Public service delivery in 'Digital Bangladesh': strategies and challenges of citizen outreach

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ABSTRACT

The advent of information and communication technology (ICT), i.e. e-government has introduced an array of options of accessing government services and information on citizens' own terms. These terms include citizens' expectations of availing 24x7 services from anywhere through multiple channels at their convenience. To ensure more access to government services and information, Bangladesh, like other governments of the world, has taken several measures to implement e-government and in 2009 introduced the theme of 'Digital Bangladesh' (DB) integrating all the measures and initiatives of e-government under a single vision. One of the key objectives of DB is to ensure the technology-based delivery of services at the doorsteps of citizens especially to reach the unreached. In this context, the paper enquires about the emerging form of public service delivery network under the theme of DB particularly focusing on the strategic components like self-service web portal, Public Information Centers (PIC) installed at different administrative levels and cell phone-based applications. It also attempts to pinpoint the challenges that pose obstruction to the smooth realization of the initiative. The study concludes that in spite of the challenges the taken strategies play a seminal role in making the public service delivery more efficient and effective and thereby achieving the purpose of citizen outreach effectively.

Keywords: Digital bangladesh, citizen outreach, E-government, public service delivery, public information center, union digital center, district e-service center

Public service delivery under traditional setting generally requires a citizen to visit the particular government office

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for acquiring desired service or information. In most cases, the number of that visit is more than one coupled with long waiting in queue and indifferent attitudes of public officials. However, the advent of information and communication technology (ICT), i.e. e-government has turned the table by introducing an array of options of accessing services and information on citizens' own terms. These terms include citizens' expectations of availing 24×7 services from anywhere through multiple channels at their convenience. To ensure more access to government services and information, Bangladesh,

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like other governments of the world, has taken several measures to implement e-government. In 2009, the government in Bangladesh introduced the theme of 'Digital Bangladesh' (DB) and integrated all the measures and initiatives of e-government under a single vision. One of the key objectives of DB is to ensure the technology-based delivery of services at the doorsteps of citizens especially to reach the unreached. To realize that objective of citizen outreach, the government has designed an e-service delivery network composed of strategies like National Portal Framework (NPF) and National E-service System (NESS) and implementing it in phases.

In this context, the paper enquires about the emerging form of public service delivery network under the theme of DB particularly focusing on the strategic components like self-service web portal, Public Information Centers (PIC) installed at different administrative levels and cell phone-based applications. It also attempts to pinpoint the challenges that pose obstruction to the smooth realization of the initiative of ensuring services at citizens' doorsteps. The study concludes that in spite of the challenges the taken strategies show their potentials in expanding the coverage of public service delivery network, especially reaching the unreached.

E-government, Service Delivery, and 'Digital Bangladesh'

The notion of e-government holds different meaning for different nation based on the needs of the citizens and prevailing social, political, cultural, and economic realities (Hasan 2012). Even then, most of the countries expect to get efficiency in service delivery while implementing the concept of e-government. Unlike traditional format, the delivery network in e-government can be free of hierarchy, and can provide two-way interactions with 24/7 access (West 2004). The non-hierarchical character provides the citizens with options to seek services at their own convenience without having to worry about the formal office hours. The interactive features of e-government, for West (2004), create opportunities for both public officials and citizens to use two-way communication channels for ensuring efficient service delivery and accountability to citizens and this may produce more confidence in government. Yang *et al.* (2004) also term construction of a link by e-government among public authorities in both the same tier and other tiers of government crucial for establishing a citizen-focused service delivery network.

For Haldenwang (2004), seeking efficiency in internal or production mechanism in public agencies is one of the major causes of introducing e-government reform and theoretically, there are two basic ways for achieving that. Haldenwang (2004) opines that public agencies use ICT in collecting and providing information, connecting with private actors and identifying transactions of public procedures. In terms of efficiency, Haldenwang (2004) observes, for massive transactions full conversion to ICT-based automatic process can ensure efficiency and sometimes even partial conversion can also lead to considerable improvements. Thus, literatures on promises of e-government, for Streib and Navarro (2006), generally highlight three issues: easier access to information, more efficient service delivery, and improved communication.

Haque (2002) based on the experience of India observes that the relationship between citizens and administration under e-governance is producing greater access and speed and less cost. This endeavor results into lesser public harassment, red tape, complex rules and regulations, which were the major causes of massive public sufferings.

