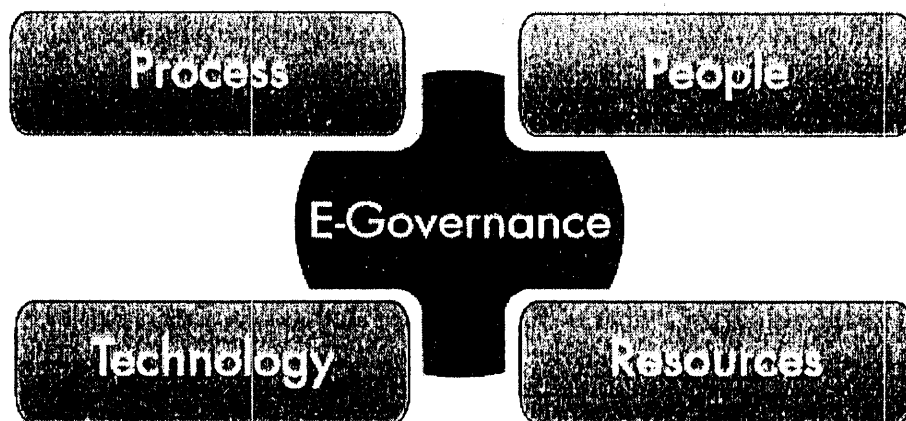


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e-Governance Training Need for the Senior Level Officials
(Joint Secretary) of Bangladesh Civil Service



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Savar, Dhaka, March, 2012

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Preface

The study was conducted under the Project titled “Strengthening of BPATC (Phase-III)”. The purpose of the study was to assess the e-Governance training need of the participants of SSC and to suggest for necessary adjustments in the curriculum of SSC towards introducing e-Governance in Bangladesh. The specific objectives were to identify the relevant knowledge and skill areas that the SSC participants require to manage e-Government initiatives in their offices; to determine the training needs of the SSC participants to run and manage e-Governance; and to suggest some necessary training inputs and adjustments for the curriculum development of SSC.

The Senior Staff Course of BPATC is the highest level of core courses specifically arranged for the Joint Secretaries and equivalent officers from arm forces. The participants of the SSC course are placed in strategic levels of the organization either as wing chief in the Ministry or CEOs or Directors in different Directorates. They have to take leadership roles in initiating new ways of doing works by creating congenial atmosphere in own organization. They are responsible to take initiative by introducing ICT based service delivery, re-engineering of service (business) process and innovation for new packages of service delivery. They are also responsible for managing ICT project as project directors, monitoring and supervising the IT professionals of own organizations and taking care of the ICT establishments like websites, MIS, databases, IT systems, networks, automations and other issues related to e-government management. But, in the existing training inputs of SSC course, it is found that the ICT and e-governance module is not found sufficient. The portion of ICT in SSC course curriculum is not need-based. So, in order to make the ICT part of the course curriculum more need based, realistic and befitting, the study was conducted.

In the process of study, the researchers got very important guidance from the Rector of the Centre Mr. A. Z. M. Shafiqul Alam who is considered one of the IT champions of Bangladesh Civil Service. We also received all-out cooperation and guidance from the Project Director and MDS of BPATC Mr. Md. Akram Husain. We, the team members of the Project, must recognize and acknowledge their generosity and kindness in this regard.

Lastly, the research team would be satisfied if the outcome of the study contributes to develop the curriculum of the SSC course.

Dated BPATC, Savar, Dhaka

April 18, 2013

Executive Summary

Senior Civil Servants are the key policy maker for the government. Thus, they are in senior positions of ministries in political government. The present government has taken a vision and strategy to implement Digital Bangladesh by 2021. Already various actions has taken place like as e-Service delivery, e-Purchasing, e-Medical service delivery and so on to prevent the corruption and ensuring accountability and to make government more transparent. In a wider perspective, e-Government is to be ensured for good governance. There is a limited work in BPATC to identify the training need for e-Government management for the level of Joint Secretary. Therefore, the outcome of the research would contribute to identify the e-Government training need areas in terms of needed knowledge, skill and attitude of senior civil servant of Bangladesh. Moreover, this study would be able to identify the major factors as well as core of training contents in order to modify the existing ICT related module of Senior Staff Course.

The objective of this study was to identify and assess the training needs of the participants of Senior Staff Course (SSC) to modify the ICT related curriculum of SSC; specifically to identify the relevant area of knowledge and skill of the SSC participant towards ensuring e-Government; to determine and identify the training module for SSC to manage e-Government and to suggest for policy guideline. As the research instrument a structured questionnaire has been used for collecting data from the prospective participants of SSC. This study extracted the core areas of training need related to e-governance knowledge, skill and attitude as well. Thus, Principal Component Analysis has done with those core areas of skill and knowledge. Descriptive statistical results revealed that all those areas have high and significant relationship among the major variables and achieved high score of mean value.

This study report consists of five chapters. These are: chapter one has illustrated the research background/introduction, research problem statement, research questions, research objectives, rationale of the study and finally the scope and limitation of the study. In second chapter, literature review has been done. Chapter three has dealt with research methodology and its procedures. Chapter four has described data analysis, data presentation, results and findings of the study. Chapter five consists of recommendations, conclusion, implication and limitation.

In this study, empirical data is collected from primary sources (Government Official at the level of Joint Secretary of Bangladesh) through questionnaire survey and literature has been developed from secondary sources. Purposive sampling is used for this study. Scale variables

structured questionnaires were used for data collection. Questionnaire items have been tested with Cronbach Alpha test. Questionnaire items were reduced with run of Factor Analysis (FA) and FA has confirmed 8 factors, those are major variables of e-Government training construction.

Statistical Package for Social Science (SPSS) tool is used for data analysis. Respondent's demographic profile data is analysed with frequency distribution.

Descriptive statistics reveals that among the four major variables (like 'Individual ICT Skill'; 'e-Government Management Capacity'; 'e-Government Skills for Organizational Level'; and 'Proper Attitude for e-Governance') have significant relationship and those are found important for Senior Level Civil Servant. But the mean score of those variables are moderately high as it is required.

The Pearson Correlation is run to find out the relationship among all the variables; and result reveals that variables are direct relationship among 'Individual ICT Skill'; 'e-Government Management Capacity'; 'e-Government Skills for Organizational Level'; and 'Proper Attitude for e-Governance' for Joint Secretary Level Officers of Bangladesh Civil Service.

Exploratory Factor Analysis method is used to identify the dimensions of e-Government training areas for the Senior Level Civil Service of Bangladesh. In this study, Principal Component Analysis (PCA) is actually performed. Principal Component Analysis (PCA) has given 8 factors from 34 items of e-Government management variables. These are related to **factor 1**: 'knowledge on using ICT'; **factor 2**: 'knowledge on internet and web portal'; **factor 3**: 'presentation skill'; **factor 4**: 'basic knowledge and skill on ICT'; **factor 5**: 'leadership skill on managing ICT/e-Government'; **factor 6**: 'e-Service and e-Procurement for e-Government'; **factor 7**: 'skill & knowledge on using analytical statistical tools'; and finally **factor 8**: 'knowledge on webpage maintaining'. Therefore, these 8 factors are basically related to e-Government skill, knowledge, attitude which is essential for e-Government management.

Principal Component has given eight areas of e-Government management knowledge and skill. In order to develop the e-Government knowledge, skill and attitude for the Senior Level official those areas are to be given emphasis. Therefore, these are the potential areas for the Joint Secretary Level official to formulate e-Government training module.

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INTRODUCTION

BACKGROUND OF THE STUDY

Managerialism and New Public Management (NPM), which was introduced by many developed and developing countries during the 1980s, offered public sector organizations a model based on private sector managerialism practices (Criado et al. 2002). In today's technology-driven and globalised world, e-government is the next wave of public management reform. Governments in developing countries are seeking to develop the essential institutional framework, along with necessary policies and investments in knowledge infrastructure and new technologies, which would reorient development programs and public management systems by increasing efficiency, reducing corruption and improving accountability standards. Digital empowerment of society and public management systems could become the corner stone of age (G 8 kyushu-Okinawa Summit, 2000). Thus e-government can play a vital role and transform the way the services are delivered as well as change by dynamics of the relationship between governments and citizens (Teicher & Smith, 2005). e-government requires consumer centric approach to service delivery which will "create public value". Developed countries have passed the transitional phase of e-government infrastructure development, and now are focusing on how to implement e-government practices to improve the delivery of public services to the people and to tap the potential synergy from the interaction between new technologies and an enabling environment for the attainment of knowledge-based economies. Developing countries are still at the transitional phase, formulating policies and initiating processes to equip institutional capacity and people to benefit from e-government.

PROBLEM STATEMENT

To make e-government an operational reality public management system needs to introduce a better governance infrastructure. Bangladesh has an intractable problem of poor governance. Poor governance is further piled on the public management's lack of readiness for e-government. It allows bureaucratic red tape and corruption. E-government requires an e-government infrastructure allowing vertical and horizontal interactions between government agencies, business enterprises, multilateral organization, citizens and civil society groups where, members of the public management systems need to be equipped with new mindset, knowledge

and skills. For e-government to succeed in Bangladesh “e-readiness” must be built. This means strengthening infrastructural capacities to reduce the barriers to e-government and strengthen the drivers. The priorities, therefore, are to build e-readiness in six key areas: awareness and commitment at a high level; enactment of new laws and regulations for enabling e-government strategy; setting up of key e-governance institutions to plan and facilitate e-governance projects; strengthening operational capacities to implement pilot projects in the area of human capacity, technology and data system and setting up of e-governance pilot projects that focus on ‘networked government (Alochona, 2008). E-government infrastructure offers a new platform of social contract which binds three parties, public at large; government and business (UN, Public Sector Report, 2003). To translate the new social contract into public value, one of the important requirements is the readiness of the public managers whom we are going to examine in the context of Bangladesh. e-government also requires the transformation of hierarchical structure of public management into networked and integrated structures. Such a transformation of government is only possible if the public management system is prepared and people are enabled for the control, transmission and proper use of information and resources in a vertical and horizontal way as the networked government structure is evolving with complexity and where e-participation of various actors is becoming important requirement for good governance.

