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Readiness in providing E-governance: A case study of Dhaka City Corporation, Bangladesh

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Abstract
The concept of e-government has been emerged in the late 1990s. But application of information technology in every aspect creates a new horizon of development. In the meantime, the government of Bangladesh declared its Vision 2021 regarding ''the Digital Bangladesh''.With a commitment to facilitating easy access to, creation, preservation and dissemination of knowledge and knowledge systems likely known as e-governance. This paper aims to assess the effectiveness of e- governance in government local authority focusing Dhaka City Corporation, is one of the most integrated institution who provide value added services to citizens as well as to what extent DCC is ready to adopt such management practice while providing value added service to public. It is explored by the study that existing infrastructure of DCC is not adequate to implement e-governance services properly because of to current employee skills and training efforts are inadequate to advance the e-services at a full online as well as technological infrastructure, DCC is not yet competent. This study found insufficient number of computers and weak internet connection as major infrastructural obstacles. The infrastructural requirement of DCC is nearly double than its running equipments and other technological facilities.
Key words: E-governance, Digital Bangladesh, Information and communication technology

1. INTRODUCTION

The advancement in Information and communication technology (ICT) has affected our relation with people, Businesses and more recently with governments. The Introduction of ICT's has changed the way governments interact with its citizens and has led to development of a world phenomenon called e government. E-government involves the use of the ICT to facilitate an efficient, speedy and transparent process of providing information to the public and to carry out administration activities.

In spite the mass has moved towards a revolutionary access to the world of information and technology, the government is yet far from establish an 'IT in government' situation, according to many studies, as the innovative use of ICT in the public administration is not yet detectable by citizens.

The "Administrative and Service Reorganization Committee", formed in 1972, observes that "Progress in science and technology and the vast amount of new knowledge have made a major impact on the tasks of the Government and on the process of decision-making." It suggested continuous study for the simplification and increased efficiency through establishing a permanent organization.

Efficient ICT integrated better governance system, transparency and accountability enough to identify

and satisfy the needs of the public sector is the long-standing areas under discussion in the field of public administration in Bangladesh.

With the advent of Internet technology policy makers of the developing countries like Bangladesh has started utilizing the new developments in ICT and especially the TCP/IP protocol, in achieving the objectives of good governance.

In order to achieve ultimate goal, government has already taken some steps and few local government organizations have already been introducing value added services through information technology. In this research process, we would like to assess the effectiveness of e-governance in government local authority as well as to what extent they are ready to adopt such management practice while providing value added service to public.

2. OBJECTIVES

Implementation of information technology for providing different value added service by local authority with a view to expedite the entire process of service delivery. It is true such initiative reduce the expected time gap rather service provided with Traditional process. Here we are trying to justify the degree of readiness by the local authority with implementation of e-government practice as well as stakeholders perception in this regards. For doing so we developed one broad project objectives with some specific objectives.

Broad objective

- To assess the degree of readiness of Dhaka City Corporation in implementing e-governance services.

Specific objectives

- To explore the current services provided by Dhaka City Corporation
- To assess the technological/ infrastructural obstacles faced by the authority in providing e-governance services.
- To asses service provider technical skills in case of implementation of e-governance.
- To assess the practicability of the current policy in providing e-governance services.
- To assess the perception of the service holders regarding the readiness of the authority in providing e-services.

3. METHODOLOGY

This study conducted following the descriptive method of research, as the research objectives demand to gather information about the existing condition in detail. In this study, the descriptive research method employed considering the objective to obtain first hand data from the respondents to analyze the level of practice of providing service via online at Dhaka City Corporation. The flexible nature of the descriptive method is compatible in collecting either qualitative or quantitative data or both, as well as allowing the freedom to select from a large range of data-gathering and analyzing instruments.