E-service Delivery Channels

Among the documented electronic delivery channels, self-service through the Internet, public information center/kiosk, one-stop counter, cell phone, interactive voice response system, government call center top the list though there is no 'one best way' to respond to it. Developed industrialized countries widely use self-service through the Internet, as the internet penetration rate and skill are high (Bhatnagar 2009). In those countries, government agencies have transformed all their services into digitized version and have offered an array of various services through a single public service portal. However, this model requires a complete computerized back-end in different government agencies. Internet is the main channel of accessing

government information and services in developing countries as well.

Setting up one-stop counter at government agencies for delivering services is another popular channel. These counters provide the citizens with the ease of getting all their needs addressed in one place. However, if the back-office is automated then considerable amount of benefits in terms of time, cost and labor can be provided to citizens (Bhatnagar 2004). This model, according to Bhatnagar (2004), claims to have greater ownership of the agency as it assists in easy acceptance of change. Under this system, traditional channel like post office is also used as go-between for public to make payments and apply for various kinds of bills and licenses.

Conveniently located information kiosk/center in public places, Public Information Center, has become popular in countries with limited Internet penetration. It is a personal computer-based facility, which provides an interface medium between service/information providers and service-seekers (Ni and Ho 2005). Other names of such centers include common access point, tele- center, community information center, community e- center, community multi-media center, public service center, rural information center, village knowledge center, info center, etc. Both public and private agencies run these centers and offer multiple services ranging from local to central government. In some countries, private agencies are in charge of operating these centers following the public-private partnership model and along with government services they have introduced other services like payments of utility bills, computer compose and printing, video-conferencing, computer training, etc to boost their business (Bhatnagar 2004).

The spectacular expansion of cell phones along with various value-added features has made it the most popular medium for communications during the last decade (Singh and Sahu 2008). Today, with the arrival of Smartphone¹, cell phones have emerged as multipurpose device as apart from making calls and sending text/voice/video messages, it can be used as personal digital assistant, media player, digital camera, Global Positioning System (GPS) navigation unit, etc. The feature of accessing Internet through High-Speed

Downlink Packet Access (HSDPA)/Wireless Application Protocol (WAP)/General Packet Radio Service (GPRS)/ Enhanced Data Rates for GSM (Global System for Mobile Communications) Evolution (EDGE) technology has made cell phone another platform to access government information and services. Besides, unlike computers, dissemination of cell phones is not restricted to those on the higher income levels rather to most income levels. For instance, as of November 2014, approximately 79.75 per cent (119.623 million) people use cell phone in Bangladesh.

Interactive Voice Response System is widely used for common and structured transactions such as getting information about ticket reservations, enquiring about bank balances, authorizing transactions, finding out the latest status of an application or complaint, and the authentication of a user for secured transactions (Singh and Sahu 2008).

Government Call Center (GCC) is another option to help citizens acquire the information they desire. Citizens can get information either immediately or within a stipulated time by dialing the GCC and choosing from the standard menu options. Queries can be registered with the GCC and the replies can be sent to the user through SMS, voice mail, or by post (Singh and Sahu 2008).

Thus, this variety of available options has generated competition among the channels to make the e-government scheme more citizen-centric and economical.

'Digital Bangladesh'

In line with the aforementioned interpretation of e-government, Awami League, a political party of Bangladesh, unveiled the theme of Digital Bangladesh in late 2008 as an electoral pledge in its election manifesto—Vision 2021 Bangladesh: A New Horizon (Bangladesh Awami League 2008). After assumption of power, the incumbent government reiterated the pledge in the updated manifesto in July 2009 (Institute for Governance Studies 2010). In other words, the theme of 'Digital Bangladesh' has become the major political commitment of the government and the guiding theme

of all activities across the government agencies (Hasan 2012).

The concept of 'Digital Bangladesh' is a long-term vision that views ICT as an enabler for socio-economic and human development by 2021. It takes four key areas-human resource development, connecting citizens, digital government, and ICT in business-as its basis where ICT can be utilized immediately. These key areas are also known as the four pillars of DB. Human Resource Development, the first pillar, aims to 'make the best use of new technologies to build worldclass skills in all areas of study especially mathematics, science, and English' (Access to Information Program 2009). It stresses on developing a tenable institutional mechanism that allows creating and disseminating digital contents by both public and private sectors along with exploring innovative delivery platforms for educational institutions at rural areas.