Senior Staff Course is one of the significant core courses of BPATC. A good number of areas of professional knowledge and skills are covered under this course within the limited time-frame to prepare the participants to run the administration as the senior members of Bangladesh Civil Service. Under the SSC, the professional areas like Public Policy Studies, Public Service Management and Governance, Globalization and Negotiation, Macro-economic and Environment Management, Financial Management and Project Management, Professional Language Application and ICT Application in Office Management are the main input areas of Senior Staff Course.

The existing Module of ICT Application in Office Management is the only input for senior level officers of BCS. But the government is trying to introduce e-Governance including online service delivery and ICT based business process in public service delivery system. Under the Vision 2021, government is also committed to bring a significant transformation from traditional service delivery to the ICT-based service delivery to the general people of the country.

The Joint Secretaries of the government are the key players in leading, implementing, managing, monitoring the e-governance initiatives in their respective organizations. So, in order to lead the

e-governance initiatives they must have sufficient knowledge, skills and attitude regarding e-Governance management. In this respect if we, analyze the , existing Module in SSC, that gives us very hopeless picture. The existing Module covers only the primary skills in ICT operation. Simply, this type of Module can enhance only some ICT skills for them.

Moreover, for the senior managers of the civil service, there is no special course. So it is now the demand of the time, to modify the ICT related existing curriculum. So, the main purpose of the study is to identify the e-government management training need for the senior officers of BCS. The study outcome will certainly help the curriculum development team to redesign ICT related module of SSC as well as design a special course on e-government management for senior officers of BCS.

However, the proposed research is an attempt to investigate the supply side training needs or smooth introduction and implementation of e-governance in the country. This research has particularly dealt with the groups of Joint Secretary level officers of the Bangladesh Civil Service, who were the participants of Senior staff Course (SSC) at Bangladesh public Administration training Centre (BPATC). The overall purpose is to assess the e-governance management training needs of the participants of SSC and to suggest for necessary adjustments in the relevant part of the curriculum of SSC to enhance their levels of knowledge, skills, aptitude, awareness, perception and attitude towards e-governance.

RESEARCH QUESTIONS

The research questions of this study are as follows:

Do the senior officials of Bangladesh Government have required knowledge and skills regarding e-governance? If so, to what extent do they have the knowledge and skills for managing e-governance? The study will also investigate the training needs as the users and managers of e-governance at the level of Joint Secretary of Bangladesh Government.

RESEARCH OBJECTIVES

The broad objective of the research is to study and assess the training needs of the participants of SSC and to suggest for necessary adjustments in the curriculum of SSC towards introducing e-governance in Bangladesh. Specific objectives are:

- To identify the relevant knowledge and skill areas that the SSC participants require to manage e-government initiatives in their offices;

- To determine the training needs of the SSC participants to run and manage e-governance; and
- To suggest some necessary training inputs and adjustments for the curriculum development of SSC.

RATIONALE OF THE STUDY

Human resource is the driving force of any organization. Public workforce, as main driver, is the 'supply side' of e-governance; also key to planning, designing and implementing any e-governance initiatives. Therefore, necessarily they require being equipped with right aptitude (skill perception and understanding), attitude (desire) and moving with changes.

E-governance is one of the most contemporary concepts of the present world. By this time, some nations already have proceeded much ahead with this. Some other countries are well prepared to take off taken off. Countries like Bangladesh have just started moving. Therefore, in Bangladesh context, the proposed field remains almost a virgin one to be explored into, where substantial knowledge gap exists. Very few government business or technical reports, documents or articles are presently available in this connection. Particularly, in the area of preparedness of Bangladesh Civil Service, from public management perspective, there exists no academic research or study in Bangladesh, so far the researchers' knowledge goes.

Senior Staff Course is one of the significant core courses of Bangladesh Public Administration Training Centre. Many areas of professional knowledge and skills are covered under this course within the limited time-frame to prepare the participants to run the administration as the senior members of Bangladesh Civil Service. Governance, Project Management, ICT, etc receives prime focus of the course. Innovations in governance, new trends and best practices are also highlighted with due importance. As a result, lectures on e-governance are not absent. However, e-government as a specific area of knowledge neither has received specific attention, nor the training needs of the participants have yet been taken into consideration in the existing curriculum of Senior Staff Course run by BPATC. In this context, it is a prime need to explore into the matter with due importance and necessary efforts. Proposed research is an initiative towards that end.

STRUCTURE OF THE STUDY

The study report consists of five chapters. Chapter one deals with introduction of this study. Chapter two describes concept of e-government, e-government status in different countries along

with Bangladesh. Research methodology of this study is discussed in chapter three. Data analysis, study results and discussion is reported in chapter four. Recommendation and conclusion is reported in chapter five.

SCOPE AND LIMITATION OF THE STUDY

As the focus of this study is the issue of training of the Joint Secretary level officers many other related issues will remain beyond the scope of this research. Considering the limitations regarding scope and sample size, this study is not intended to be fully representative. Very precisely, this study is focused on e-government training needs for Joint Secretary level officials of Bangladesh Government through curriculum development of Senior Staff Course held at Bangladesh Public Administration Training Centre.

E-GOVERNMENT

“E-government is the use of technology to enhance the access to and delivery of government services to benefit citizens, business partners and employees” (Silcock 2001:88). Sharma (2003) suggests that e-government in its fully developed state is an e-portal. The e-portal is a one-stop government service shop that offers citizens links to all facets of government; links to non-profit organizations; links to private organizations and other agencies such as multilateral organizations. The e-portal can be owned by private firms as a one stop single portal entry to the interconnected public departments (Wimmer, 2002). It may also allow self sufficient citizens to be better equipped to pursue their own private interests, as they will be in a position to self-govern and self-regulate. In Australia this system is expected to ‘...improve the endemically faulty and constantly repaired machinery of the liberal democratic government’ (Meredyth Ewing & Thomas, 2003:5).

E-government can be considered as a public policy tool that creates opportunities for public sector reforms and allows the system to operate more efficiently and effectively. It presents the prospects of better and more cost effective service delivery and greater citizen empowerment (UN 2003:182 in Smith & Teacher 2004). In developed countries, e-government is about transformation and the integration or seamless delivery of services to citizens. The transformation requires a fully committed and functional government with a focus on service delivery. Australia has been noted as a world leader in the development and the implementation of effective e-government strategies and initiatives (Clark, 2003; Teicher & Dow 2003; Tanner 2001). Australia has moved from traditional hierarchies to a more market centric approach to the delivery of government services (Clark, 2003). This requires a shift of the governmental perspective from a fragmented public administration approach to a customer-oriented approach of service. This customer oriented approach requires clear and concise single portal entry that is relatively easy to navigate (Wimmer, 2002). Any important goal of e-government in the public sector is the promotion of engagement of people and other stakeholders in public policy making and implementation (Clark, 2003:385). Another important feature of e-government is that it works as a means to cost saving on service delivery, whilst making the government more accountable and transparent by creating higher awareness of and accessibility to government activities (McNiven, 2003; Silcock, 2001 & Turner, 2001).

Benefit of e-government

E-government offers transparency and understandability of government, which highlights the governmental accountabilities (Marche & McNiven 2003). For public management this can create liability and highlight deficient accountable public servants (Silcock 2001). Governments in developing countries have formulated e-government policies citing its many benefits ranging from lowering costs, improving efficiency and providing more cohesive and responsive services to the public. But governments have not been able to create skilled, competent and motivated staff and good practices in order for a successful e-government (Silcock, 2001). The Global E-government Readiness Report 2004 ranked the 191 UN members to identify how willing and ready governments around the world are to employ the opportunities offered by ICT to improve the access and quality of basic social services. Developing countries are lagging behind, as evident below:

Table 1: E-government Development in Largest Population Counties

Country	E-gov. development index		World e-gov. development ranking		Population (in millions)
	2012	2010	2012	2010	
China	0.5359	0.4700	78	72	1,341
India	0.3829	0.3567	125	119	1,225
United States	0.8687	0.8510	5	2	310
Indonesia	0.4949	0.4026	97	109	240
Brazil	0.6167	0.5006	59	61	195
Pakistan	0.2823	0.2755	156	146	174
Nigeria	0.2676	0.2687	162	150	158
Bangladesh	0.2991	0.3028	150	134	149
Russian Federation	0.7345	0.5136	27	59	143
Japan	0.8019	0.7152	18	17	127
Mexico	0.6240	0.5150	55	56	113

Source: United Nations E-Government Survey 2012: E-Government for the People

Structural and human capital related changes are needed at a government level to introduce effective e-government participants (1-Ways 2003). On the downside, e-government will create a transparent government, which will possibly be more accountable to the citizen (Silcock, 2001). In the absence of an implementation plan, the use of e-government policies is restricted to those with the necessary resources and the skills, thus creating an elite group within the public management system that will reinforce a digital divide (Basu, 2004). Basu (2004) also urges that access of high ranking officials to existing limited e-government practice, absence of trained managers at various levels, shortage of equipment and presence of undeveloped infrastructure

created some degree of dysfunctionality in an already corrupt and inefficient administration. Information poverty, according to Meredyth, Ewing and Thomas (2003), is increasingly emerging to government as a significant problem in many countries. The digital divide creates questions for government as to how they are able to bridge the gap by creating technology centers subsidizing access to the internet. There is a need to increase the supply side e-readiness through training and development supported by operational plans to execute policies. Lee-Kelley and James (2003) suggest that the technological gulf is widening between of those individuals who are e-literate, those who cannot access the Internet and those who are concerned about the cost of access. It is up to the government to create the necessary skills, readiness and resources so that public managers know how to access computers and the Internet and use it as an efficient public policy making and implementation tool. Singapore has created a position where a successful e-government system has been implemented, e-government has given the government great monetary savings, it is a country that maximizes its technology and the public in Singapore is well wired and up to date with awareness what technology can offer (Ke & Wei, 2004). Lodge (2003) articulates that e-government is a powerful device, which is devoid of political meaning; it is an information server to the community. But the public managers as the suppliers of cost effective and quality services should have the required e-readiness.

E-government systems require an adequate access to modern technology and the ability to reconstitute the governance mechanism. Adequate human resource capability is needed to coordinate the internal and external service factors so as to be able to handle a demand for services (Wimmer, 2002).