This study followed the mixed method of research. A combination of both quantitative and qualitative approach of research would be employed here. The following chart encrypts the research instruments, planned to be employed for the study, under each approach:

Chart: Research Design and Instrument

The entire information for the study will be collected in two ways-

1. Primary Data Collection &
2. Secondary Data Collection

Primary data will be collected from the employ of Dhaka City Corporation and service receivers of different Dhaka City Corporation Zone through employing the quantitative and qualitative research instruments and the secondary data will be collected in the following ways-

1. Web Sites
2. Previously collected data
3. Documents or reports

Population

Dhaka City Corporation (DCC) is the former self-governing corporation that is associated with the task of running the affairs of the city of Dhaka. Through the Local Government (City Corporation) Amendment Bill 2011, former Dhaka City Corporation has made its way for two distinct North and South City Corporations, serving Dhaka city's 9.3 million people of 75 wards. (DSCC, 2012)

According to the study objectives, all of the service providers (government employees) and service receivers (consumers) of North and South city corporation headquarters and zone offices, where the majority of the e-governance services are provided as well as policies are designed and implemented, would be considered as the population for this study.

Sample Area

Considering the convenience of the research team and the level of e-governance services' frequency of offering, both of the city corporation headquarters (North and South) and two zone offices (Mirpur and Bakshi Bazaar) have been primarily selected as the sample area for selecting samples as well as collecting pertinent information.

Sample

A total of 300 respondents estimated would be asked to participate. To attain relevant information, certain inclusion criteria would be imposed. The employees working in e-service providing activities would be selected as a sample. In addition to, customers, visiting the corporation offices either to seek for e- services or manual services would be considered as target sample. 40 corporation employees, 10 from each office and 120 students, 30 from every school would be selected as the sample for collecting data. At least 12 office visit sessions, 3 from each office would be observed to determine the nature of present e-service providing situation to assess the readiness of the public sector.

Sampling Technique

Non-probability sampling method has been chosen to identify the relevant samples, as it is very difficult to assign equal probability to gather information from the specified population and self-judgment is well required in the case of this study. This study would follow purposive sampling techniques in selecting samples.

In purposive sampling, one or more specific predefined groups are sought with a purpose in mind. Purposive sampling, in this study, can be very useful to reach the targeted sample quickly and where sampling for proportionality is not the primary concern. Snow-ball technique would be adopted to select the employees to be interviewed, as this particular technique would help the research team in building rapport and expanding the sample coverage effectively. The research team would begin by identifying some employees who meet the criteria for inclusion in this study. Proportional quota sampling would be employed to select the e-service receiver samples. Payment for holding tax and birth certificate registration are two most frequently asked e-services in city corporation offices.

To represent these two major service providers and holders, each of the service receiver groups would be assigned 40% quota each, where the rest 20% weights would be assigned for the miscellaneous service receiver sample proportion.

4. LITERATURE REVIEW

"E-Government refers to the use by government agencies of information technologies that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions

The definition of E government according to World Bank is[2]:

"E-government refers to the use by government agencies of information technologies like wide area network, the internet and mobile computing that have the ability to transform relations with citizens, businesses, and other arms of government"

1. Abramson and Means, *2001* – e-governance can be defined as – the electronic interaction (transaction and information exchange) between the government, the public (citizens and businesses) and employees.

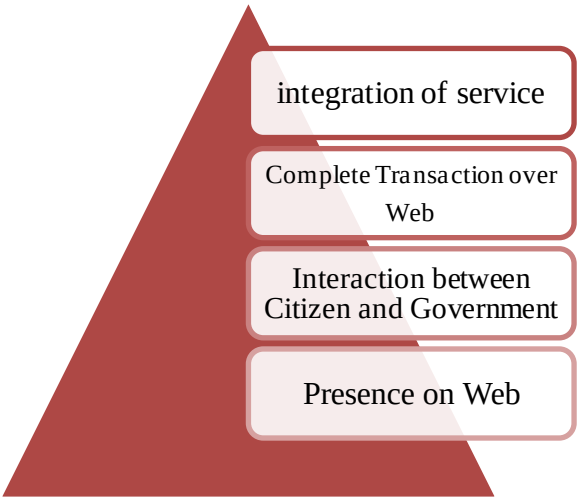
2. World Bank, 2001 – e-governance is the government owned or operated systems of information and communication technologies that transform relations with citizens, the private sector and/or other government agencies so as to promote citizens' empowerment, improve service delivery, strengthen accountability, increase transparency, or improve government efficiency.