Connecting Citizens, the second pillar, focuses on identifying innovative channels to disseminate benefits easily to people (A2I 2009). To realize that the pillar deals with strengthening awareness and capacity of citizens for ICT-based access of public services, providing locally relevant digital content in local language, and ensuring innovative channels for citizens along with establishing two-way channels to promote participation of grassroots in policy discourse.

The key objective of Digital Government for pro-poor services is to take advantage of technology across government agencies with a sharp focus to ensure citizens' efficient and effective access to services (A2I 2009). This pillar is composed of two sub-components: E-citizen Service and E-administration. E-citizen Service aims to ensure transparent 'anytime, anywhere services to anyone in need' at an affordable price so that citizens especially the poor and marginalized can receive most over innovative delivery channels. Realization of such component indicates reduced number of face-to-face interactions between service seeker and provider, swift and economy delivery and convenient anytime access. However, E-administration adopts ICT tools to empower civil service and administrative processes with a view to 'plan, design, and implement efficient production and delivery of citizen services' (A2I 2009). This involves easy sharing of data and information across various agencies of the government.

Finally, ICT in Business deals with three broad issues of Digital Bangladesh namely access to market, promotion of ICT business, and develop ICT as an export-oriented sector (A2I 2009). Among these, the prime objective is to promote disadvantaged producers' ICT-based access to markets. Basic objective of the second sub-component is to support the ICT industry so that it can provide the required services and technology to support the three other components of DB. It also assists the private sector to achieve international standard certification in various fields. The third sub-component involves promoting the ICT sector to become export-oriented.

Apart from the four pillars, the DB vision also includes five other 'enablers' that will turn the vision into the mainstream of the national development agenda. The enablers are: a) construction of an appropriate institutional framework, b) formulation of an adequate policy and legal framework, c) develop infrastructure for banking and financial transactions, d) innovations of channels to deliver services to doorsteps of citizens, and e) identify areas for joint ventures of public and private sectors to enrich government services (A2I 2009).

E-service Delivery Network in Bangladesh

The prevailing socio-economic reality, high rate of illiteracy, especially the ICT illiteracy; lack of basic and ICT infrastructure, inadequate supply of electricity, high cost of Internet, and thereby digital divide have compelled Bangladesh to go ahead with innovative ideas to deliver public services at the grassroots (Hasan 2012). Thus, the e-service delivery network in Bangladesh is composed of the National Portal Framework (NPF) and the National E-service System (NESS).

The NPF is the single platform allowing easy access to any government organization, update and sharing of data across various agencies both vertically and horizontally along with imparting ICT skills to government employees to ensure capacity building and elimination of dependence on technical hands (A2I 2014). The NPF accommodates almost 27,000 public offices covering all

ministries, directorates, semi-government, autonomous bodies, and all government offices at different tiers. National Web Portal (http://www.bangladesh.gov. bd), however, is the gateway to all these government offices. Under the NPF, district web portals for district administration are also commissioned to ensure smooth access of information and services. Besides, NPF ensures adherence to a common architecture, design, and structure of government web portals in terms of contents and allows the government to implement the Right to Information Act through proactive information disclosure. NPF changes the nature of information in government websites from supply-driven to demand driven focusing on citizens' needs. NPF marks the crucial step towards streamlining free flow of information from the lowest administrative tier, i.e. union parishad to highest decision-making bodies, i.e. ministry and emerges as the gateway to all e-services, i.e. National E-service System.

The National E-service System starts in January 2013 focusing on three components-Citizen, Policy, and Service Provider — to deliver service at citizens' doorsteps (A2I 2013). It is an initiative to consolidate all government services within one framework. The government is implementing the NESS having the capacity to receive online or cell phone-based applications, provide instant receipt numbers for tracking status, and in most cases, completion of the service online. Major components of NESS are E-service Delivery, E-Forms, E-Filing, E-Communication, Government Directory Access Service (GDAS), Citizens' Profile, and Dashboard (A2I 2015a). The option of GDAS provides authentication and authorization to government users and serves as a directory of government users with relevant organizational and contact information while Citizen's Profile allows user to access his/her own usage history. Dashboard, however, is a unique tool to track all requests from citizens and all files generated from citizens' requests or internally within an office. A dashboard for a particular office provides personalized views containing all requests/files pertaining to that officer and all his/her subordinates. For instance, a Deputy Commissioner's (DC) dashboard will be able to monitor all e-service and e-file processing within the DC office and by all

Upazila Nirbahi Officers (UNO) under the district while a Director General's dashboard will have all divisional, district and upazila offices of the respective directorate. Installation of a special E-financial Inclusion Platform is also on the cards to accommodate any financial transaction associated with service application.