The government needs to implement the following in order to create a successful e-government: public awareness; legal and regulatory infrastructure; manpower, knowledge and skills of the people who can develop the system in order to help others use the system and maintain a high service level (Sharma, 2003). There is a need to have a strong commitment from governments to make the necessary infrastructural changes and to introduce modern technologies (Wimmer, 2002). Sharma (2003) highlights that governmental staff needs to be adequately trained to deal with problems, and to support the introduction and further maintenance of the services of e-government. Without the necessary skills and willingness, the development of e-government will remain at a public debate level. There requires a well devised strategic plan to take it to the interactive stage in the short term and then to at an advanced stage at the long term. Successful implementation of e-government policies demand not only availability of technology and

infrastructural facilities but also a skilled and capable manpower willing to take a lead in using cutting edge technology.

E-readiness as a Critical Building Block for E-governance in Bangladesh

Transformation from traditional governance is not a linear process. The public management system in Bangladesh is facing strategic challenges that demand to be addressed in a planned way to ensure readiness in all enabling institutional factors. Success in the area of e-governance requires more than just deployment of technology and building connectivity. It requires much broader and far-reaching in terms of policy initiatives, infrastructure building and skill development, most of which are not technical in nature (UN, 2004). E-governance requires prime attention in the areas of administrative changes, procedural and legal issues, and preparedness of the supply and the demand sides of the public management system. Supply side refers to the public officials, who are the main drivers of e-governance as they are employed in the supply chain of public utilities and services. To ensure proper implementation of e-governance and to avoid the risk of resistance, motivation and effective participation of public officials are critical prerequisites.

In Bangladesh, e-governance has become an agenda for public sector reform and good governance. Some preparatory initiatives have been taken to implement e-government practices at various levels of public management system. However, although a national ICT Policy exists in the country, no national vision, strategy or action plan for e-governance has yet been defined by government.

Bangladesh is facing a crisis in governance as the systems of governance in Bangladesh are increasingly becoming unresponsive and irrelevant to the needs and concerns of the vast majority of the population. In the international seminar (held in Dhaka on 12-14 February 2002, on 'Poverty Reduction Strategy Paper', jointly organized by Government of Bangladesh, WB and IMF), the attendees identified accountability, transparency, decentralization, administrative reform, and satisfaction of public service by its clients as key problem areas in the present governance system in Bangladesh. One of the recommendations was to focus on e-governance and eventually the participants explored the potential role of the IT sector in bringing about a radical change to improve the situation. The recent research findings highlight the critical success factors of the e-governance system, ranging from effective strategies, government leadership and knowledge readiness of public managers in a developing country context. Singapore is a leading example of successful e-government. According to Ke and Wei (2004)

this can be attributed to strong leadership, which has created a strategic action plan for e-government implementation including e-literate public officials. Governments in developing countries need strong leadership and commitment to create e-capability. E-government initiatives need to be politically acceptable to the relevant opinion makers and Government at that time to strengthen the supply side of e-government (Basu, 2004). Technology can make the government transparent; in developing countries this may not be ideal especially where the governments are obscure, inefficient, e-illiterate and corrupt (Basu, 2004; Briens & Achterbergh 2004). The general consensus is that e-governance is electronic delivery of government services to the people whereas the potential for e-governance is beyond electronic government services to the people. E-governance in its real sense is the use of information and communication technologies to support good governance. It should be considered beyond old 'IT in government'. The areas noted e-administration, e-citizen and e-services initiatives, and the government related components of e-society together represent a networked government model for e-governance, the overall aim of which is to effectively utilize ICT (information and communication technologies) for good governance reforms. A networked government model can strengthen the existing relationships and build new partnerships within the public management system allowing important stakeholders including civil society groups to engage in creating the architecture of good governance. To introduce a networked government model, the public management system requires trained and knowledgeable managers. To create e-awareness and establish readiness, Bangladesh needs to develop well trained and motivated public managers who will be in charge of efficient use of existing resources. They should have the ability to integrate technology with development, planning and implementation of appropriate action plans for effective and speedy solution of public service problems.

The emphasis of current private sector and donor initiatives has generally been on e-business and non-governmental e-society that has left a large growing gap in the public governance system. Multilateral agencies are interested in e-government which stems from the prescription that e-government will advance the agenda on governance and fiscal reforms, transparency, corruption, empowerment and poverty alleviation. E-government is thus considered as a tool for government reform (Bhatnagar, ITP Asia, Com). E-government is not the software package or website. It is a process tool; it is about how the government works and uses IT, share information and deliver services to internal and external clients. The expected result is governance that is more transparent and convenient, and a government that is less corrupt, both of which would allow decreases in costs and increase in revenue.

One of the key supply side driving forces is the public managers. Their preparedness, psychology, initiatives and expertise to use e-government as a process can facilitate the leap-frog approach for developing countries. Before implementing e-government policies for better governance there is a need for e-readiness of important factors. Success stories of various countries suggest that strong political and administrative commitment and leadership, efficient project management, clearly defined goals and benefits, significant process reengineering, adaptation of established standards and protocols, investment in training and enhanced e-capability are all crucial factors.

A competent and well-motivated public administration lies at the core of good governance (World Bank, 2002). People engaged in public service need to realize, refresh the inner driving force-the very desire to make a meaningful contribution to the society that brought them to this arena of Public Administration. Public Administration is responsible for improving citizens' life and delivering "public value". It is something more than that how efficiently the public servants undertake reform initiatives in his/her duties. This is about his/her professional commitment to contribute in a better life to all. This professional commitment has to manifest in the way they do their work, in the way they interact with political leaders, in the way they get engaged with citizens and in the way they bring about positive changes in their organizations and in their communities. They need to know as to who they are, why they are in the public administration why all supports including new technologies are around them, how to ensure appropriate use of those technologies in the daily work that will ultimately lead to citizens' benefits. How they perceive e-governance deeply relates the issue of how they get engaged in e-governance initiatives. "When everyone becomes partner in the enterprise, whatever its mission, the possibilities for quantum leaps in performance are very real...reinventing government can have dramatic results, but only if those involved are prepared to use dramatic methods" (Riley, 2003).

On the contrary, a stiff or negative attitude usually lays critical resistance against organizational changes, when a positive attitude can become a powerhouse for such changes. Employees usually feel comfortable with existing environment, procedures and tools because of long practiced organizational culture and habit. They often fear to adopt or handle new technologies, newer ways and means of functioning. Besides, corrupt civil servants may dislike a transparent and smooth functioning with e-governance efforts. Such cultural habits are difficult to fight with. A change in the mindset of public sector workforce helps enabling effective e-governance. Lack of confidence, knowledge or skill among workforce pushes them to a negative stand. In many cases, lack of skill and knowledge also leads to failure of e-governance project. Once the

project is handed over to the respective agencies, the management and sustainability of the systems seem to be a major problem. For smooth running of e-governance, Gord Jenkins observes an overriding need for an updated aptitude of government program managers. As he says, “in every project I worked on, no matter the location, not enough time was spent on making sure that senior management understood exactly what e-governance was and how it would be implemented” (Gord Jenkins, 2001).

Amongst public officials, a generic lack of e-governance leadership and commitment is observed because of lack of awareness, knowledge, skills and confidence. This lack leads to such e-governance initiatives that are basically planned and driven by vendors, or by consultants. As a result, inappropriate systems from other sectors or countries that do not fit in specific realities are often being forced in. It is also observed that many recent e-development initiatives from bilateral and multilateral donors appear to be deliberately avoiding government. This is partly because of the human capacity and regulatory constraints within government, and partly because of continuing ‘government bad, markets/NGO good’ mentality. Therefore, many e-initiatives are seen bypassing the state and going for community telecentres, ICTs in schools, telemedicine, e-commerce, e-society, etc. (Richard Heeks: 2001).

Change in the mindset and skill level of senior level civil servants can be brought about by focused organization development interventions and training programs. Once this is done, they can take the lead as champions and act as ‘change agent’ that can ultimately result into a corresponding trickle down effect right through the spectrum of government.

Information of the workforce about the objectives, needs and as to how e-governance has been planned to be implemented will encourage their acceptance and participation right from the beginning. Publication of well structured and easy to understand e-governance guidelines that are signed by senior officials and distributed to the civil servants will help official dissemination of useful information on e-governance move, and at the same time, it will expose the drives and support of senior management.

Initiatives for introducing e-governance in Bangladesh must need well prepared public sector managers as the driving force. For successful implementation, e-governance initiatives, *inter ali*, needs to know the answers of the following:

- What are the relevant knowledge and skill areas that this level of officers requires to manage e-government initiatives in public sector?
- What knowledge and skill gaps currently exist?

- What are their training needs to prepare them as driving force of e-government management?
- How the required training inputs could be adjusted with the existing training inputs?

Computer Usage Training Needs for Joint Secretary Level Officials

In the working environment computers have various tasks such as: communication with remote users; internet use/browse for information searching; computation and calculation; data storing and collection; web site design; use of different set of tools such as-e-mail, internet explorer, word processor, database, web application and so on.

In the name of IT, a paradigm shift has been taken place all over the world. Now- a -days networks become increasingly strategic and critical for organization of all sizes. It is imperative that knowledge of IT and computer user and exposure to the fundamentals of computer skills and IT to be competitive in today's challenging job market as well daily business. Bangladesh Civil Servants are also facing this type of challenges in day to day work life. It is very much essential to have technical skills on ICT for successful careers in a variety of public organizations.

UNDP report (October, 2008) has identified that for managing e-government infrastructure a rigorous type of training is required, specially computer literacy and ICT and functional English. This survey is also reported that technical skills, management expertise and leadership capabilities are required for e-governance among the Bangladesh Civil Service officials.

UNDP survey report has made a set of recommendation for e-government, and they are:

First of all, the mindset of civil servants must change to incorporate e-communication as the administrative norm internally and externally. Mindset in a large scale with leadership and management to embrace all aspects of workplace culture. Changes in mindset include such fundamental procedural changes e-mail and branding, recognition of electronic document authenticity and authority (through secure digital signature systems).

Second, access to software and hardware which includes equipment (computers and software) and infrastructure (power, connectivity, Internet capacity at broadband level), must be provided. Without sufficient equipment and infrastructure in public organizations the e-government initiatives will certainly bring no significant results in rapid service delivery.