3. UNPA & ASPA, 2001 – e-Governance is the public sector's use of the most innovative information and communication technologies, like the Internet, to deliver to all citizens improved services, reliable information and greater knowledge in order to facilitate access to the governing process and encourage deeper citizen participation.

Stages of E-Governance

In order to accomplish e government initiatives, there must be a phased approach applied to the infrastructure development which transforms an initial e government initiative into final desired service. E governments all around the world have different objectives and follow different models for e government development. The advantage of

having a phased approach is that the success of each e government initiative can be calculated and the possible errors and pitfalls of the initiative can be rectified. Generally speaking, there are four stages of e-governance which in most cases follow each other:



E-Governance in Developed Countries – Problems and Prospects

Trends suggest that private and public organizations have to reinvent themselves through 'continuous non-linear innovation' in order to sustain themselves and achieve strategic competitive advantage. The extant literature highlights the great potential of ICT tools for operational efficiency, cost reduction, quality of services, convenience, innovation and learning in private and public sectors. However, scholarly investigations have focused primarily on the effects and outcomes of ICTs (Information & Communication Technology) for the private sector. The public sector has been sidelined because it tends to lag behind in the process of technology adoption and business reinvention. Only recently has the public sector come to recognize the potential importance of ICT and e-business models as a means of improving the quality and responsiveness of the services they provide to their citizens, expanding the reach and accessibility of their services and public infrastructure and allowing citizens to experience a faster and more transparent form of access to government services.

The initiatives of government agencies and departments to use ICT tools and applications, Internet and mobile devices to support good governance, strengthen existing relationships and build new partnerships within civil society, are known as e-Government initiatives. As with e-commerce, e-Government represents the introduction of a great wave of technological innovation as well as government reinvention. It represents a tremendous impetus to move forward in the 21st century with higher quality, cost effective government services and a better relationship between citizens and government. Many government agencies in developed countries have taken progressive steps towards the web and ICT use, adding coherence to all local activities on the Internet, widening local access and skills, opening up interactive services for local debates, and increasing the participation of citizens on promotion and management of the territory. The potential for e-Governance in developing countries, however, remains largely unexploited, even though. ICT is believed to offer considerable potential for the sustainable development of e-Government. Different human, organizational and technological factors, issues and problems pertain in these countries, requiring focused studies and appropriate approaches. ICT, in general, is referred to as an "enabler", but on the other hand it should also be regarded as a challenge and a peril in itself. The organizations, public or private, which ignore the potential value and use of ICT, may suffer pivotal competitive disadvantages. Nevertheless, some e-Government initiatives have flourished in developing countries too, e.g. Brazil, India, Chile, etc. What the experience in these countries shows, is that governments in the developing world can effectively exploit and appropriate the benefits of ICT, but e-Government success entails the accommodation of certain unique conditions, needs and obstacles. The adaptive challenges of e-Government go far beyond technology; they call for organizational structures and skills, new forms of leadership, transformation of public-private partnerships.

E- Governance practice: Bangladesh Perspective

In spite the mass has moved towards a revolutionary access to the world of information and technology, the government is yet far from establish an 'IT in government' situation, according to many studies, as the innovative use of ICT in the public administration is not yet detectable by citizens.

Efficient ICT integrated better governance system, transparency and accountability enough to identify and satisfy the needs of the public sector is the long-standing areas under discussion in the field of public administration in Bangladesh. All electronic

technologies used in creating, storing, processing, communicating and disseminating information of all kinds. In order to develop the e-government systems in Bangladesh, the ICT policy 2001, the National ICT Policy 2001, the ICT Act, 2006, the ICT Act 2009 and the Digital Signature Act 2010 etc.; have already been passed by the government.

