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E-governance for Social Development in Bangladesh: An Analysis on the Policies, Programmes and Impacts

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Abstract

Application of electronic means in the daily businesses of the government is transforming the socio-economic conditions of the citizens globally. It is observed and documented that the development of e-governance in developed and developing countries is not following equal pace. Bangladesh, compared to other developing countries has achieved remarkable progress in the application of information and communication technologies in the general business process of the government with a view to achieving the goal of sustainable socio-economic development. The focus of this paper is to study the e-governance development throughout the countries in terms of policies, programmes and impacts- particularly on social development. The secondary source-based study will be keen to measure the progress of several valid social indicators for the initiatives and development of e-governance in Bangladesh. This paper ends up with a set of policy options to guide government actions on e-governance to promote social development of the country.

Key Words: E-governance, Social Development, Social Indicators, Capability

1.0 Introduction

Modem information and communication technologies (ICTs) have offered the ways for faster and better communication, efficient data processing, storage and retrieval can ease the exchange and utilisation of information within and outside government agencies, businesses and citizens. The faster and accurate way of data processing and tabulation helps greatly for efficient decision making in governance (Turban and Volonino, 2010, p.3; Imran and Gregor, 2005). Faster expanding computerisation and internet

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connectivity has attracted governments to re-engineering of business processes for quicker and quality service delivery to citizen, business and the society ensuring wider coverage, optimum resource unitisation as well as good governance (Government of India, 2008, p.7; Pudjianto and Hangjung, 2010). Wagener (2004) showed that good governance ensures sustainable economic growth and social welfare, It can be said that adoption and appropriate use of modem ICTs by the government have significant influence on social welfare. Social development is intertwined with social welfare (Midgely, 2003). Therefore, the use of ICTs in governance has remarkable influence on social development.

The aim of this paper is to identify and explain the role of e-governance in social development of Bangladesh based on the government's policies, programmes taken and implemented by different government actors and their impacts on social development. The paper is mostly based on secondary 'sources of information as books, reports, printed and online journal and newspaper articles, web resources of the related governments and organisations. Yet, some information used in this paper is collected through observation. This paper will critically examine the adoption of information and communication technologies by the Government of Bangladesh in the light of different development paradigms. The impacts of e-governance initiatives on social development will be explained in the field of employment and livelihood, communication, education, health and nutrition, women empowerment, environment and disaster management, and social service for vulnerable and disadvantaged groups of the society using the best practice outcome of prominent social indicators. Simultaneously as the policy is concerned, this paper will analyse the e-governance expansion in Bangladesh with the help of best practice e-government maturity models and relate those stages to the social progress.

This paper has discussed about the concepts of e-governance and social development in different dimensions along with suitable definition in respect to Bangladesh. This paper has also discussed the socio-economic situation of Bangladesh to exibit a clear idea

about the social development and review important social indicators that can be used to evaluate the impacts of e-governance initiatives on social development in Bangladesh. The paper is very keen to use valid secondary sources in evaluating the e-governance impacts on social development as the scope of direct impact assessment through primary data collection is very limited. Additionally this paper ends up with a set of policy options for furthering e-governance policy and programme initiatives for social development in Bangladesh.

2.0 Demystifying key concepts

2.1 E-governance

E-governance appeared as a term in literatures of Government Studies in the mid-1990s. E-government and e-governance may be seemed similar to many people, but in the true sense e-governance is the outcome of e-government. World Bank (2011, online) says that e-governance is the use of ICTs by the government to transform the relations with citizens, businesses, and other organs of government. This definition suggests re-designing government's business process to interact efficiently with businesses, citizens and among the government organs. UNESCO (2010, online) says that the aim of the e-governance is to use of ICTs in government activities to facilitate information and service delivery, motivating people to participate in democratic processes, ensuring efficiency, accountability and transparency in governance. It is seen that both the definition has a clear focus on citizens' welfare, which is essential for social progress. In this essay e-governance will mean the use of ICTs by the government for efficient interaction with citizens (G2C), businesses (G2B) and within the organs of the government (G2G) to ensure transparency and accountability in governance to foster democratic participation, social justice and welfare.