Third, dependent on mindset and especially on access, there is training. Without systematic and need based skill development and maintenance, access to equipment will remain at or close to entry level-satisfactory for many basic functions such as word processing and record keeping but far below the potential for two-way communication and understanding. In any case, training without access remains empty, because skills cannot be embedded and maintained.

Training Institution preparedness/initiatives to meet the training needs for e-government for civil servants

Basic ICT skills are already provided by the Bangladesh Public Administration Training Centre (BPATC), the Bangladesh Computer Council and the Public Administration Computer Centre, BCS Administration Academy. Most of the training course related to ITC is basically focused on technical and computer user skills.

Focus and contents of ICT related module of ACAD: The main focus of ICT related module of ACAD is developing preliminary operating skills of participants. No topic which is related to e-Governance is included in ACAD module (Annexure-B).

Focus and contents of ICT related module of SSC: The main focus of ICT related module of Senior Staff Course is developing operating skills of participants. Only one conceptual on e-Governance is included in this module (Annexure-C). The participants of SSC are quite senior level managers in civil services and they have important role to plan, implement and monitor the issues related to e-Government management. But in formulating the ICT related module for Senior Staff Course, this reality is fully ignored.

Focus and contents of e-government management course: In collaboration with Australian National University (ANU), this course is designed for BPATC to provide current and future managers in the governments sector with the essential ICT technical and managerial knowledge that is needed to oversee successful e-Government investments. The course highlights the key aspects of successful ICT management practices in the context of socio-cultural and organisational complexity (Annexure-D). The topic areas include: e-Government concepts and life cycle phases, e-Government system and infrastructure, systems implementation and ICT management. The course will also provide the opportunity for real life experiences through case studies from developed and as well as developing countries. On completion of this course, the participants should have insights into how e-Government operates, and understanding of the roles they could be asked to fill, and combination of managerial, analytic, and

technical knowledge that is needed to handle e-Government systems effectively and with confidence.

On completion of this course the participants will be able to:

- a) Understand the nature of e-Government and key issues relevant to public sector ICT management.
- b) Recognize opportunities for using IT and web-base systems in e-Government
- c) Participate in strategic planning for e-Government systems, with the understanding that investment in ICT should be aimed at getting clear and identifiable benefits.
- d) Understand the nature of poor ICT systems in e-Government
- e) Institute appropriate governance procedures in planning for ICT, managing ICT projects, monitoring, controlling and reviewing the use of ICT resources in e-Government
- f) Communicate and negotiate with ICT professional and vendors as the public sector counterpart.
- g) Engaged in discussion and debate on key issues relating to e-Government, including ethical and social issues.
- h) Understand the global and Bangladesh perspective of e-Governance.

Focus and contents of ICT related course of BCC: ICT module is designed to provide current and future managers in the governments sector with the essential ICT technical and managerial knowledge that is needed to oversee successful e-Government investments. The module also highlights the key aspects of successful ICT management practices in the context of socio-cultural and organizational complexity. Very specific the topic areas include: e-Government concepts and life cycle phases, e-Government system and infrastructure, systems implementation and ICT management. The course will also provide the opportunity for real life experiences through case studies from developed and as well as developing countries. On completion of this course, public sector should have insights into how e-Government operates, and understand the roles they could be asked to fill, and combination of managerial, analytic, and technical knowledge that is needed to handle e-Government systems effectively and with confidence.

On the other hand, different institution especially BCC's has offered e-government training module as follows:

- Module 1: The Linkage between ITC Applications and Meaningful Development.
- Module 2: ICT for Development Policy, Process and Governance.
- Module 3: e-Government Application.
- Module 4: ICT Trends for Government Leaders.
- Module 5: Internet Governance
- Module 6: Network and Information Security and Privacy.
- Module 7: ICT Project Management in Theory and Practice
- Module 8: Option for Funding ICT for Development.
- Module 9: ICT for Disaster Risk Management
- Module 10: ICT for climate Change, green growth and sustainable development.

Among the ICT related modules of SSC, ACAD, e-Government Management and BCC course, and only the last two have developed considering the current reality and needs of the prospective participants.

Knowledge, Skill and Attitude preparedness for e-Governance

Computer knowledge among top level civil servant does not indicate that they are very much skilled in using computer and related device. One digital device widely used in Bangladesh is mobile cell phone. The ratio of using cell phone at all level of total population is shown in the following Table 2.

Table 2: Current status of using Cell Phone by the citizen

Name of Company Operators	Active Subscribers (million)	% of Population
Grameen Phone Ltd. (GP)	39.556	41.763
Orascom Telecom Bangladesh Limited (Banglalink)	25.622	27.051
Robi Axiata Limited (Robi)	19.652	20.748
Airtel Bangladesh Limited (Airtel)	6.086	6.425
Pacific Bangladesh Telecom Limited (CityCell)	1.685	1.779
Teletalk Bangladesh Ltd. (Teletalk)	1.391	1.468
Total	94.714	

<http://www.btrc.gov.bd/index.php/telco-news-archive/543-mobile-phone-subscribers-in-bangladesh-january-2012>, accessed on 4th September, 2012.

However, in case of using computer by senior civil servants it is basically typing. Still, senior civil servants are very much dependent on their support staff. As a result, less interest of using office computer and its application for decision making process.

In the changing world, efficient and effective civil servants are most important to ensure good governance and civil servants are the agents for implementation good governance in Bangladesh. Therefore, senior civil servants attitude towards the use and application of computer and related device has to be changed. Where, special training module on computer can be arranged to learn computer for civil servants at every office. By the assistance of Australian Government's Public Sector Linkages Program (PSLP) administered by AusAID, a project team is working for fostering ICT knowledge to enable efficient and productive government practices and better services for citizens (Gregor et al. 2008).

Under the project, intensive training and workshop is held for senior and mid-level government officials to increase knowledge and positive attitudes about ICT. This kind of knowledge and attitudes could bring benefits for their departments, in the long run for improved government services for the citizens of Bangladesh (Gregor et al. 2008). Keeping the view of implementing Digital Bangladesh by 2021, civil servants have to have sharpen their knowledge and skills on ICT and change their mindset and attitudes for the better services towards the citizens.

METHODOLOGY

Introduction

This research is based on quantitative study. This chapter elaborates the research process of this study and how this study is conducted. Drawn on primary data from structured questionnaire survey, this study took a statistical approach to examining skills and knowledge and attitudes of the senior level officers of Bangladesh under investigation of training needs for e-government.

Sampling Procedure

A structured questionnaire was administered from June, 2009 to October 2011. A total 90 questionnaires were distributed, and 72 valid questionnaires were received. Survey was done at Bangladesh Public Administration Training Centre within the Senior Staff Courses during their training period and also different ministries and other directorates and the respondents' are Joint Secretaries to the Bangladesh Government. A purposive sampling method was used for data collection.

Data collection

This study was based a great deal on primary data. Here, the study questionnaire research instrument was used for data collection.

Target Population

For this study the targeted population was drawn from the Joint Secretaries, who are working at the different capacities of Bangladesh Government. For this study the respondents are drawn from the participants of Senior Staff Course batches at BPATC.

Determination of sample size

For this study we used, Yamane (1967) formula to provide a simplified formula to calculate sample size. Formula is given below:

$$n = \frac{N}{1 + N(e)^2}$$

Where,

N= Population size, n= sample size, e= level of precision.

Survey tools and Measurement Scale

Questionnaire survey is one of the main sources of the study to collect primary data. A structured questionnaire is used for this purpose. The questionnaire comprises of several major parts having different number of questions/statements. Questionnaires were distributed to the respondents for their voluntary filling up and were received after they had filled up.

Data analysis procedure

In the data presentation, data entry and data exploration was performed. Data entry started with the development of coding plan for questionnaire items. In this regard, to define variable SPSS is used. Therefore, data have been analysed by using SPSS 11.5 windows version. Data have been analysed with descriptive statistics such as mean and standard deviation; chi-square; frequency distribution of respondents profile; respondents needs of skills and knowledge at an individual level as well as organisational level.

Analysis of scale reliabilities

Multiple scale measurement was used in this study to measure the variables. The scales included the skill needs; knowledge needs; attitude toward ICT skills and knowledge needs. To assess the reliabilities of those variables Cronbach's alpha was conducted to explore the potential for scale purification (Nunnally, 1967; Hair et al. 2010).

Factor analysis

Following many other authors (Huselid, 1995; Becker & Huselid, 1998; Ngo et al., 1998; & Fey; Bjorkman, 2001), this study adopted exploratory factor analysis method to identify the dimensions of training knowledge and skills related to e-government for senior level officials of BCS. In this approach a principal component factor analysis with VARIMAX rotation was performed with an aim to identify the factors that are essential for e-government skill and knowledge tools.

Descriptive Statistics

After the factor analysis, this study went for descriptive statistics to find out the mean, standard deviation of the identified variables from the factor analysis and also descriptive statistics of identified variables' relationship through Pearson correlation and their level of significance. This statistical approach identifies the variables' importance and impact on e-government components for the SSC contents.

DATA ANALYSIS AND RESULT DISCUSSION

Demographic Data analysis results

The respondents' of this study were drawn from Joint Secretary level officers from different ministries. The representation from different ministries was presented in the following Table 4.1. In Bangladesh there are 47 ministries and 50 departments. A total number of Joint Secretaries and equivalent officers is 430 as sanction posts. At present the number of Joint Secretaries is 625. In this study, 72 from 11 ministries were represented. The majority was from the Ministry of Public Administration. The second highest is represented from the Ministry of Home. The third one was from Ministry of Information and Communication Technology.

Table 3: Respondent ministerial distribution

Ministries/Department	Frequency	Percent %
Ministry of Agriculture	5	6.9
Ministry of Cabinet Division	2	2.8
Ministry of Commerce	7	9.7
Ministry of Defense	2	2.8
Ministry of Finance	5	6.9
Ministry of Home	12	16.7
Ministry of Science and ICT	8	11.1
Ministry of Industry	5	6.9
Ministry of Planning and Commission	2	2.8
Ministry of Public Administration	23	31.9
Ministry of Shipping	1	1.4
Total	72	

Age distribution of the respondents

The following Table 4 demonstrates age distribution of the respondents. As per tier of Bangladesh Civil Service, a Joint Secretary is at the fourth tier out of six. Of the total respondents, 87.5% is the largest age group of 51 to 55 years. 12.5% respondents are from the age group of 45 to 50 years. In Bangladesh civil service the Preparatory Retirement Leave (PRL) starts at the age of 57.