Major E-Governance Initiatives

The National Task Force (NTF) and the ECICT provide the overall guidelines and directions for implementing e-governance in Bangladesh. To monitor and execute e-governance in Bangladesh, government formed the Executive Committee on ICT (ECICT) on 2002. Besides, Focal Points/Committees for e-governance are created in every ministry and these focal points are now actively involved in preparing 'roadmaps' for introducing e-governance in their respective sectors.

The third NTF meeting in 2002 focused on connectivity, regulatory environment and e-governance issues. The fifth meeting of the NTF had a particular agenda on e-governance having specific discussions that proposed:

- Ministries/ divisions could start an e-governance services initially in assistance with outsourcing
- Bangla Key Board should be standardized through regulatory actions
- On the other hand, major efforts were taken by the ECICT, including:
- Launching an umbrella project on e-governance,
- Formation of E-Governance Focal Points in different ministries/divisions,
- Arranging preparation of a draft ICT Act, an amendment of the Copyright Act, etc.

This situation refers to a very initial stage of e-governance in Bangladesh, where specific management structure is yet to be expressively defined by the government. As a result, strategic directions for e-governance are coming out from different authorities.

5. ANALYSIS OF DATA & INTERPRETATION

Quantitative analysis

Factor analysis:

In order to test Dhaka City Corporation's readiness regarding the implementation of e-governance for providing different online services to the citizen. We, therefore, used 11 variables to assess the situation from customer's perspective. Hereby, we conducted factor analysis to determine the dominant factors which had significant impact on readiness of Dhaka City Corporation to implementation of e-governance facilities towards the citizen.

Table – 1:Component Matrix

	Component		
	1	2	3
I have full confidence over the whole online system	.744	-.327	
Dhaka City Corporation employees are swift enough in delivering online service	.725	-.343	
Number of employees is adequate to attend the service receivers.	.685	-.366	
Dhaka City Corporation employees are skilled enough for providing service.	.683	-.413	
Online facility has reduced the cost for receiving services.	.513	.357	
Online service providers are always ready to respond to problems or queries.	.381	.367	-.346
Online facility helps to accomplish work quicker.	.405	.703	
Applications of online facilities increase the efficiency of Dhaka City Corporation while providing service to citizenes.	.499	.658	
Online application process is easy to complete.	.360		.599
Dhaka City Corporation Website is well informative about its online service features.	.321	.357	.570
Access to online service is smoother.	.376		-.525

It is obvious from (Table – 1) that out of 11 contributing factors for readiness of e-governance of Dhaka City Corporation 03 (three) factors had significant contribution towards readiness of e-governance. Firstly, customers' confidence on online system, secondly, less time requires accomplishing the desire work and finally, easy to complete the whole process.

Table – 2: Total Variance Explained

Component	Initial Eigen values			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.212	29.196	29.196	3.212	29.196	29.196
2	1.850	16.823	46.019	1.850	16.823	46.019
3	1.154	10.487	56.506	1.154	10.487	56.506
4	.886	8.054	64.559			
5	.859	7.808	72.368			
6	.739	6.722	79.089			
7	.611	5.557	84.646			
8	.504	4.578	89.224			
9	.461	4.190	93.414			
10	.395	3.587	97.001			
11	.330	2.999	100.000			

(Table -2) shows that three factors explained about 56% total variability of customers' responses regarding the readiness of e-governance implementation in Dhaka City Corporation. So it is inevitable, by considering the customer's perception regarding e-governance implementation and to provide online facilities towards citizens that customers are positively appreciated the whole process. Such customer's indication and appreciation regarding implementation of online facilities in case of providing different services to citizen will encourage more towards implementing e-governance in every aspect of Dhaka City Corporation

"I have full confidence over the whole online system" – this variable implies that citizen thinks such introduction of e-governance will reduce committing an error while servicing to the citizen. "Online facility helps to accomplish work quicker" – it implies that citizen thinks they will able to get faculties with prompt, which is faster than earlier from Dhaka City Corporation and "Online application process is easy to complete" – means reduce complicacy of fulfilling the entire process. It is encouraging that customers are expecting that e-governance implementation will enhance their service deceivability from Dhaka City Corporation

ANOVA analysis

Test 01 - IV: Easiness to complete online application process vs. DV: Online Facility helps to accomplish work quicker

Table – 3: Online facility helps to accomplish work quicker.