2.2 Social Development

Social development emerged in the decade of 1950s as a concept

and approach. Massive development needs generated from the post-World War II, such as food, housing, healthcare and rehabilitation of the war disrupted nations and failure of tickle-down theory of economic growth to achieve overall development goals for various nations, particularly the developing countries made ground for flourishing the concept of social development as a complementary to the economic development initiative (Midgely, 1984). According to UNRISD (2011, p.2), social development involves the process of change to improve human well-being, social relations and social institutions for equitable and sustainable progress, democratic governance and social justice. Midgley (1995, p.25) says that social development is a 'planned social change' to promote well-being of the citizen. In this essay social development will mean the process of planned social change for ensuring well-being of the citizen, social equity and democratic practices.

3.0 Indicator for measuring social development

Substantial work has been done on defining and developing indices for measuring social progress. Australian Bureau of Statistics defined social indicators as *"measures of social well-being which provide a contemporary view of social conditions and monitor trends in a range of areas of social concern over time"* (McEwin, 1995 as cited in Noll, 2002, p.3). United Nations defined social indicators as *"statistics that usefully reflect important social conditions and that facilitate the process of assessing those conditions are used to identify social problems that require action, to develop priorities and goals for action and spending, and to assess the effectiveness of programmes and policies"*(United Nations, 1994, online). Apart from the general goal of refining the information base of societies, two basic functions of social indicators have to be illustrous: monitoring of social change and measurement of individual and societal welfare. The primary function of social indicators can be regarded as a measurement of levels, distributions and changes in individual and societal welfare. Increment of welfare has been considered as a specific dimension

of the widespread process of modernisation (Zapf, 1993 as cited in Noll, 2002, p.3). Social Development indicators are needed as measures of welfare or quality of life that exhibits features as (1) individuals or private households are separate from social aggregates; (2) they are societal goal oriented and (3) they measure the output, not the input of social processes or policies. Social indicators always have a direct normative relationship as welfare indicators and any one can interpret changes in indicators equivocally as increment or relapse of well-being or quality of life (Noll, 2002, p.3).

There are several indicators to measure social development as well as human development locally and globally. Physical Quality of Life Index (PQLI) was developed by Morris and colleagues at the Overseas Development Council in Washington DC in mid-1960s, which consists of infant mortality, life expectancy at the age of one and basic literacy. PQLI is rarely used as a measure of monitoring social development (Estes, 2005, pp.208-15). Basic need based social indicators was developed by International Labour Organisation in 1970s based on the measure of food, clothing, housing, education and public transportation (Emmirij, 2010, pp.1-3). This approach assumed that economic growth can ensure the meeting of basic needs, which is not proved practically almost in all countries of the world. It is evident that not the economic growth, but the distribution of economic growth among citizens is more relevant to meet the basic needs. To overcome the difficulties of basic need approach, the United Nations declared a new yardstick as Millennium Development Goals to measure societal progress in 2000 setting targets on reducing poverty and hunger, providing universal education, promoting gender equity, ensuring child and maternal healthcare, combating HIV/AIDS, achieving environmental sustainability and global partnership in development activities by the year 2015. Yet, MDGs are rather ends, not indicators of social progress as the evaluation of the achievement of MDGs required a measure to assess.

The most significant effort to analyse the comparative status of socio-economic development systematically and comprehensively

undertaken in Human Development Reports by the UNDP in 1990 termed as 'Human Development Index (HDI)'. The HDI ranked countries on a scale of 0-100 based on three goals or products of development as (a) longevity as measured by life expectancy at birth; (b) knowledge as measured by a weighted average of adult literacy (213) and mean years of schooling (113); and standard of living measured by real per capita GDP adjusted for the differing purchasing power parity (PPP) of each country's currency to reflect cost of living and for the assumption of diminishing marginal utility of income (Todaro and Smith, 2009, pp.49-50). HDI is an objective measure and it evaluates well-being of a country or a particular area as a whole. The HDI is recognised as an authentic measure for human development as well as social development all over the world. In recent years HDI shifted focus to Amartya Sen's capability approach to refine the indices that posits concepts of well-being and the agency aspects of human development as political and social empowerment of citizens (Fukuda-Parr, 2003, p.3). The present paper will use the capability approach to identify the impacts of e-governance on social development in Bangladesh. More specifically, it will be discovered how much people are capable to get access to government information and services through electronic means and interact accordingly and change their standard of living as well as enhanced their respective capabilities.