Table 4: Age distribution of the respondents

	Frequency	Percent	Valid Percent	Cumulative Percent
45-50	9	12.5	12.5	12.5
51-55	63	87.5	87.5	100.0

Length of service of the respondents

Length of service as a demographic profile of the respondent is presented in the following Table 5. Out of 72 respondents, it is found that length of service is higher at 25 to 30 years of job experience of the respondent. It is revealed that the respondents are quite senior and have good job experience.

Table 5: Respondents service length distribution

	Frequency	Percent	Valid Percent	Cumulative Percent
20-25	8	11.1	11.1	11.1
25-30	60	83.3	83.3	94.4
30-35	4	5.6	5.6	100.0

Respondents educational level

Respondent educational level Table 6 revealed that most of the respondents (86.1%) are with highest level of academic background (Master degree). The educational profile of the respondents reveals that senior level officers of government are with high educational degree.

Table 6: Respondents educational level distribution

	Frequency	Percent	Valid Percent	Cumulative Percent
Bachelor	8	11.1	11.1	11.1
Masters	62	86.1	86.1	97.2
PhD	2	2.8	2.8	100.0

Additional qualification on ICT/e-Governance

Apart from educational background the respondents were asked whether they do have additional qualification regarding ITC or e-Governance training or not. The following Table 7 reveals that very few (20.8%) are with ITC/e-governance background or knowledge. Most of the respondents (79.2%) do not have ITC knowledge or do not have undergone training on e-governance or ITC.

Table 7: Qualification on ITC/e-Governance

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	15	20.8	20.8	20.8
No	57	79.2	79.2	100.0

Scale reliability test

It is necessary for the researcher to assess and report reliability coefficients specific to this study. To test the reliability of the questionnaires, Cronbach's alpha coefficient was calculated to assess internal consistency reliability of the instruments. Among the measures of internal consistency, Cronbach's alpha is the most preferred (Ferketich, 1990).

The researcher used Nunnally and Berstien' (1994) criterion of an alpha coefficient of at least 0.70 for an instrument in its early stages of development. A coefficient of at least 0.80 was considered adequate for a further developed instrument. However, a very high alpha may be indicative of redundancy among items. Therefore, inter-item correlation was also examined. If inter-item correlations were consistently above 0.70, redundancy among items was pointed out. If inter-item correlations were consistently below 0.30, a lack of substantive relation among items was indicated (Nunnally, 1978). On completing the pilot study, the questionnaire was refined and administered to all respondents in the study.

Formula for computing Cronbach's alpha coefficient:

$$\alpha = \frac{N}{N-1} \left[1 - \frac{\sum S_i^2}{S_T^2} \right]$$

N = number of items or question in scale

$\sum S_i^2$ = summation of variance for each item

S_T^2 = variance of question

However, reliability reflects the consistency of a set of items variables scale by measuring the concept. In this study, reliability is important to verify variables consistencies through ICT skill, organization knowledge on e-government, skill on e-government and attitude on e-government management. The Table 8 is presented with variables items and Cronbach's Alpha value.

Table 8: Variable reliability Cronbach's Alpha results

Variables	No. of items	Alpha
ICT skill	12	.8491
Organization knowledge on e-government	7	.8977
Skill on e-Government	7	.9466
Attitude on e-government management	8	.5510

Descriptive Statistics pattern on ICT skills (individual level) of respondents

Some of the elementary and essential skills on ICT and computer literacy items were measured to know the skill levels of participants. These items are very important and significant for e-government managers. The descriptive value of these items has been computed as mean and standard deviation. The results found all the items' mean value is low and with high standard deviation. From the analysis it is revealed that the participants in general have poor level of ICT skills. The ICT skills of the prospective participants need to develop to a confidence level. Skill items reliability Cronbach's Alpha revealed that the questionnaire items have much consistency (Alpha value .85).

Table 9: Mean and standard deviation results for ICT skill items

Variable items	N	Minimum	Maximum	Mean	Std. Deviation
Word (MS) Processing	72	1	5	2.04	1.180
Preparing Power Point Presentations	72	1	5	2.75	1.058
Desktop Publishing	72	1	5	2.33	1.175
Database Creation	72	1	5	1.88	1.113
Statistical Analysis SPSS	72	1	5	1.81	1.096
Producing Spreadsheet	72	1	4	1.75	.835
Internet Browsing	72	1	5	2.54	1.138
Download documents from website	72	1	5	2.74	1.210
Website Development	72	1	5	2.10	1.291
Website maintenance	72	1	4	1.74	.919
Upload pages to the web server	72	1	4	1.49	.769
Insert web links	72	1	5	1.58	.960

Descriptive statistics on e-Government management knowledge at organizational level

For understanding e-government management knowledge of the Joint Secretary level official, this study measured the level of knowledge of that position, especially their knowledge on e-government management at organizational level. Here, e-government management knowledge at organizational level is measured with 7 items. The item's consistency reliability was excellent (Cronbach's Alpha value .90). Therefore, it is evident that the knowledge items are very significant and important for understanding and managing e-government. The descriptive value of those items has been computed as mean and standard deviation. It is found that the knowledge items scored less mean value and high standard deviation. The scale ranges with minimum '1' and maximum '5'. It is revealed that the Joint Secretaries have low level of knowledge in 'Concept of e-government'; 'networked government'; 'MIS and data based decision making'; 'managing intranet and web portal'; 'business process reengineering'; and 'knowledge in ICT project management'. Among those issues, their understanding and knowledge is comparatively lower in '*business process re-engineering(1.81)*', '*managing interactive web portal and intranet(1.81)*' and '*ICT Project Management(1.63)*'. Since the Joint Secretaries of government are playing a key role for formulating and implementing e-governance strategies, so they need to well equipped with essential knowledge of e-government management in organizational level.

Table 10: Descriptive statistics results on e-government knowledge items

Variable items	N	Minimum	Maximum	Mean	Std. Deviation
Knowledge in e-government management	72	1	5	1.99	1.169
Knowledge in networked government	72	1	5	2.50	1.075
Knowledge in MIS and data base in decision making	72	1	5	2.19	1.158
Knowledge in managing intranet and web portal	72	1	5	2.15	1.109
<i>Knowledge in business process re-engineering in organization</i>	72	1	4	1.81	.988
<i>Knowledge in managing interactive web portal and intranet</i>	72	1	4	1.63	.999
Knowledge in ICT project management	72	1	4	1.68	.932

Descriptive Statistics on e-Government Management skill in Organization Level

The participants were asked to rate their level of skill in managing e-government in organizational level using a structured questionnaires with 7 items. The descriptive patterns of those items are shown in the Table 11. It is assumed that the skills in *using MIS and data base in decision making, using e-Procurement for procuring goods and services for the organization, working in an automated office, re-engineering business process in own organization due to ICT introduction, providing e-Service for the citizen, using and providing interactive intranet for the clients of the organization and Managing ICT project* are essential for managing e-Government in own organization. Same variable items were measured here in Table 9 in terms of their level of knowledge and understanding. But under Table 10 items were measured for understanding their level of skill as the senior level officials responsible for implementing e-government in own organization. Here also the measurement ranges varies from '1' to '5'. Very few items of e-government skills scored more than 2 mean values out of 5. Most of the items' mean value is very poor. The results indicated that respondent's poor level of e-government management skills. Thus, knowledge and skills of those items need to be enhanced and practiced by the respondents for sound management of e-government in own organization.

Table 11: Descriptive statistics on e-Government skills

Variable items	N	Minimum	Maximum	Mean	Std. Deviation
Using MIS and data base in decision making	72	1	5	1.86	1.066
Using e-Procurement for procuring goods and services for the organization	72	1	5	2.01	1.120
Working in an automated office	72	1	5	1.76	1.081
Re-engineering business process in own organization due to ICT introduction	72	1	5	1.72	1.064
Providing e-Service for the citizen	72	1	5	1.79	1.047
Using and providing interactive intranet for the clients of the organization	72	1	4	2.10	1.050
Managing ICT project (plan and implement)	72	1	5	2.08	1.207

Descriptive statistics on attitudes to e-Government management

Table 12 shows the attitudinal behavior of the Joint Secretary towards e-government. Training is all about 'knowledge'; 'skill'; and 'attitude'. Table 9, 10, 11 is described descriptive statistical pattern of knowledge and skill regarding ICT skills and knowledge on e-government management. The following Table 11 has described attitudinal status of senior level officials of Bangladesh towards e-government management. Attitude related variable was measured with 8 items and measurement range was from '1' to '5'. They were asked to rate their perception and attitude towards the issues of *MIS and data base in decision making, e-Procurement for procuring goods and services for the organization, e-Service for the citizen, interactive intranet for the clients of the organization, ensuring transparency through e-governance, networked government, leadership quality in senior level officers of BCS for leading ICT change management and leading BPR (business process re-engineering)*. It is found from the Table-12 that all the items scored high mean value and it is revealed that the respondent's attitude towards e-government management is significantly positive and high.

Table 12: Descriptive Statistics on attitude items

Variable items	N	Mean	Std. Deviation
Using MIS and data base in decision making increases effectiveness in managerial works	72	3.15	1.642
Using e-Procurement for procuring goods and services for the organization ensures quality procurement	72	4.63	.488
Providing e-Service for the citizen ensures clients' satisfaction	72	4.64	.484
Using and providing interactive intranet for the clients of the organization reduces cost and time	72	4.61	.491
Introducing e-governance can ensure better transparency in public service delivery	72	4.68	.470
Networked government is virtually an effective and efficient government	72	4.68	.470
Excellent leadership quality in senior level officers of BCS can lead ICT change management effectively	72	4.57	.526
Sufficient managerial quality in senior level officers of BCS can lead BPR (business process re-engineering) with good exposure of e-Governance	72	4.46	.604

Mean and standard deviation pattern between the variables

Among the four major variables, the descriptive pattern of mean and standard deviation is presented in Table 13. The results revealed that ICT skills scored less mean value that indicated the training need in ICT skills is found comparatively higher. At the same time, the required knowledge in e-Government management scored less mean value that indicates the level of knowledge in e-government management is also comparatively lower. Another variable e-government skill essential for managing e-governance in organizational level also scored less mean value which indicates that respondents have limited level of skills for managing e-governance in own organization. Respondents should be given training to increase e-government skills. On the other hand, it is evident from the Table-13 that the prospective participants possess positive attitude towards e-government management.