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Disagree	8	4.50	.756	.267	3.87	5.13	3	5
Neutral	23	4.48	.593	.124	4.22	4.73	3	5
Agree	88	4.39	.836	.089	4.21	4.56	2	5
strongly agree	31	4.74	.575	.103	4.53	4.95	3	5

Table – 3: Online facility helps to accomplish work quicker.								
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Agree	88	4.39	.836	.089	4.21	4.56	2	5
strongly agree	31	4.74	.575	.103	4.53	4.95	3	5
Total	150	4.48	.757	.062	4.36	4.60	2	5

Table – 4					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.902	3	.967	1.711	.167
Within Groups	82.538	146	.565		
Total	85.440	149			

(Table – 4) exhibits significance value of test outcome is 0.167 which is above 0.05. Hence, there is no statistically significant difference between the means. The differences between the means are likely due to chance and not likely due to the independent Variable. So, easiness to complete online application process should not influence quick accomplishment of work through online facility.

Test 02 - IV: Employee skill in service delivery vs. DV: Employee swiftness in service delivery

Table – 5: Dhaka City Corporation employees are swift enough in delivering online service								
					95% Confidence Interval for Mean			
	N	Mean	Std. Deviation	Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
strongly disagree	9	2.11	.928	.309	1.40	2.82	1	3
Disagree	65	2.09	.785	.097	1.90	2.29	1	4
Neutral	55	2.73	1.062	.143	2.44	3.01	1	5
Agree	19	4.05	.705	.162	3.71	4.39	2	5
strognly agree	2	4.00	.000	.000	4.00	4.00	4	4
Total	150	2.60	1.099	.090	2.42	2.78	1	5

Table – 6					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	63.808	4	15.952	19.907	.000
Within Groups	116.192	145	.801		
Total	180.000	149			

(Table – 6) exhibits significance value of test is below 0.05. Hence, there is statistically significant difference between the means. The differences between the means are not likely due to chance, but probably due to the IV. So, employee skill should influence employee swiftness in service delivery.

Test 03 - IV: Service provider's readiness to respond to problems vs. DV: Customer confidence over online system

Table – 7: I have full confidence over the whole online system

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Disagree	24	2.38	.576	.118	2.13	2.62	2	4
Neutral	43	3.00	.787	.120	2.76	3.24	2	5
Agree	68	2.90	.979	.119	2.66	3.13	2	5
strognly agree	15	3.07	.884	.228	2.58	3.56	2	5
Total	150	2.86	.883	.072	2.72	3.00	2	5

Table – 8

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.222	3	2.407	3.229	.024
Within Groups	108.838	146	.745		
Total	116.060	149			

(Table – 8) shows that test result significance value is 0.024 which is below 0.05. Hence, there is statistically significant difference between the means. The differences between the means are not likely due to chance, but probably due to the IV. So, Service provider's readiness to respond to problems should influence Customer confidence over online system.

Test 04 - IV: Employee skill in service delivery vs. DV: Customer confidence over online system

Table – 9: Customer confidence over online system

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
strongly disagree	9	2.56	.527	.176	2.15	2.96	2	3
Disagree	65	2.48	.589	.073	2.33	2.62	2	4
Neutral	55	2.89	.854	.115	2.66	3.12	2	5
Agree	19	4.11	.737	.169	3.75	4.46	3	5
strognly agree	2	4.00	.000	.000	4.00	4.00	4	4
Total	150	2.86	.883	.072	2.72	3.00	2	5

Table – 10					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	42.487	4	10.622	20.934	.000
Within Groups	73.573	145	.507		
Total	116.060	149			

Test exhibits (Table – 10) Significance value is below 0.05. Hence, there is statistically significant difference between the means. The differences between the means are not likely due to chance, but probably due to the IV. So, employee skill should influence Customer confidence over online system.