4.0 Socio-economic scenario of Bangladesh

Bangladesh is a sovereign state located in the South Asia. It is bordered by India, Myanmar and by the Bay of Bengal to the south. It has a population of 142.3 million within the geographical area of 147570 square kilometres, ranked as a most densely populated countries in the world (BBS, 2011, p.3). It is evident from a welfare monitoring survey (BBS, 2009, pp.2-5) that in Bangladesh about 8% of people living in brick built houses, 20% are in semi-drick built houses and the rests are in houses with high risk exposed to weather events as droughts, rains, storms, floods. About half of the population in Bangladesh can use electricity and the concentration is more in urban areas. One-third of the total

population is not under the coverage of sanitation and safe water and there is a sharp difference in the rural and urban areas. Moreover, the condition of sanitation and safe water uses in the urban slum areas are the worst among them. Two-third of the total households has some furniture for daily uses. About half of the households have mobile phones and 2% have land phones and 80% households have televisions or radios. Surprisingly, 1.9% households reported to have own computer with a high rural (0.5%) and urban (6.4%) disparity. Report on the Bangladesh Literacy Survey 2010 (BBS, 2011) showed that 55.08% of the population are functionally literate. About 10% of the total labour forces are unemployed. Among the employed labour force 48.4% are working in agriculture, 24.3 in industry and 14.2 in service sector. About 25% of the total population are living with less than a dollar a day (GoB, 2011). The health situation of the population shows that 89.3% children have been covered under vaccination programme. It is encouraging that 74.3% women of reproductive age got antenatal care, yet the birth in health facility was only 18.7%. About 80% population have been registered under birth registration programme and life expectancy at birth is 62 years (GoB, 2011). As regard to food security 60.2% households reported that food is secured while the rest mentioned about food insecurity (BBS, 2009, pp.3-5). About 70% household decisions are taken jointly by husband and wife, while 29% decisions are taken by the husbands (BBS, 2009, p.5).

5.0 E-governance initiatives in Bangladesh

5.1 Government's Activities

Uses of computer aided application in the public sector management was introduced in 1980's with a very limited scale to provide support for senior and specialised management through report generation, maintenance of payroll, accounts and budgets. The use of computers in public offices during that time was proliferating as an efficient substitute of traditional typewriter and also to preserve and retrieve official records of correspondence (Hoque, 2005). The Public Administration Reform Commission

suggested for 'Electronic Government' for better public service delivery through adopting modem information and communication technologies in public sector management. This report also emphasises on the customer service delivery by different government organs through preservation of all necessary information in computer systems from where a customer can get the desired information easily within a possible minimum time (Hoque, 2005).

5.1.1 Policies

Government of Bangladesh primarily adopted National Information Technology Policy in 2002 with a view to introduce 'e-governance' in Bangladesh. This policy fixed up an ambitious target to make Bangladesh an information technology driven nation by the year 2010. It also manifested to develop nationwide information technology infrastructure to ensure access to information by every citizen of Bangladesh to foster empowerment of the people and enhance democratic norms and values for sustainable socio-economic development (GoB, 2002). This policy devised some strategies to achieve the goals as to facilitate private enterprises in ICT sector, development of legal framework for expansion of e-governance and e-commerce to ease the lives of the common people and ensure social welfare.

Bangladesh adopted National ICT Roadmap in 2008 with a vision of using information and communication technologies to become a middle income country, establish a transparent, responsive and accountable government, enhance social security and ensure cost effective delivery of citizen services through public-private partnership within ten years. Proposed starting date of the ICT roadmap was 1 January 2009. This roadmap encompasses all aspects of governance and chalked out possible programmes of using information and communication technologies to transform society through digital interaction among government agencies (G2G), government and business, (G2B) and government and citizen (G2C) (GoB, 2008, pp.1-3). The strategies taken in the ICT

roadmap mostly focused on achieving social goals. The major thirst of these strategies mentioned in the roadmap is to transform traditional government, business and social institutions through the uses of information and communication technologies. It also recognised that information and communication technologies can be used as a driving force for socio-economic development of Bangladesh. Moreover, the roadmap also acknowledged the role of private sector in terms of programme implementation and investment in development of the e-governance infrastructure through public-private partnership and outsourcing some services of government to private organisations for quick and efficient service delivery and suggested to limit the role of government as facilitating and not to regulating concerned activities.