However, the development of National E-service System in Bangladesh can be categorized into two segments: e-Service 1.0 and e-Service 2.0 and these segments have been implemented in two phases. Under e-Service 1.0, government introduced PIC at the DC office as District E-service Center (DESC) to improve the accessibility and transparency of public service delivery system at the district level. Prior to that, PICs have been installed in union and upazila (sub-district) levels as Union Information and Service Center (UISC) (later renamed as Union Digital Center-UDC) and Community e-Center respectively. Phase II of the NESS, e-Service 2.0, includes the integration with the NPF. Major objectives of e-service 2.0 include developing one-stop service centers at district, upazila, and union level and establishing a National Enterprise Architecture (NEA). NEA is to provide option for all public service providers including the non-government ones to 'plug into' the NESS platform as a strategy to add new services to NESS over time. In so doing, the task of integrating DESC with NESS has started to offer the larger e-service delivery platform in the DC offices.

Major Strategic Components

Earlier discussions indicate that major strategic components of the e-service delivery network include self-service web portal, Public Information Center, and Cell phone-based applications. The following sections, therefore, briefly discuss these endeavors.

Self-Service Web Portal

Apart from the initiative of accommodating 27,000 government agencies at different tiers by the NPF, the government launched two specialized portals as *Sebakunja* (service portal) and Bangladesh Form (form portal). Initially *Sebakunja* is offering 355 services of 36 public agencies in a single access point so that citizens can get instant access to information spending lesser

time and cost and reduced number of visits to public offices (A2I 2015b). Offered services are categorized based on sector, nature, ministry/division/directorate, and government offices at district and *upazila* levels along with detailed steps of acquiring services. However, Bangladesh Form portal offers some 1033 soft copies of service-oriented papers of 139 government offices (A2I 2015c).

Bangladesh also launched *Jatiya e-Tathya Kosh* (National e-Content Repository) having the largest pool of livelihood contents (8500 separate items with 95,000 pages of material) in Bangla delivered through audiovisual, text, and animated formats (A2I 2015d). This initiative has become a good example of public-private partnership as around 320 government organizations, non-government organizations, private organizations, and international NGOs are rendering support and, as of January 28, 2015, total 3.572 million users visited the site.

Public Information Center

The concept of PICs has started as a Quick-Win⁷ initiative in 2009 as Union Information Center under the Access to Information (A2I) Program in 30 selected unions across the country (National Institute of Local Government 2009; A2I 2008). Initial success of the initiative encouraged government to launch PICs at all three tiers of local government—union/municipality, *upazila* (sub-district), and district—as access points to deliver information and services at citizens' doorsteps.

Union Digital Center: Bangladesh launched 4,547 Union Information and Service Centers (UISC) across the country on November 11, 2010 to enhance the strength of the public service delivery network across the nation ensuring easier access of public to government services and critical livelihood information at minimal cost (A2I 2015e). Likewise, government launched *Pouroshova* Information and Service Centers in 321 municipalities. However, to better suit the vision of DB the government renamed these centers as Union Digital Center (UDC) and *Pouroshova* Digital Center (PDC) in September 2014 (A2I 2015e). The UDC is established in the union council complex following the Public-Private-Peoples' Partnership (PPPP) model and is run jointly by union

council and two local entrepreneurs (one male and one female). UDC provides all sorts of government and non-government livelihood information and services (both free and fee-based) along with the commercial services which include Internet browsing, sending and receiving e-mail, video conferencing, use of cell phone, computer compose and printing, scanning, laminating, computer and other vocational trainings.

Upazila Community e-Center: Following the same model, Upazila Community e-Center (CeC) has been installed in selected 147 upazilas to promote ICT awareness amongst the poor and disadvantaged people (Ministry of Finance 2014; 2010). Main objectives of the initiative include the curbing of power of intermediaries and improving commercial benefits for the poor. Like the UDC, these e-Centers also provide same types of government services and commercial services along with critical livelihood information on agriculture, health, education, human rights, cottage industry, and latest market condition (Bangladesh Computer Council 2014). However, unlike union parishad, upazila administration headed by Upazila Nirbahi Officer (an assistant secretary rank officer) supervises the activities of CeC.