Test 05 - IV: Smooth online access vs. DV: Customer confidence over online system

Table – 11: I have full confidence over the whole online system								
			Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
	N	Mean			Lower Bound	Upper Bound		
Disagree	13	2.38	.650	.180	1.99	2.78	2	4
Neutral	41	2.54	.636	.099	2.34	2.74	2	4
Agree	72	3.14	.983	.116	2.91	3.37	2	5
strognly agree	24	2.83	.761	.155	2.51	3.15	2	4
Total	150	2.86	.883	.072	2.72	3.00	2	5

Table – 12					
	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	12.844	3	4.281	6.056	.001
Within Groups	103.216	146	.707		
Total	116.060	149			

Test significance value is 0.001 (table – 12) which is below 0.05. Hence, there is statistically significant difference between the means. The differences between the means are not likely due to chance, but probably due to the IV. So, smooth online access should influence Customer confidence over online system.

Test 06 - IV: Easiness to complete online application process vs. DV: Customer confidence over online system

Table – 13 : Easiness to complete online application process								
			Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
	N	Mean			Lower Bound	Upper Bound		
Disagree	8	2.38	.518	.183	1.94	2.81	2	3
Neutral	23	2.57	.662	.138	2.28	2.85	2	4
Agree	88	2.88	.882	.094	2.69	3.06	2	5
strognly agree	31	3.16	1.003	.180	2.79	3.53	2	5
Total	150	2.86	.883	.072	2.72	3.00	2	5

Table – 14					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.714	3	2.238	2.988	.033
Within Groups	109.346	146	.749		
Total	116.060	149			

Significance value is 0.033 which is below 0.05. Hence, there is statistically significant difference between the means. The differences between the means are not likely due to chance, but probably due to the IV. So, easiness to complete online application process should influence Customer confidence over online system.

Qualitative analysis

At present, DCC is not providing all of its service online. Birth Certificates, Holding Tax, Building Permission and Trade License are the features provided by DCC's e-governance services. Among these, Birth Certificate is the most asked among the features and all essential services were integrated at the initial step.

The existing infrastructure is not adequate to implement e-governance services properly. DCC is currently running with less than one-fifth of the required capacity, as notifies by one of the interviewed employees. Besides, insufficient number of computers, weak internet connection is also identified as one of the major infrastructural obstacles.

In terms of employee number, DCC is running operation with only half of the current requirement. The current workforce is not adequate to serve the growing need of the large population of Dhaka city. To operate the e-governance service efficiently and effectively, the inadequate number of human resources is not the only problem faced by the DCC. In this regard, No serious long-term and sound level training and capacity building efforts are seen yet , which are indispensable for meeting the e-governance service features, due to lack of provision and fund. Most of the newly recruited stuffs of DCC's online service segment has basic knowledge about the computing operation, but lacks skill of integrating that knowledge in promoting effective e-service to customers. Moreover, a large proportion of the upper- step executives also lack training experience to develop their management and leadership capacity. As said by one interviewee, "A number of urban planners with little knowledge in computer and information technology are assigned as a system analyst."

Due to inefficient public information management, lack of internet penetration and computer illiteracy, a large portion of the customers is not much encouraged to prefer e-service to manual or traditional service version. However, most of the respondents and the e-service receivers, expressed that they have perceived the e-service as the least corrupted, the quickest and most easily accessible way to get public service.

According to the interviewee, the socio-economic condition of the majority of the citizen, human resource and government funding are not yet favorable for the extensive implementation of the e-services. A large part of the citizen is yet aware of the e-service. Moreover, not a significant portion of them are adequately technology literate to access the e-services.

Financial crisis is also another major problem in delivering the e-services effectively. It is a core reason behind slow and inadequate training initiatives..