In the true sense there was no review on the compliance of the policy of 2002 with the activities taken by the government. Moreover, another new policy named "Bangladesh Information and Communication Technology Policy 2009" was adopted with a set target to establish transparent, accountable and responsible government, ensuring development of skilled human resources, enhancing social equity, ensuring low cost services through efficient public-private partnership and making Bangladesh a middle income country by the year 2021, in the eve of the 50 years of its independence through expansion of multi-purpose uses of information and communication technologies (GoB, 2009). This policy set up 10 specific objectives as social equity, productivity in agriculture, service and industry, national and racial integrity, education and research, employment generation, strengthening exports, healthcare and nutrition, universal access to information, environment, climate and disaster management, and support to information and communication technologies. Strategies of this policy also matched with both deregulation and state intervention synchronously. Unlike these ICT policies, there are some policies taken by the government to promote education, research, healthcare and nutrition, and protection of women, children and disabled person also manifested the optimum use of information and communication technologies for implementing programmes

respectively for social development. Government of Bangladesh enact Right to Information Act in 2009 to ease citizens' access to digital information sources (GoB, 2009a).

5.1.2 Programmes

5.1.2.1 Publishing Websites

Government of Bangladesh is implementing e-governance programmes through different agencies and all activities are coordinated by Access to Information (A2I) Programme of Prime Minister's Office assisted by UNDP. The Government is implementing various programmes to make Bangladesh digital by the year 2021. Government's all ministries, divisions, departments and specialised and autonomous organisations published their respective websites containing necessary information. District Administration is the main focus of government's e-service delivery programmes and functional website was published by the 64 administrative districts of Bangladesh. Website developing for the urban local government unit as municipality and rural local government units as Upazila (Sub-district) and Union Council are going on (Cabinet Division, 2013, online).

5.1.2.2 Establishing e-centres

Local Government Division of Ministry of Local Government, Rural Development and Cooperatives is established Union Information and Service Centres (UISC) in all Union Councils of Bangladesh where a citizen can get various internet related services including video calling facilities. Bangladesh Computer Council set up Upazila E-centres in all Upazilas of Bangladesh with five internet-connected computers for providing internet facilities to the citizen. Ministry of Education with the help of Bangladesh Computer Council established E-centre-cum-Computer Laboratories in five rural secondary high schools for educating the school students and providing IT services to the citizens in each Upazila. District and Upazila Administrations are already computerised with internet-connections (Prime Minister's Office, 2013, online).

5.1.2.3 Human Resource Development

Bangladesh Computer Council, Bangladesh Public Administration Training Centre (BPATC), Bangladesh Civil Service Administration Training Academy, Bangladesh Administrative Services Association (BIAM) Foundation and various other government organisations and educational institutions are working to develop required human resources in government and private sectors for better ICT service delivery.

5.1.2.4 Infrastructure Development

Ministry of Post and Telecommunication is working to develop nationwide telecommunication infrastructure through modem fibre-optic cables for faster data transfer. Presently all land connected Upazilas are under fibre optic networks and other island Upazilas are connected through microwave links.

5.1.2.5 Content development

Government is working to develop multimedia content for internet-based learning in primary, secondary and tertiary levels of education to promote quality learning under A2I programmes.

5.1.2.6 ICT Business support and coordination

Government formed an autonomous organisation- Bangladesh Telecommunication Regulatory Authority (BTRC) to facilitate and coordinate business and investment in ICTs and telecommunications by the government agencies and private entrepreneurs. To facilitate rapid expansion of computer and internet uses by all citizens and make within the reach of lower income groups, government withdraw all import duties to ICT equipment (BTRC 2013, online; GoB, 2011).

5.1.2.7 Other service delivery

Currently government developed a very rich agricultural database in Bangladesh Agricultural Information Service's Headquarters to provide all sorts of information services to the farmers. Each farmer can get access to the database through cell phone by push-

pull SMS service. Ministry of Food and Disaster and Bangladesh Meteorological Department jointly implementing weather and natural disaster forecast programme in the websites and through SMS service of the mobile phone networks for the people of remote areas. The Government is gradually implementing a programme under which every citizen of an Upazila can get health and nutrition related advice from the doctors of Upazila Health Complex through mobile phones (Prime Minister's Office, 2013, online).