District E-service Center: Unlike UDC and CeC, government, i.e. district administration runs DESCs directly. Since the DC office is the focal point for government services for rural and urban people, these ICT-facilitated one-stop service centers are installed at the DC office to replace the century-old manual and heavily bureaucratic system by improving accessibility, accountability, and transparency of public service delivery system at the district level. Main objectives of the initiative are ensuring least possible time in service delivery; uphold citizens' right to information by enhancing extensive flow of information, save time and labor during processing period, reduce corruption, and minimization of layers of red tape. Jessore DC Office installed the very first pilot DESC and since November 14, 2011 DESCs have become operational in all the 64 districts (A2I 2015f).

Specialized Information Center: The Ministry of Agriculture (MoA) and the Ministry of Fisheries and Livestock (MoFL) have set up Agricultural Information and Communication Centers (AICC) and Fisheries

Information and Communication Centers (FICC) respectively equipped with Internet and other ICT accessories to provide farmers with specialized types of information and services on agriculture and fisheries and livestock along with general services. So far, MoA has established 20 AICC in 20 districts while MoFL installed 10 FICC in 10 districts across the country. The project of setting up these centers in all the unions of the country is moving forward (A2I 2009b).

Post e-Center: To strengthen the installation of public information center around the country government has taken up the project to transform 8,500 post offices into e-centers by June 2015 under the supervision of Postal Division. The objectives of the project are to provide the rural people with the facilities of Internet and other technological developments along with information on agriculture, education, and healthcare, sending results of public examinations to the students at the rural areas, and establishing information center for agricultural products. In fact, government is reconstructing Post e-Centers as information hub and digital photo studio (Financial Express 2014).

Cell Phone-based Applications

In the last few years, the use of cell phone has increased tremendously in Bangladesh. As of December 2014, the number of cell phone user in Bangladesh has become 120.35 million (80.23 percent of the total population) while in December 2013 it was 113.784 million (75.86 percent of the total population) (Bangladesh Telecommunication Regulatory Commission 2015). That means 80.23 percent of the total population now use cell phone. Such vast popularity of cell phone among citizens and the fact of high price of computer accessories including the Internet compelled the government to introduce cell phone as a new channel of service delivery. Thus, various public agencies have invented customized types of mobile apps to conduct transactional activity over the cell phone to pay for services.

Citizens now use cell phone-based applications in different sectors like education, healthcare, business, agriculture, transport (to purchase railway ticket), and paying utility bills (electricity, water and gas bill). Students are using cell phone to avail result of public examination and apply for admission to public colleges, universities and medical colleges while patients are using to receive mobile-based healthcare advice, tele-medicine, and filing grievance and suggestions. E-purjee has become the most successful mobile apps to sell sugarcane hassle-free to state-owned sugar mills. Farmers are also using cell phone-based applications to receive customized agricultural information. Cell phone has given the passengers of railway and the consumers of different utility services the ease of purchasing tickets and paying bills respectively from the convenience of their home. Besides, the government has inaugurated the operation of twenty-five mobile apps out of 100 for various government services (Islam 2014). These include right to information act, driving license, public services, public library, Bangladesh National Museum, information on rivers, hospital finder, immunization alert, insect control of crops, drugs and juvenile crime,

Finally, it seems, from the discussion, that among the major components the PIC has emerged as the most effective service access point as it offers the scope to use other two components (web portal and cell phone-based applications) at its setup as well.

Is the Delivery Network Effectual?

One of the main objectives of constructing the e-service delivery network under the DB theme, as stated before, is to reach those sections of citizens that the traditional delivery format fails to reach, i.e. maximize citizen outreach. Although the earlier sections have discussed the strategies of Bangladesh government to achieve that objective in detail, question arises that how effectual the network is to realize citizen outreach. Thus, the following sections enquire about that by exploring the initial achievements along with pinpointing the challenges.

Initial Achievements

Reducing Digital Divide

The prevailing socio-economical realities like poverty, high illiteracy rate, power shortage, etc result into wide digital divide in Bangladesh. As a result, a major portion of the total population in Bangladesh cannot afford buying computer and other accessories with Internet facilities. In such context, the new delivery network coupled with PICs, web portal, and cell phone-based applications emerges as a convenient and easily accessible effective medium to address the problem of affected citizens by providing the facility of accessing ICT propelled services and thereby reducing digital divide. To be precise, technological innovation emerges as the solution to problems originated from technological advancement.