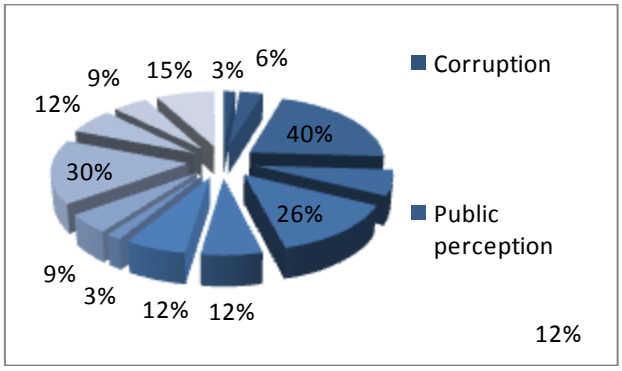

Figure 1: Existing barriers of e-governance service facility

According to the majority of the surveyed (Figure–2) DCC online service receiver respondents, lack of public awareness (40%),lack of skill of service providers (30%) and service providers' preference of manual system (26%) are the most significant barriers in implementing e-governance service facility. Least portion of the respondents found corruption (3%), public perception (6%), and

disorganization (9%) as significant existing barriers.

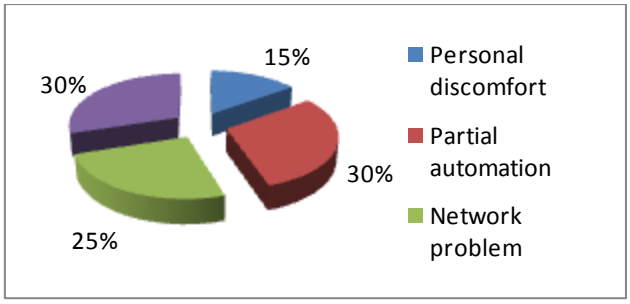

Figure 2: Difficulties faced while visiting the DCC website

On the point of difficulties faced while using the DCC website, (Figure – 3) exhibits majority of surveyed respondents, no option of online payment (30%) and partial automation (30%) are found as the most quoted significant problems. Additionally, the respondents also identified network problem (25%), as a significant setback of the DCC website.

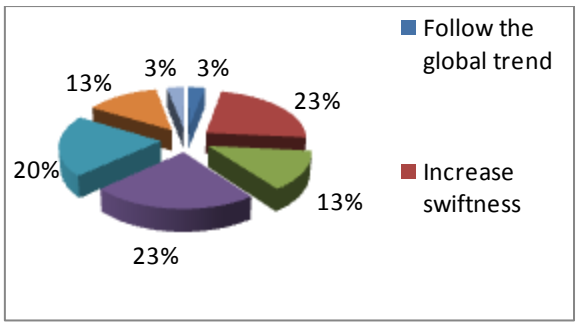

Figure 3: E-governance initiative is well timed

While expressing their negative view regarding if the e-governance initiative is well-timed effort by the government, majority of the surveyed respondents identified (Figure – 4), the authority should increase swiftness, reduce time and cost and found better collaboration within government departments to develop this effort updated and user attractive.

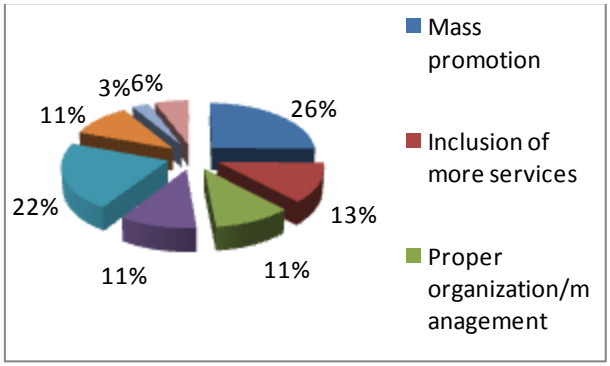

Figure 4: Recommendations/Suggestions

Majority of the surveyed respondents recommended (Figure – 5) that, the authority should pay more attention and take action on mass promotion (26%) and skilled employees (22%). In addition, inclusion of more services (13%), proper organization/management (11%) and inclusion of online payment facility (11%) were also recommended by the respondents.