5.2 Business Community and NGOs

In middle of 1996 commercial internet service was introduced in Bangladesh using VSAT technologies by a private entrepreneur named Internet Services Network (ISN). After that business sector has been playing a vital role in expansion of ICTs throughout the country. In this respect mobile phone operators are playing significant role to connect rural people through mobile internet services. Bangladesh Post Office with the help of Banglalink Limited, a GSM mobile phone company is working for instant domestic money transfer and this service is available in all post offices (Bangladesh Post Office, 2011, online). Some Non-government Organisations like Bangladesh Rural Advancement Committee (BRAC) and Grameen Bank are providing wireless internet services in rural areas through their operating branches. BRAC and Association of Social Advancement (ASA) are working with collaboration of Western Union for international money transfer through mobile phone networks. Banglalink Limited and Robi (Mobile Phone Service Provider) are also giving remittance services with the help of Bangladesh Bank. Private mobile phone service providers developed countrywide GSM and CDMA networks to provide voice and internet service to their customers. Moreover, all mobile phone providers are disseminating various awareness content and useful information regarding tax revenues, national immunisation programme, HIV/AIDS, and about the information of relevant citizen services.

6.0 Current status of e-governance in Bangladesh.

Bangladesh's progress is not remarkable in comparison to countries with similar economic conditions in terms of e-governance implementation. Global Information Technology Report 2009-2010 ranked Bangladesh118 out of 133 countries in terms of ICT preparedness based on urgent need for improvements in areas of regulatory frameworks, human resource capacity, providing greater access and increasing uses of ICTs by citizens and investing in ICT infrastructure (Dutta and Mia, 2010). The status of e-governance can be explained with the Gartner's four-phase e-governance model (Al-adawi, et al. 2005) as (i) information, (ii) interaction, (iii) transaction and (iv) transformation. Analysing the World Bank's Four Phase E-government Model (Andersen and Henriksen, 2006), similar stages is found as (i) publishing, (ii) interacting, (iii) completing transaction and (iv) delivery. The current status of Bangladesh is explained bellow in the light of above-mentioned stages:

(1) Information Dissemination: Government published information through different ministries, divisions, departments and field level offices as Divisional Administrations and District Administrations. Some local government institutions in large urban areas have their websites containing information for citizens. It is observed that this information is not sufficient for the needs. Even among the government agencies, the intranet based communication is not functioning properly.

(2) Interaction: There is a provision in government websites to receiving questions and giving feedbacks, but the response time is not as quick as desired by the customers. Citizens can download forms and some documents from websites. Internal network among government agencies is there, but not functioning properly.

(3) Performing Transaction: In Bangladesh online money transfer is currently available. However, online money transaction is not legalised by enacting digital signature laws and online financial transaction laws.

(4) Integrated Service Delivery (Transformation): All information systems are not integrated so that public can get G2C and G2B services at one virtual counter.

In May 2013 (insignificant disparity due to rounding of the figures), the number of mobile phone subscribers in Bangladesh are 102.995 million, internet subscribers are 34.90 million among them 33.20 are connected through mobile phone networks, 0.50 million through WiMAX and 0.12 million through ISP or PSTN (BTRC, 2013, online). The internet coverage statistics showed that about 80% of the total population of Bangladesh are still outside the internet coverage. Average monthly cost of internet use for customer level in Bangladesh is US $20-30 for higher bandwidth and US $10-15 for lower bandwidth, which seemed to be very high for those who are below poverty line.

7.0 Impact of e-governance on social development in Bangladesh

The concept of e-governance is initiated with the aim of ensuring good governance and welfare of the citizen. Several studies have been done to evaluate the efficacy of adoption of ICTs in governance to ensure socio-economic progress and well-being of the people of the society and found that e-governance has multiple effects on social progress. Viitanen (2003 and 2005) has found that e-governance is playing a very vital role in poverty reduction and rural development. Following are some selected areas of social development showing the impact of e-governance in Bangladesh:

7.1 Employment and livelihood

Adoption of e-governance in Bangladesh generated various new jobs for less skilled and highly skilled persons. E-governance has acted as a generator of new employment as well as acted as catalyst to promote employment in Bangladesh. As an instance at least one female and male is directly employed in all Upazila E-centres and Union Information and Service Centres. These centres are indirectly helping numerous job seekers by providing

information for available jobs locally, nationally and internationally, which indirectly impacts employment and income generation (Prime Minister's Office, 2013, online). The pro-poor ICT policies of the Government helped to flourish ICT service oriented businesses in rural areas and generating employment. Palli Phone Centre of Grameen Bank and E-Hut of BRAC, the rural telecommunication and internet services kiosk created numerous jobs for rural poor women that show the ways of better livelihood in rural Bangladesh (Viitanen, 2005).