Table 13: Descriptive Statistics on major variables for e-government

Variables	N	Mean	Std. Deviation
ICTSKILL	72	2.0613	.65780
EGOVMGT	72	1.9921	.83812
EGOVSKIL	72	1.9048	.95033
ATTITUD	72	4.4271	.36804

Correlation Analysis on observed variables

The Pearson Correlation was run to find out the relationship among all the variables and find out the degree of their association for e-government management by the Joint Secretary level government officials in Bangladesh. The results provide an understanding of the direct relationship among ITC skill of individual level (ICTSKILL), e-government management skills for organizational level (E-GOVSKIL), essential knowledge for e-Government management (E-GOVMGT) and proper attitude towards e-governance issues (E-ATTITUDE). Particularly, the attitude variable has no significant relationship with other variables.

Table 14: Relationship between the major variables

Variables	1	2	3	4
ICTSKILL	1	.394**	.356**	-.025
E-GOVMGT	.394**	1	.493**	.089
E-GOVSKIL	.356**	.493**	1	.065
E-ATTITUD	-.025	.089	.065	1

** Correlation is significant at the 0.01 level (2-tailed).

Result of factor Analysis

To identify the factors that have positive impact on e-government management by the senior officials of BCS, a detailed exploratory factor analysis has been done. To identify the contribution of individual level ICT skills, organizational level ICL skills, e-government knowledge, and attitude towards e-government as much as 34 items of variables were measured. Factor analysis was run to find out the item's communality as well as principal factors. The items were extracted with very good values which have shown in the Table 15.

Communality

Factor analysis reduces the items; 34 items are extracted and among them 28 items are found with high standard of loading values ($0.7 \geq$) that is acceptable with high level of satisfaction. Among the rest 6 factors, only one factor (B5: Statistical Analysis SPSS) found .592 loading value but for other 5 factors the table showed more than 0.6 loading values which is also high standard of confirmatory. The higher level of loading values obtained in factor analysis implied that the independent variables chosen in the research are highly representative, rationale and reliable with the e-governance management issue.

Table 15: Communalities of different variables items

Variables items	Initial	Extraction
B1: Word (MS) Processing	1.000	.823
B2: Preparing Power Point Presentations	1.000	.700
B3: Desktop Publishing	1.000	.868
B4: Database Creation	1.000	.860
B5: Statistical Analysis SPSS	1.000	.592
B6: Producing Spreadsheet	1.000	.712
B7: Internet Browsing	1.000	.760
B8: Download documents from website	1.000	.753
B9: Website Development	1.000	.820
B10: Website maintenance	1.000	.804
B11: Upload pages to the web server	1.000	.807
B12: Insert web links	1.000	.707
C1: Knowledge in e-government management	1.000	.697
C2: Knowledge in networked government	1.000	.672
C3: Knowledge in MIS and data base in decision making	1.000	.802
C4: Knowledge in managing intranet and web portal	1.000	.864
C5: Knowledge in business process re-engineering in organization	1.000	.896

C6: Knowledge in managing interactive web portal and intranet	1.000	.838
C7: Knowledge in ICT project management	1.000	.800
D1: Using MIS and data base in decision making	1.000	.772
D2: Using e-Procurement for procuring goods and services for the organization	1.000	.868
D3: Working in an automated office	1.000	.900
D4: Re-engineering business process in own organization due to ICT introduction	1.000	.862
D5: Providing e-Service for the citizen	1.000	.863
D6: Using and providing interactive intranet for the clients of the organization	1.000	.680
D7: Managing ICT project (plan and implement)	1.000	.858
E1: Using MIS and data base in decision making increases effectiveness in managerial works	1.000	.743
E2: Using e-Procurement for procuring goods and services for the organization ensures quality procurement	1.000	.678
E3: Providing e-Service for the citizen ensures clients' satisfaction	1.000	.672
E4: Using and providing interactive intranet for the clients of the organization reduces cost and time	1.000	.901
E5: Introducing e-governance can ensure better transparency in public service delivery	1.000	.726
E6: Networked government is virtually an effective and efficient government	1.000	.754
E7: Excellent leadership quality in senior level officers of BCS and lead ICT change management	1.000	.817
E8: Sufficient managerial quality in senior level officers of BCS can lead BPR (business process re-engineering) with good exposure of e-Governance	1.000	.710

Extraction Method: Principal Component Analysis.

Principal Component Analysis (PCA)

Principal Component Analysis (PCA) has given 8 factors. These are related to factor 1: 'knowledge on using ICT'; factor 2: 'knowledge on internet and web portal'; factor 3: 'presentation skill'; factor 4: 'basic knowledge and skill on ICT'; factor 5: 'leadership skill on managing ICT/e-Government'; factor 6: 'e-Service and e-Procurement for e-Government'; factor 7: 'skill and knowledge on using analytical statistical tools'; and finally, factor 8: 'knowledge on webpage maintenance.

Variance explained

PCA has given 8 factors component; all together it explained 78.17% of total variance. In respect of variance explained, eigenvalues is considered more than 1.

Table 16: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	9.275	27.280	27.280	9.275	27.280	27.280	5.840	17.176	17.176
2	4.467	13.137	40.417	4.467	13.137	40.417	4.865	14.310	31.486
3	3.827	11.256	51.673	3.827	11.256	51.673	4.520	13.293	44.779
4	2.949	8.674	60.347	2.949	8.674	60.347	3.313	9.744	54.523
5	2.442	7.183	67.530	2.442	7.183	67.530	2.833	8.333	62.857
6	1.455	4.280	71.810	1.455	4.280	71.810	2.038	5.995	68.851
7	1.149	3.379	75.189	1.149	3.379	75.189	1.691	4.974	73.826
8	1.014	2.984	78.173	1.014	2.984	78.173	1.478	4.347	78.173

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. a Rotation converged in 8 iterations.

Factor 1: Knowledge on ICT

Knowledge on ICT factor is important for e-government management that explained 27.28 percent of the variance in e-government knowledge. The eigenvalue of ICT knowledge is 9.27. The variables formed in this factor include 'MIS for decision making (.745)'; 'e-Procurement (.827)'; 'work automation (.908)'; 're-engineering business process (.905)'; 'e-Service for citizen (.720)'; 'managing ICT project (.842)'. All the extracted factors are with high correlation among the variables and observed high loading factors (Table-17).

Table 17: ICT knowledge related factors for e-governance

Variables	Factor loading	E	Percentage of variance
Knowledge on ICT		9.275	27.280
Using MIS and data base in decision making	.745		
Using e-Procurement for procuring goods and services for the organization	.827		
Working in an automated office	.908		
Re-engineering business process in own organization due to ICT introduction	.905		
Providing e-Service for the citizen	.872		
Using and providing interactive intranet for the clients of the organization	.720		
Managing ICT project (plan and implement)	.842		

Factor 2: knowledge on web portal and internet

Basic knowledge on web portal and internet is an important factor for implementation of e-government especially for the Joint Secretaries as they are responsible for decision making and policy implementation. Factor 2 'knowledge on internet and web-portal' explains 13.13 percent of the variance in e-government curriculum. The eigenvalue of knowledge on internet and web portal is 4.46. This factor is composed with 'knowledge on web portal'; 'knowledge in networked government'; 'knowledge on MIS'; 'knowledge on managing web portal'; 'knowledge on business process re-engineering'; 'knowledge on internet'; 'knowledge on ICT project management'. All these factors are of high loading value, presented in the Table 18.

Table 18: Knowledge on internet

Factors/Variables	LF	E	% of variance
Knowledge on web portal		4.467	13.137
Knowledge in networked government	.688		
Knowledge in MIS and data base in decision making	.844		
Knowledge in managing intranet and web portal	.790		
Knowledge in business process re-engineering in organization	.803		
Knowledge in managing interactive web portal and intranet	.813		
Knowledge in ICT project management	.830		

Factor 3: Skills on data base management

Factor 3 is related to skills on database management. This factor is composed with 'skills on database management'; 'skills on PowerPoint presentation'; 'desktop publishing'; 'skills on creation of database'. This factor explains 11.25 percent of total variance on skills of database for e-government curriculum. The eigenvalue of skills on database is 3.827. All the variable items are with high loading value which is presented in the Table 19.

Table 19: Skills on database management

Factor/Variable	LF	E	% of variance
Presentation skill/skill on database management		3.827	11.256
B2: Preparing Power Point Presentations	.709		
B3: Desktop Publishing	.885		
B4: Database Creation	.772		

Factor 4: Basic knowledge and skill on office package

Factor component 4 is related to 'knowledge on office package'. This factor is composed with 4 variable items, these are: 'word processing'; 'internet browsing'; 'uploading pages from the web server'; and 'using MIS in decision making'. This factor explains 8.67 percent of total variance and eigenevalue is 2.95. Variable items are of high loading values; presented in the Table 20.

Table 20: knowledge on office package

Factor/Variable	LF	E	% of variance
Preliminary knowledge and skill on office package		2.949	8.674
B1: Word (MS) Processing	.852		
B7: Internet Browsing	.741		
B11: Upload pages to the web server	.597		
E1: Using MIS and data base in decision making increases effectiveness in managerial works	.580		

Factor 5: Leadership skill on managing ICT and e-Government

Factor component five is related to leadership skills on managing e-government. This factor is composed with 4 items. These are: 'e-governance for better transparency'; 'leadership quality for managing ICT and change management'; 'sufficient managerial quality for business process re-engineering'. The magnitude of those variable items are '.700'; '.868'; and '.677' respectively. This factor explains 7.183 percent of total variance and eigenevalue is 2.44. Variable items are of high loading values; presented in the Table 21.