Accelerated Efficiency in Service Delivery

Introduction of e-service delivery network, it seems, has promoted acceleration in service efficiency. As for instance, in the first two years (up to November 2012), forty-five million services have been provided to citizens from UDCs. Besides, birth registration of forty million newborns has been done electronically through UDCs. UDCs provided ICT training to 30,000 local youths and more than 9,000 leaders and entrepreneurs have been trained through leadership development program (A2I 2015e). However, as of September 2014, UDCs have provided 115 million services to citizens and recorded 100 million electronic birth registrations (A2I, 2015g). That means, in less than two years UDCs have managed to increase the number of provided services by seventy million (155 percent) and electronic birth registration by sixty million (150 percent). Besides, as of September 2014, seventy million results of public examinations have been disseminated over the Internet while fiftyfive million through cell phone text messages and a significant portion of these interactions has been done at the UDCs across the country (Ministry of Education

Similarly, in only just seven months after inauguration (as of May 24, 2012), DESCs disposed 809,219 applications out of 1,280,576 applications, i.e. in seven months DESCs disposed more than sixty-three percent applications (A2I, 2015f). During the same period, DESCs have delivered 389,423 land records to citizens while by September 2014 the number rose to three million (A2I 2015g). That means in the next twenty-eight months DESC's rate of delivering land records has increased by 154 per cent.

In the meantime, 2.9 million admission applications to public universities and colleges, twenty-five million utility bills and ten million electronic money orders have been sent through cell phone-based applications (A2I 2015g). Through mobile apps e-*Purjee* 2.6 million purchase orders of sugarcanes have been sent. Cell phone-based application is used to send early alerts and life-saving information to citizens during natural calamities as well.

This sharp leap over the years in terms of providing services not only indicates the potentials of e-service delivery network in serving more and more people but also brings forth the fact that a large portion of that was unreached by traditional format.

Reducing Harassment

The multi-platform offer of delivering services has created the scope of convenience for stakeholders. By reducing face-to-face interactions it saves people from paying several visits to government offices, spending long hours in queue coupled and facing indifferent attitudes of bureaucrats. Rather, the new system literally helps to fade away the notion of hierarchy and red tapes from the minds of service seekers by reducing time, hassle, and money. Thus, the e-service delivery network in Bangladesh appears to reduce harassment by bureaucracy largely.

As for example, the office of Registrar of Joint Stock Companies and Firms was renowned for long queues, customer dissatisfaction, and harassment in the hands of intermediaries and staffs. The process of registering a company took at least 40 days and required at least six visits. The introduction of e-service system, however, reduces the processing time to only four and half hours and requires no visit to the office at all. Similarly, in DESCs the average time for disposal of applications has reduced from two to four hours to maximum one hour and average time to take decision (full cycle) reduced to one to two days from two to seven days. That means time for disposal of application has reduced by 50-75 percent while time to take decision by 50-71 per cent.

Ensuring More Transparency and Accountability

Free and convenient access and efficient digitized delivery of any government information and service with tracking option contribute critically to the creation of the feelings of having more transparency and accountability in the minds of general users. Besides, the facilities of filing grievances and track any case of redress, notification through text message about acknowledgement and delivery of services have also strengthened that feeling.

As for example, the two-fold tracking system, on the one hand, by the Cabinet Division through the tool of Dashboard and, on the other hand, through SMS and Internet by the citizens perceived to ensure more accountability and transparency in public service delivery system leading to better governance. Such practice plays a crucial role in mitigating corruption and intermediaries and thereby ensuring more transparency and accountability in administration.

Closer Ties with Local Stakeholders

Service delivery in traditional format of public administration depends largely on the hierarchy system. Service seekers have to go the particular government agency at particular level and follow the set rules and regulations in availing services. However, the e-service network has changed all these and brought the offices of union parishad, *upazila* administration, and DC closer to the local stakeholders providing an essence of decentralized public service delivery network.

Challenges

Incoherent Development

One of the major challenges is the incoherent development of e-service delivery network in Bangladesh. Although the theme of DB was incorporated in late 2008 and the National ICT Policy was reviewed in the light of the DB in 2009, approved strategic priorities of DB was not finalized before January 2011. However, it seems the major components of the network have begun to come in operation at random. As for example, UDCs started operation in November 2010 while CeC in June 2010 and DESCs in November 2011. Based on the success of the DESCs the idea of NESS has begun to take form and the prototype started operation in Jessore DC Office in late December 2012. However, the District Web Portal surfaced in January 2010 and accommodating that

the National Web Portal under the National Portal Framework was launched in late June 2014. Besides, DESC is completely a state-run one-stop center while CeC and UDC are primarily commercial outlets, built on public-private partnership model, offering government information and services in exchange of fee. District administration and *upazila* administration manages and supervises the DESCs and CeCs respectively while elected public representatives supervise the UDCs.