7.2 Education

E-governance has greater impacts in all the tiers education. E-governance initiatives in education dissemination, facilities development and management enhanced the capacity of teachers through higher trainings in related fields, improving classroom environment by installing modem ICT-based teaching equipment, managing enrolment and evaluation of the students, etc. It also improves the quality of learning from the students 'end. Ministry of Primary and Mass Education and Ministry of Education with the help of Bangladesh Computer Council developing and using multimedia learning contents and developing human resources to use them in classroom environment. Madon (2004) in a research found that using ICTs in education enhanced quality of learning. At present education sector of Bangladesh is the top-most stakeholder of e-governance initiatives.

7.3 Health and nutrition

E-governance initiatives have direct and indirect implication to healthcare and nutrition. Madon (2004) showed that public e-health services have positive impact on healthcare in India. Therefore it can be said that e-governance can directly play positive role to improve the healthcare and nutrition status of the citizens. Indirectly employment generated through e-governance can engender purchasing power for healthcare and nutritious foods that can contribute human development. Additionally, government's health related communications through ICT

channels have profound impact on health awareness building and disease prevention.

7.4 Women empowerment

UNDP (2012, pp.8-9) showed that mobile technology has positive impact on women empowerment. ICT-based enterprises as UISCs, Upazila e-Centres, etc. are similarly empowering rural women in Bangladesh through participating in household decision making. The direct and indirect jobs created through e-governance intervention for women playing incremental role on empowerment and gender mainstreaming (Prime Minister's Office, 2013, online).

7.5 Environment and disaster management

Government's ICT-based disaster forecasting services allow people to take early preparation that helps to minimise loss of lives, properties and productive systems. It is observed that during the Cyclone Aila in 27 May 2009, government officials used mobile phone networks to communicate the signals of the cyclone to the remote coastal and island people of South-Eastern parts of Bangladesh and managed to save several lives and properties from the possible jeopardy.

7.6 Building social capital

Uses of modern ICTs in communication have brought about a revolutionary change in social communication throughout Bangladesh. Mobile phone providers are playing a vital role in this concern. This communication helps to build social and community relationship and generate social capital respectively (DBCDE, 2005). Social capital is a very useful component of social development that can be built through e-governance facility expansions.

7.7 Social service

Arranging social protection and security in case of disability, old age and incapacity to income generation is very essential for

achieving sustainable development. E-governance can minimise the sufferings of these types of persons with special needs by providing virtual mobility through ICT channels. Kundu (2011) in a research on South-Asia find out the effective role of ICTs in social protection in Bangladesh.

8.0 Other side of the coin

Albeit the several positive impacts of e-governance on socio-economic development in Bangladesh, there prevails a new form of social inequality called 'digital divide' in Bangladesh as one-fifth of the total population is still outside the coverage of internet (Hoque, 2005; Hossain, 2005). Additionally, a good number of people are not properly aware of e-governance in Bangladesh. On the other hand, ICTs are electricity driven tools, which are not within the reach of a large number of the total population of Bangladesh. Additionally, there is a sharp deficiency in government workforce for policy making, programme planning, implementation and monitoring of e-governance along with the scarcity of resources for investment in countrywide expansion of e-governance facilities.

9.0 Policy options and conclusion

E-governance involves more human relations than technical knowhow. Bangladesh has to acquire global knowledge on e-governance policies, strategies and programmes and act on the basis on local needs and priorities. In a research on e-governance policies, strategies and programmes of developed and developing countries, Chen et al. (2006, p.23) have found that most of the policies and strategies on e-governance implementation in developing countries are based on successful experience from the developed countries, which may not be directly applicable to developing countries. The policy makers of Bangladesh may think about this mater to formulate policies and programmes on e-governance. Following are some specific policy options to make e-governance functional for social development:

- Government may take awareness building programmes on e-governance to motivate people to get ICT facilities for interacting with government.
- Government may choose some quick win goals for immediate actions through mobile phone networks and some long term expansion programmes through fibre optic cable to develop ICT infrastructure for making e-governance within the reach of all citizens. Additionally, provisions of useful off-line information services to the citizens through CDs, DVDs, etc. may work as a tool to reduce massive digital divide.
- Government may choose to outsource its business processes that will be helpful for efficient service delivery and also generate some employment in ICT sector.
- Government may choose to re-engineer its business processes and make it more convenient and socially viable, which can be very useful to build trust on government that is very essential for good governance.
- Government may take initiative to reduce the barriers of electronic transactions by legalising electronic signature to ease e-commerce and financial transaction among G2C, G2B and G2G as well as to ensure sustainable electricity supply throughout the country by renewable electricity generation as photovoltaic system, windmill, etc.

