically competent maintenance team, possibly located within the Ministry of Science and ICT, that can be called up for maintenance and other ICT-related needs when required. Since it tends to be expensive and time-consuming to get services from the private sector, it is important that the government has a highly skilled maintenance team of its own. The ICT Policy should incorporate this idea of a shared ICT cell rather than one for each government office.

4. Build Internet kiosks around the country: As online eGovernment services become increasingly prevalent, it will be important to provide access to these services to citizens around the country. Building Internet kiosks for community access has been an effective model in other countries such as Cambodia, India, Pakistan, and Sri Lanka, where Internet penetration rates are low. The government should develop partnership with NGOs and the private sector to establish such kiosks.

5. Establish an eProcurement system in Bangladesh: Online procurement systems are one of the most popular eGovernment initiatives in neighboring countries to address corruption and lack of transparency in government procurement. Malaysia’s eProcurement system, known as e-Prohelan, has over 4,000 government procurement points and over 30,000 suppliers.
registered with the system. It supports the entire procurement cycle from request for quotations, through request for tender, to direct purchase. It provides easy procedures for comparing quotations and specification of goods and services offered. Besides accountability and transparency, other benefits of e-Prohelan include increased efficiency, reduced time for processing, and reduced operational costs due to electronic retrieval and submission of quotations. Similarly, Hong Kong has created an Electronic Tendering System (ETS). Korea’s e-Procurement System at http://www.g2b.go.kr, which covers the entire procurement process from tendering to payment, has yielded savings of millions of dollars to the government. Singapore’s e-Procurement System, called the Government Electronic Business at http://www.gebiz.gov.sg has gained instant popularity for its easy-to-use features. Thailand’s e-Procurement system can be found at http://www.gprocurement.or.th. The Bangladeshi government should take similar steps to establish an eProcurement system to increase transparency, reduce corruption, and minimize the time and cost of processing tenders.

1. Create one-stop government portal: The Government should create a one-stop governmental portal that is designed to serve the specific needs of citizens and businesses. While this is not a high-priority item for the present, it will become an important issue in the next few years as an increasing number of eGovernment services go online and a single entry-point to various services becomes increasingly needed. While the portal that is now touted as the national portal of Bangladesh provides a list of links to websites of different government offices (which is not comprehensive), the portal is not genuinely user-friendly in assisting users to access necessary information and services. Some regional examples from which lessons can be drawn include: the Singaporean e-Citizen portal at http://www.ecitizen.gov.sg; the South Korean portal at http://www.egov.go.kr, which provides about 400 public services; and the Indian portal called India Country Gateway at http://www.incg.org.in.

1. Develop a scheme for national ID: Introduction of a unique digital identification for every citizen will provide an important base for eGovernment services. For services to be delivered efficiently and in a personalized way, it is essential that citizens have unique ID numbers. Many governments have already developed ID cards for their citizens, which are used for various services, including public health services and unemployment benefits. The Shanghai Municipal Government has developed social security cards as electronic keys to various systems. The Government of Brunei has provided “smart cards” to almost every citizen which are used for a combination of driving licenses, school registration, and other applications. Hong Kong has introduced a Smart ID Card to conduct secure transactions over the network, while Malaysia has also developed a Multi-Purpose Card (MPC) that facilitates a variety of transactions, including the issuance driving licenses and cash withdrawal. Bangladesh should take active steps to initiate a project for national ID. Since this will be an enormous project on the scale of the failed Voter ID Card project, caution should be taken from the beginning and the project should begin with small pilot projects.

1. Create online payment gateway: Gateways should be established to allow citizens to fully benefit from online services and to enable the Government to generate revenues from online payments and related functions.

1. eGovernment initiatives depend on freedom of information: Governance reform efforts should be grounded in an environment that increases access to information and channels public demand for improved performance of public institutions. Open, transparent, and accountable government requires public access to information on government activities, procedures, and
decision-making processes. Information in the public domain empowers the private sector and civil society by mobilizing demand for fair and efficient governance. This demand in turn prompts public sector responses that bring government closer to citizens. Through citizen participation in public decision-making, government becomes more responsive and less arbitrary, while officials are less able act outside their authority when their actions are open to public scrutiny. In Bangladesh, a tradition of secrecy in public administration prevents the free flow of information on public policy, regulatory reforms, or other matters of public interest to the business community and the general public. In an era of eGovernment, archaic laws that preserve a culture of secrecy have lost their relevance and should be replaced by a Freedom of Information law that extends unlimited public access to information on all but a narrow range of issues in which disclosure would compromise the security of the state.

1. Introduce cyber laws: As the scope of eGovernment services expands, the enactment of cyber laws is becoming increasingly important. Some of the issues to be included in the legal framework are laws to protect intellectual property; laws for acceptance of documents in electronic format (such as downloaded documents); cyber-terrorism laws that protect against unauthorized hacking; and laws to enable electronic authentication. There is a further need for an Electronic Certification Authority designated by the government, which should have the authority to provide electronic certification to organizations and individuals.

1. Set up an eGovernment Resource Center: The government should take steps to set up an eGovernment Resource Center that would serve as a think tank and policy research organization on eGovernment. The Center should include representatives from the government, the private sector, and the academic community. Its responsibilities may include, inter alia:
   q conducting Research on eGovernment-related issues.
   q monitoring eGovernment initiatives in the country, evaluating progress, and recommending actions.
   q keeping track of best practices around the world.
   q developing plans for eGovernment technological architecture and choice of technology based on international benchmarks.
   q conducting needs assessments for eGovernment strategy in different government offices.
   q serving as a meeting place and repository of information for government chief information officers (CIOs).
   q evaluating partnership models and eGovernment project proposals from the private sector.

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