This picture, thus, indicates the absence of a coherent guideline at the outset in establishing the e-service delivery network. It seems instead of a sound guideline founded on the experiences of other countries the concerned policymakers have moved forward based on trial and error method.

Infrequent Update

Substantial number of the public agencies does not update their websites regularly. A study done on June 25 2014 on websites of different ministries and divisions found most of them with outdated data (Badal 2014). Some of those even do not have any information about the activities of the new government, which assumed power a year ago in January 2014. Although the Prime Minister's Office issued required instruction to concerned authorities time to time, situation has not changed that much. It seems the concerned bureaucrats are not paying that much attention to the instruction and to the theme of DB, which, in fact, questions their commitment.

High Price and Slow Speed of Internet

Although users in Bangladesh can avail ADSL2+ (Asymmetric Digital Subscriber Line) Broadband, WiMax (Worldwide Interoperability for Microwave Access) and 3G technology of Internet, the whole country is not covered by these technologies. Only 197 *upazilas* out of 488 and big cities have come under the coverage of underground optical fiber transmission backbone offering hi-speed Internet (Bangladesh Telecommunication Company Limited, 2014). Users in other parts of the country have to rely on 2G technology offered by the telecommunication companies for connectivity.

Besides, to ensure wide distribution of Internet, government in Bangladesh has slashed the price of Internet bandwidth several times and brought down to only US\$35.45 from US\$1064.00 for one Megabit/sec in phases. Even then, the price of Internet bandwidth is still very high for the retail consumers (Hasan 2014). Since extensive portion of the users use Internet in cell phone (96.64 percent), telecommunication companies are consuming the benefits of government's noble intention creating a monopoly in the market.

Power Shortage

Power shortage is another challenge that Bangladesh is facing for a long time. Although the generation of power has increased by a large amount over the years, 38 percent of the total population still has no access to electricity. As a result, many citizens have to look for alternate source of energy while others who have access to power have to experience the load shedding often.

Lack of Exposure

In spite of the various government initiatives, the e-service delivery network seems to experiencing lack of proper exposure as considerable portion of the target people still do not know about the offerings and benefits of these services. Thus, it becomes vital for the concerned authority to prepare and execute a compact publicity plan while implementing the network.

Concluding Remarks

The concept of Digital Bangladesh emerged as an electoral pledge and stole the spotlight presenting the idea of a reformed Bangladesh where services will look for citizens freeing them from all sorts of inconvenience, hassle, indifferent attitudes, etc. The vision received government endorsement when the proposing political party assumed power. Thus, it has become crucial to build a new technology-propelled public service delivery system, which can accommodate the hopes and aspirations of people and expand the coverage so that everyone comes under the network. However, the detailed discussion indicates that the vision of DB did not get the required attention in the policymaking level in the initial years as it took too much time to start

the task of converting the theme into accomplishable structure. In the meantime, although hundreds of innovative ideas were coming into being, it lacked the compact coherent guideline to accommodate all of these endeavors. The paper reasonably identified that approach as experimental.

However, detailed discussion in the paper identified that Bangladesh has attained some notable achievements over the last couple of years in implementing the e-service delivery network. These include reducing both the digital divide and public harassment, bringing efficiency in service delivery, ensuring more accountability and transparency, and strengthening ties with local stakeholders in reaching the unreached. All of these indicate that the network is expanding and this technology-propelled network is able to serve those unreached segments of the population who remained unreached under the traditional format of service delivery system. The initiative has come across some challenges as well and most of them can be resolved in due course by engaging more monitoring. Finally, based on the discussion and findings, the discussion leads to a logical conclusion that the taken strategies play a seminal role in making the public service delivery more efficient and effective and thereby achieving the purpose of citizen outreach effectively.

Notes

- 1. Cell phone with more advanced computing capability and connectivity
- 2. Quick Wins are ICT-based short-term initiatives adopted by various ministries and agencies of the Government of Bangladesh aimed at improving public service delivery mechanism.

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