Adoption of modern ICTs brings about changes in governance. The role of e-governance is proved efficient to engender individual and social capabilities in citizens that allow individuals to access and utilise government information and services to transform respective livelihoods and democratic participations (Madon, 2004; Kundu, 2011; Castells 1999, p.1). The aggregate of individual capabilities can contribute to build national capabilities and foster social development in Bangladesh. In this respect, the government may simultaneously facilitate e-governance initiatives through private enterprises and by government's own agencies with an efficient and rational monitoring and enforcing role.

REFERENCES

Al-adawi, Z. et al. (2005) 'Conceptual Model of Citizen Adoption of E-Government', Available at http://citeseer.ist.psu.edu/viewdoc/download?doi=10.1.1.92.2135&rep1&type=pdf *(Accessed: 15* April *2012).*

Andersen, K. V. and Henriksen, H. Z. (2006) 'E-government maturity models: Extension of the Layne and Lee model', Government *Information* Quarterly, 23(2), pp.236-248.

Bangladesh Post Office (2011) 'Bangladesh Post Office Annual Report 2011', Available at http://www.bangladeshpost.gov.bd/AnnualReports.asp (Accessed: 19 April 2012).

BBS (2009) Welfare Monitoring Survey 2009. Dhaka: Ministry of Planning, Government of the People's Republic of Bangladesh.

BBS (2011) Population and Housing Census- Preliminary Result, May 2011. Dhaka: Ministry of Planning, Government of the People's Republic of Bangladesh.

BBS (2011) Report on the Bangladesh Literacy Survey 2010. Dhaka: Ministry of Planning, Government of the People's Republic of Bangladesh.

BTRC *(2013)* 'Bangladesh Telecommunication Regulatory Authority Website', Available at http://www.btrc.gov.bd/index.php?option=com_content&view=article&id=483:mobile-phone-subscribers-in-bangladesh-january-2012&catid=49:telco-news&Itemid=502 (Accessed: *20* July *2013).*

Cabinet Division (2013) 'Cabinet Division: Information and Services', Available at http://www.cabinet.gov.bd/index.php?lang=en (Accessed: 20July 2013).

Castells, M. (1999) Information Technology, Globalization and Social Development. Geneva, Switzerland: The United Nations Research Institute for Social Development (UNRISD).

Chen, et al. (2006) 'E-Government Strategies in Developed and Developing Countries: An Implementation Framework and Case Study', *Journal of Global Information Management*, 14(1), pp.23-46.

DBCDE (2005) 'The Role of ICT in Building Communities and Social Capital', Available at http://www.archive.dbcde.gov.au/__data/assets/pdf_file/0004123737/The_Role_of_ICT_in_Building_Communities_and_Social_Capital.pdf (Accessed: 04 May 2012).

Dutta, S. and Mia, I. (2010) Global Information Technology Report 2009-2010. Geneva, Switzerland: World Economic Forum and European Institute of Business Administration (INSEAD).

Emmirij, L. (2010) The Basic Needs Development Strategy. New York: The United Nations.

Estes, R. J. (2005) 'Global Change and Indicators of Social Development' in Weil, M. (ed.) *The Handbook of Community Practice.* Thousand Oaks, California: Sage Publications, pp. 508-528.

Fukuda-Parr, S. (2003) 'The Human Development Paradigm: Operationalizing Sen's Ideas on Capabilities', *Feminist Economics*, 9(2-3), pp.301-317.

GoB (2002) National Information Technology Policy 2002. Dhaka: Ministry of Science and Information Technology.

GoB (2008) Bangladesh National ICT Roadmap 2008. Dhaka: Ministry of Science and Information and Communication Technology.

GoB (2009) National Information and Communication Technology Policy 2009. Dhaka: Ministry of Science and Information and communication Technology.

GoB (2009a) The Right to Information Act 2009. Dhaka: Ministry of Law, Justice and Parliamentary Affairs.

GoB (2011) Bangladesh Economic Review 2011. Dhaka: Ministry of Finance.