Table 21: Leadership skills on e-government

Factor/Variable: Leadership skills on managing ICT and e-government	LF	E	% of variance
		2.442	7.183
Introducing e-governance can ensure better transparency in public service delivery	.700		
Excellent leadership quality in senior level officers of BCS and lead ICT change management	.868		
Sufficient managerial quality in senior level officers of BCS can lead BPR (business process re-engineering) with good exposure of e-Governance	.677		

Factor 6: e-Service and e-Procurement skills

The outcome of e-government is to render goods and services to the citizens at minimum time and cost. e-Governance is one of the important means for ensuring the good governance in Bangladesh. The senior level civil servants of Bangladesh has specific role to contribute for ensuring good governance. PCA has rightly extracted a factor which is related with 'e-Service and e-Procurement'. Therefore, this factor is very important to incorporate in SSC curriculum. This factor explains 4.28 percent of total variance and the eigenvalue is 1.45. This factor composed with 'using e-Procurement for procuring goods and service for the organization for ensuring quality procurement' and 'using and providing interactive intranet for the client of the organization for reducing cost'. These items are also with high loading value, presented in the Table 22.

Table 22: Skills on e-Service and e-Procurement system

Factor/Variable: Knowledge on e-Service and e-Procurement	LF	E	% of variance
		1.455	4.280
E2: Using e-Procurement for procuring goods and services for the organization ensures quality procurement	.583		
E4: Using and providing interactive intranet for the clients of the organization reduces cost and time	.901		

Factor 7: Skills and knowledge on different statistical packages

Skills and knowledge on different statistical packages for analyzing data is important for decision making. Therefore, this factor is also important for SSC curriculum. This factor is composed with 'skills and knowledge on statistical tools'; 'statistical package like SPSS'; 'producing spreadsheet'. This factor is explained with 3.37 percent of total variance. The eigenvalue of this factor is 1.14. All these variable items are with high loading values; presented in Table 23.

Table 23: Knowledge and skills on statistical packages

Factor/Variable: Skill and Knowledge on statistical tools	LF	E	% of Variance
		1.149	3.379
Statistical Analysis SPSS	.547		
Producing Spreadsheet	.749		

Factor 8: Skills on webpage domain maintenance

Webpage domain is important for every organization to implement e-government for delivering goods and services. There is a website in every organization of public sector. The organizational website is considered as the window of the organization. It is an important means to inform vision, mission, service delivery process, citizen charter etc. So, as the leader of the organization, the prospective participants of SSC course must have preliminary knowledge on webpage and portal management. This factor contains the eigenvalue of 1.014 and the variance of 2.984 percent (Table 24). This factor is formed with only one factor, which has high loading value.

Table 24: Skills on webpage maintenance

Factor/Variable: Skills on webpage maintenance	LF	E	% of Variance
		1.014	2.984
Website maintenance	.783		

CHAPTER FIVE

CONCLUSION AND RECOMMENDATION

Joint Secretaries to the government are working as the senior leadership positions in public organizations. They have specific role to play in planning, implementing, managing and maintaining of e-governance system in own organization. They have specific role to assist in formulating public policy as well as implement those strategies and policies. The technical aspects are obviously are the business of technical people but as the senior managers of the organization; they must have minimum knowledge and skills in e-government management.

Under this study, a rigorous attempt was taken to identify the training need for the senior managers of civil service. In that connection, training curriculum has to be formulated considering their role in the organization. The study also considered the vision of the government: the Digital Bangladesh.

The study specifically aimed at identifying the training needs of the participants of Senior Staff Course. Under this study a close ended structured questionnaire is used to identify their level of skills, knowledge and attitude on ICT as well as e-government management. It also attempted to identify what sorts of skills, knowledge and attitudes are required for the senior level civil servants to manage and implement e-government in their own organization. As per their need analysis, SSC curriculum on e-government module would be modified. The research outcome also can be used for formulate new special or short course for them.

In this study, 58 items were included in a structured questionnaire related to demographic information as well as e-government and ITC related skills, knowledge and attitudes. In order to reduce and separate questionnaire items which do not have high correlation and loading value, Principal Component Analysis (PCA) is used with the help of statistical tools called SPSS. Therefore, Principal Component Analysis (PCA) was used to identify the factors and reduce the number of items. PCA has given 8 major/principal factors.

On the basis of analysis done in previous chapters, the following recommendations are set out for consideration in modifying the ICT related module of SSC:

1. **Training Need for Individual Level Skills:** From the study, it is evidently revealed that the levels of individual skills of the prospective participants are poor. They need to undergo practical training on Word (MS) Processing, Preparing Power Point Presentations, Desktop Publishing, Database Creation, Producing Spreadsheet, Internet

Browsing, Download documents from website, Website Development, Website maintenance, Upload pages to the web server and Insert web links.

2. **Training need for e-Government Management Knowledge:** The prospective participants must have sufficient knowledge on techniques and process of e-Government management in organizational level. But from the analysis it is revealed that the Joint Secretaries have low level of knowledge in 'Concept of e-government'; 'networked government'; 'MIS and data based decision making'; 'managing intranet and web portal'; 'business process reengineering'; and 'knowledge in ICT project management'. Since the Joint Secretaries of government are playing a key role for formulating and implementing e-governance strategies, so they need to well equipped with essential knowledge of e-government management in organizational level.
3. **Training need for e-Government Management Skill:** From the analysis done in previous chapter, the it is evident that the skills in *using MIS and data base in decision making, using e-Procurement for procuring goods and services for the organization, working in an automated office, re-engineering business process in own organization due to ICT introduction, providing e-Service for the citizen, using and providing interactive intranet for the clients of the organization and Managing ICT project* are very poor. So, their level of skill in management of e-government in own organization must be enhanced to the professional level.
4. **Developing Leadership Quality for Managing ICT and e-Government:** Above all leadership quality has to be developed for the senior level government officials. Leadership skills are required for managing ICT, e-government and change management. This component is to be segmented into 'skills and knowledge on transparency'; 'knowledge on managing ICT and change management'; and 'managerial skills on business process re-engineering'. Therefore, e-government management curriculum for the SSC will consider those items as course contents.
5. **Major Areas for Intervention (Must Learn Areas):** From the Principal Component Analysis, the following components are found very important for the prospective participants. Those are 1:'knowledge on using ICT'; 2:'knowledge on internet and web portal'; 3: 'presentation skill'; 4: 'basic knowledge and skill on ICT'; 5: 'leadership skill on managing ICT/e-Government'; 6: 'e-Service and e-Procurement for e-Government'; 7: 'skill & knowledge on using analytical statistical tools'; and 8: 'knowledge on webpage maintaining'. So, in developing the e-Government Management module for the SSC course those factors can be considered as the areas of **Must Learn**.

6. Managerial Implications:

- a. ***Introducing Short Course:*** Considering the training needs in e-Government management, BPATC could formulate a short course with two weeks duration for the senior officers of Bangladesh Civil Service.
 - b. ***Modification of ICT related Existing Module of Senior Staff Course:*** The existing ICT related module of Senior Staff Course is not sufficed to fulfill the needs of the participants. The existing module of SSC covers some areas of preliminary skills of ICT. So, on the basis of research findings, the existing module should be modified.
7. **Limitation:** This study has been done with questionnaire survey only and the sample size was not much bigger. Mostly survey was done with the SSC participants who came for training at BPATC. Also it was single way survey; Joint Secretaries supervisors (Additional Secretaries or Secretaries) are not consulted to validate their e-government training needs.
8. **Future Research Direction:** The sample was drawn mostly from the Joint Secretary level officers. Therefore, triangulation of data validation was missing and sample size was small. Thus, next research could be done with large sample size with validation Joint Secretaries training needs and with data collection from Additional Secretaries as well as Secretaries.

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Annexure-A: Questionnaire

QUESTIONNAIRE FOR TNA OF SSC ON e-GOVERNANCE

This questionnaire is a part of research, has been designed to determine the e-Governance training needs of Participants of Senior Staff Course (Government officers at Joint Secretary level). The information gathered with this questionnaire will only be used for determining the needs at senior level officials of Bangladesh government for implementing e-governance. Mentioning name is optional. You are requested to be sincere in filling up the questionnaire. Your responses are very important to us.

Part: A: Respondents' Profile

The following statements ask about respondents' and her/ his organizational profile.

1. Name of the office:

.....

2. Age: years.

3. Length of service in the public sector: years.

4. Highest Educational Degree attained (please tick):

☐ Bachelor ☐ MBA ☐ Master's ☐ PhD

☐ Others (please mention).....

5. Do you have any additional qualification on "ICT/e-Governance"?

(1) No

(2) Yes

If yes, please mention.....

6. Have you received any training on ICT or e-governance?

(1) No

(2) Yes

If yes, Please mention.....

Part: B: Respondents' level of skill in using ICT (Individual Skill)

Please specify your level of skill in using ICT	Non-user	Occasional user	General User	Confidant user	Professional User
	1	2	3	4	5
Word (MS) Processing					
Preparing Power Point Presentations					
Desktop Publishing					
Database Creation					
Statistical Analysis using SPSS					
Producing Spreadsheets					
Internet Browsing					
Download documents from website					
Website Development					
Website maintenance					
Upload pages to the web server					
Insert web links					

Part-C: Respondents level of knowledge in e-Government management (Organizational)

Please specify your level of knowledge in e-government management in your organization	Not at all	To some extent	Average	Well	Very well
	1	2	3	4	5
Knowledge in e-government management					
Knowledge in networked government					
Knowledge in MIS and data base in decision making					
Knowledge in managing intranet and web portal					
Knowledge in business process re-engineering in organization					
Knowledge in managing interactive web portal and intranet					
Knowledge in ICT project management					

Part-D: Respondents' Need for e-Governance skill (Organizational)

Please specify your level skill in e-government management in your organization	Non-user	Occasional user	General User	Confidant user	Professional User
	1	2	3	4	5
Using MIS and data base in decision making					
Using e-Procurement for procuring goods and services for the organization					
Working in an automated office environment					
Re-engineering business process in own organization due to ICT introduction					
Providing e-Services for the Citizen					
Using and providing interactive intranet for the clients of the organization					
Managing ICT project (plan and implement)					

Part-E: Respondents' attitude towards e-government management

Please specify your level of attitude/perception in e-governance	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	1	2	3	4	5
Using MIS and data base in decision making increases effectiveness in managerial works					
Using e-Procurement for procuring goods and services for the organization ensures quality procurement					
Providing e-Services for the Citizen ensures client's satisfaction					
Using and providing interactive intranet for the clients of the organization reduces cost and time					
Introducing e-governance can ensure better transparency in public service delivery					
Networked government is virtually an effective and efficient government					
Excellent leadership quality in senior level officers of BCS can lead ICT change management					
sufficient managerial quality in senior level officers of BCS can lead BPR (business process re-engineering) with good exposure of e-Governance					

Thank you for your kind and sincere response.