Government of India (2008) 'Eleventh Report of 2nd Administrative Reform Commission: Promoting e-Governance- The Smart Way Forward', Available at http://darpg.nic.in/darpgwebsite_cms/Document/file/promoting_egov11.pdf (Accessed: 24 April 2012).

Hoque, S. M. S. (2005) 'E-Governance in Bangladesh: A Scrutiny from Citizens' Perspective', Available at http://www.napsipag.org/pdf/EGovernance_Bangladesh.pdf (Accessed: 30 April 2012).

Hossain, F. (2005) 'E-governance Initiatives in Developing Countries: Helping the Rich? Or Creating Opportunities for the Poor?' *Asian Affairs,* 27(4), pp.5-23.

Imran, A. and Gregor, S. (2005) 'Strategies for ICT Use in the Public Sector in the Least Developed Countries: A Cross-Country Analysis', Available at http://unpan1.un.org/intradoc/groups/public/documents/unpan/unpan023847.pdf (Accessed: 25 April 2011).

Kundu, D. (2011) 'Effective Role of ICTs in Social Protection: Case Studies from South Asia', Available at http:llwww.techmonitor.net/tm/images/2/21./11jan_feb_sf2.pdf (Accessed: 04 May 2012).

Madon, S. (2004) 'Evaluating the Developmental Impact of E-governance Initiatives: An Explanatory Framework', Available at http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN021286.pdf (Accessed: 06 May 2012).

Midgley, J. (1984) 'Social Welfare Implications in the Development Paradigms', Social Service Review, 58(2), pp.181-198.

Midgley, J. (1995) Social Development: The Developmental Perspective in Social Welfare. London: Sage Publications Limited.

Midgley, J. (2003) 'Social Development: The Intellectual Heritage', Journal of International Development, 15 (7), pp. 831-844.

Noll, H. H. (2002) 'Social Indicator and Quality of Life Research: Background, achievement and current trends', in Nicolai, G. (ed.) *Advances of Sociological Knowledge over Half a Century.* Paris: International Social Science Council, pp. 151-181.

Prime Minister's Office (2013) 'Access to Information (A2I) Programme Website', Available at http://www.a2i.pmo.gov.bd/index.php?option=com_content &task=view&id=481&Itemid=468 (Accessed: 20July 2013).

Pudjianto, B. and Hangjung, J. (2010) 'Factors Affecting e-Government Assimilation in Developing Countries', Available at http://www.cprsouth.org/wp-content/uploads/drupal/Boni%20Pudjianto.pdf (Accessed: 12 April 2012).

Sen, A. K. (1990) 'Development as Capability Expansion', Available at http://www.economia.unimore.it/Picchio_Antonella/sviluppo %20umano/svilupp%20umano/Sen%20development.pdf (Accessed: 14 April 2012).

Todaro, M. P. and Smith, S. C. (2009) Economic Development, 3rd Edition. Harlow, England and New York: Pearson Education Limited.

Turban, E. and Volonino, L. (2010) Information Technology for Management-Improving Performance in the Digital Economy, Seventh Edition. New York: John Wiley and Sons, Inc.

UNDP (2012) Mobile Technologies and Empowerment: Enhancing Human Development through Participation and Innovation. New York: United Nations Development Programme.

UNESCO (2010) 'E-Governance', Available at http://portal.unesco.org/ci/en/ev.php-URL_ID=3038&URL_DO=DO_TOPIC&URL_SECTION= 201.html (Accessed: 11 December 2010).

United Nations (1989) Handbook on Social Indicators. New York: United Nations.

United Nations (1994) Information on Social. Development Publications and Indicators in the United Nations System, Working ***Paper*** No. 7. New York: United Nations Publications.

Viitanen, A. K. (2003) 'The Role of ICT in Poverty Reduction', Available at http://www.etla.fi/files/895_FES_03_1_role_of_ict.pdf (Accessed: 04 May 2012).

Viitanen, **A.** K. (2005) 'The Role of ICT Governing Rural Development', Available at http://www.ifad.org/innovation/presentations/ict.pdf (Accessed: 04 May 2012).

World Bank (2011) 'Definition of E-Government', Available at http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/EXTEGOVERNMENT/0,,contentMDK:20507153~menuPK:702592~pagePK:148956~piPK:216618~theSitePK:702586,00.html (Accessed: 02 January 2012).