Annexure-B: Contents of ICT related module of ACAD (based on 86th ACAD)

Module 10 : **Information and Communication Technology**

Module Director : **Md. Saiful Islam (DD, MIS)**

Evaluation : **Practical (80) and MCQ (20)**

Objectives : Participants will be able to:

1. Use Microsoft Word, Power Point, Excel;
2. Data processing, data analysis, information management and Presentations;
3. Browse internet, e-mail etc.

Topic No	Topic Title	Resource Person	Training Method
ICT 10.1-2	Digital Bangladesh	Faculty/GS	Lecture & Exercise
ICT 10.3-4	Introduction to ICT, Basic Hardware Components and Operating System	Ziaul/Joarder	
ICT 10.5-6	MS Word	Zakir/Mofazzal	
ICT 10.7	Internet & E-Mail	Rokon/Monir	
ICT 10.8-9	MS Power Point	Zakir	
ICT 10.10-11	MS Excel	Saiful(DD) /Zobayer	
ICT 10.12-13	Trouble Shooting	Ziaul/Joarder	
ICT 10.14	Data base & MIS	Rokon/Saiful(DD)	Self-Learning
ICT 10.15-18	Practice Sessions	Zakir/Joarder	

Annexure-C: Contents of ICT related module of ACAD (based on 54th SSC)

Module 8: Information and Communications Technology (ICT)

Module Director: Zahid Hussain Ponir

Evaluation: Theoretical Exam (20), Practical Exam (80)

Objectives:

Enable the participants to:

- use computer for word and data processing, data analysis, information management, presentation, communication and exploring internet;
- identify areas of and scope for integration of ICT in public administration;
- explain the basic concepts of e-governance; and its national and international perspectives; *and*
- explore opportunities to introduce and utilize e-governance tools in their respective organizations.

Topic	Topic Title	Speaker	Training Method
8.1	Introduction to ICT and the Concept of Digital Divide	Sanaul/Zia	Instruction & Practice
8.2	Basic Hardware Components and Operating System	Zia/Tanjur	
8.3-6	MS Word	Zakir/Monir/sabet	Instruction & Practice
8.7-8	Internet	Enam/Sabet	Instruction & Practice
8.9-10	E-Mail	Altab/Mahbub	Instruction & Practice
8.11-13	MS Power Point	Sabet	Instruction & Practice
8.14-15	MS Excel	Sabet/Saiful	Instruction & Practice
8.16	Networking	GS/Zia	Instruction & Practice
8.17	Trouble shooting	Tanjur/GS	Instruction & Practice
8.18	Database and MIS	Enam/Saiful	Instruction & Practice
8.19-20	E-Governance	Sanaul/GS	Group work
8.21-22	Practice		Individual Practice

Annexure-D: Contents of e-Governance Management Course (based on 9th Course)

1. Purpose of the Course

The overall aim of the course is to develop competency in information communication technology (ICT) management and e-Government in a public sector environment in Bangladesh. This aim will be achieved by developing competency in three areas in this context:

- a) Knowledge of the use ICT and its benefits in e-Government in Bangladesh;
- b) Knowledge of essential ICT systems and technology;
- c) Knowledge of strategic ICT management.

2. Learning Outcomes

On completion of this course the participants will be able to:

- i) Understand the nature of e-Government and key issues relevant to public sector ICT management.
- j) Recognize opportunities for using IT and web-base systems in e-Government
- k) Participate in strategic planning for e-Government systems, with the understanding that investment in ICT should be aimed at getting clear and identifiable benefits.
- l) Understand the nature of poor ICT systems in e-Government
- m) Institute appropriate governance procedures in planning for ICT, managing ICT projects, monitoring, controlling and reviewing the use of ICT resources in e-Government
- n) Communicate and negotiate with ICT professional and vendors as the public sector counterpart.
- o) Engaged in discussion and debate on key issues relating to e-Government, including ethical and social issues.
- p) Understand the global and Bangladesh perspective of e-Governance.

3. Course Duration

04 September – 01 October, 2012

4. Relationship between Learning Outcomes and Assessment

This table shows how each assignment will check achievements against the stated learning outcomes for the course.

Course Learning Outcomes On satisfying the requirements for this course, students will have the knowledge and skills to:	Individual Assignment	Quiz Test	Project work	Exam
Understand the nature of e-Government and key issues relevant to public sector ICT management	√	√		√
Recognize opportunities for using IT and Web-base systems in e-Government	√		√	
Participate in strategic planning for e-Government systems, with the understanding that investment in ICT should be aimed at getting clear and identifiable benefits	√		√	
Understand the nature of poor ICT systems in e-Government		√		√
Institute appropriate governance procedures in planning for ICT, managing ICT projects, monitoring controlling and reviewing the use of ICT resources in e-Government			√	√
Communicate and negotiate with ICT professional and vendors as the public sector counterpart	√		√	
Engaged in discussion and debate on key issues relating to e-Government, including ethical and social issues.			√	√

COURSE CONTENTS

Module-01 : e-Government

Module Coordinator : Md. Saiful Islam(DD) and Dr. Ahmed Imran

Evaluation : Individual Assignment, Quiz Test, Group Project, Written Examination and Practical Tests

Schedule of Topics

Chapter	Topic	Hours	Teaching Responsibility	Training Method
PART A – Introduction				
1	Introduction	3	Mizan/Rokon/GS	Lecture and Discussion
2	e-Government	3	Saiful (DD)/Rokon/Imran(GS)	L&D
Part B – e-Government Architecture				
3	e-Government Architecture and Systems	3	Saiful (DD)/Altab/Imran(GS)	L&D
4	Networked Government	3	Ziaul	L&D
5	Data Management	3	Altab/ Saiful (Prog)	L&D
6	Enterprise Systems (e-	3	Faculty/Ranjan(GS)	L&D

	Procurement, Supply Chain Management, Financial Services, Enterprise Resource Planning Systems (ERP)		/Zakiul (GS)	
7	Citizen Services	3	Atikuzzaman/GS	L&D
8	Security and Privacy	3	Ziaul/ Saiful (Prog)	L&D
Part C – Implementing e-Government Systems				
9	ICT Investment Management and Developing a Business Case	3	Faculty/GS	L&D
10	Systems Building & Acquisition	3	Joarder/ Farhana(GS)	L&D
11	IT Project Management	6	Zakir/Rowly(GS)	L&D
Part D – Managing e-Government				
12	Operations Management	3	Faculty/Sanaul(GS)	L&D
13	IT Governance	3	Faculty/Sanaul(GS)	L&D
14	People and Organizational Issues	3	Faculty/GS	L&D
15	Political, Legal, Ethical and Environmental Issues	3	Mizan/Imran(GS)	L&D

Module-02 : Information Technology

Module Coordinator : Md. Saiful Islam(Prog) and Mohammad Altab Hussain

Evaluation : Individual Assignment, Quiz Test, Group Project, Written Examination and Practical Tests

Schedule of Topics

Part-A : Essential ICT Skill

Subject ID	Subject /Area	No. of Sessions	Speaker	Training Method
1.1	Operating System	1	Joarder/ GS	Lecture and Practice
1.2	ICT Policy in Bangladesh	1	GS	Lecture
1.3-4	Digital Signature	2	GS	Lecture and Practice
1.5-6	Creating folder, documents, layouts, save documents, formatting, bullets & numbering, alignments, case change, textbox, picture, word art, table formatting by using Word Processing Software	2	Zakir/ Altab	Lab Work
1.7-8	Creating slides, rearrange slides order, design template, background animation, picture, slide transition, action button and chart by using Power Point Presentation Software	2	Altab/ Obaidullah	Lab Work
1.9-10	Tools, formatting, creating formulas, order of operations chart by using Spreadsheet Analysis Software	2	Saiful(DD/ Prog)	Lab Work
1.11-12	Browsing website, searching, advanced searching, creating, opening an e-mail account, composing, sending, receiving mail, attachments & other advanced options	2	Rokon/ Altab	Lab Work

Part-B : Database Management System (MS Access)

Subject ID	Subject / Area	No. of Sessions	Speaker/ Resource Person	Training Method
2.1	Introduction	1	Enam/Saiful (DD/Prog)	Lab Work
2.2	Creating and opening databases	1	Enam/Saiful (DD/Prog)	Lab Work
2.3	Data types, data insertion and validation	1	Enam/Saiful (DD/Prog)	Lab Work
2.4-5	Queries, data access from multiple tables through queries	2	Enam/Saiful (DD/Prog)	Lab Work
2.6-7	Generating Reports	2	Enam/Saiful (DD/Prog)	Lab Work
2.8-9	Database Design	2	Enam/Saiful (DD/Prog)	Lab Work

Part-C : PC Hardware and Troubleshooting

Subject ID	Subject / Area	No. of Sessions	Speaker/ Resource Person	Training Method
<i>Hardware</i>				
3.1	Description of different hardware components of a computer	1	Joarder	Lab Work
3.2	Installation, auto hardware detection and assembling	1	Joarder/GS	Lab Work
<i>Troubleshooting</i>				
3.3	Identify hardware and software problems	1	Faculty/GS	Lab Work
3.4	Solution of hardware and software problems	1	Faculty/GS	Lab Work
3.5	Solution of network related problems	1	Faculty/GS	Lab Work

Part-D : Networking

Subject ID	Subject /Area	No. of Sessions	Speaker/ Resource Person	Training Method
4.1	Basic networking hardware and software	1	Ziaul	Lab Work
4.2	Network media	1	Ziaul	Lab Work
4.3-4	IP addressing	2	Ziaul/Joarder	Lab Work
4.5	Data sharing	1	Ziaul/Joarder/GS	Lab Work
4.6	Network management and Security	1	Ziaul/GS	Lab Work