6. FINDINGS

Findings, derived from the study are described below under the following themes based on the study objectives:

1. Currently, DCC is not providing all of its service online. BC, HT, BP and TL are the features provided by DCC's e-governance services. Among these, BC is the most asked among the features. DCC officials informed that the mostly demanded and essential services were integrated at the initial step.
2. The existing infrastructure is not adequate to implement e-governance services properly. DCC is currently running with less than one-fifth of the required capacity, as notifies by one of the interviewed employees.
3. Current human resource situation
    - In terms of employee number, DCC is running operation with only half of the current requirement. The current workforce is not adequate to serve the growing need of the large population of Dhaka city. To operate the e-governance service efficiently and effectively, the inadequate number of human resources is not the only problem faced by the DCC.
    - No serious long-term and sound level training and capacity building efforts are seen yet , which are appropriate for meeting the e-governance service features, due to lack of provision and fund.
4. A large number of stuffs are resistant towards understanding and implementing the e-service extensively. As one of the interviewees disclosed, many of the mid-level stuffs are still reluctant to learn the essential technological implications of the online service features. Again, he said, these traditionally skilled employee fraction also act unenthusiastically in assisting the new stuffs in understanding and adopting the administrative chores.

5. Inefficient public information management, lack of internet penetration and computer illiteracy, a large portion of the customers is not much encouraged to prefer e-service to manual or traditional service version.
6. According to the current government's declared 'Vision -21', DCC has planned to digitize the whole citizen service. However, the interviewed officials of DCC the achievement of this goal needs time and requires a continuous or a step-by-step action plan. Most of the interviewee commented that, lack of long-term vision development due to unstable political phenomenon may restrict the quick and efficient development of this e-service expansion.

To strengthen the communication media to reach the citizens, DCC is planning to introduce IVR- *Interactive Voice Response*, in collaboration with A2I. This IVR would aid DCC to successfully receive customer response and give feedback.

DCC also plans to automate its various internal management segment in accordance to the e-service to operate more efficiently and to make its employees more convenient to the digital service features.

Socio-economic condition of the majority of the citizen, human resource and government funding are not yet favorable for the extensive implementation of the e-services. A large part of the citizen is yet aware of the e-service. Moreover, not a significant portion of them are adequately technology literate to access the e-services.

The customer communication and impression management are not yet appreciative. Even though the users of online services have loudly acclaimed the swiftness and efficiency of the feature, a large portion of the citizens is not aware of this introduction of online features. Lack of communication efforts between service- provider and receiver ends is playing crucial role here. The effort to develop effective communication of e-service is not yet satisfactory. Interviewees several times mentioned the need for professional consultancy to reach the service-holders.

7. CONCLUSION

The major three factors affecting the readiness of facilitating e-governance in DCC are customer confidence in the online service system, as well as, speed and easiness of online service experience.

DCC employees' effectiveness in delivering the e-services reflect its readiness in providing service and in influence customer confidence. However, DCC's current human resource situation can be described as inadequate in number and poorly skilled. The current number of workforce is less than one-fifth of the required capacity. Moreover, due to fund crisis most of the new employees are actually hired, not permanently employed. The largest part of the of DCC's online service segment has basic knowledge about the computing operation but lacks skill of integrating that knowledge in promoting effective e-service to customers. Serious long-term training and capacity building efforts, for both newly recruited stuffs and permanent pool of employees, are unseen yet. Lack of provision and fund are reasons behind this.

In addition, DCC has not yet been successful in organizing structures and need based training and capacity development programs for its employees. Several barriers, such as, lack of long-term provision, poor service promoting and customer communication strategy (inefficient public information management), fund crisis, inefficient and politics influenced administrative decision-making process and employee resistance in becoming accustomed to the features of technical advancement, as well as, to achieve the competence in providing services, are the reasons behind these.

Yet, DCC remains unable to implement online services in an efficient manner and at a large scale, due to its incompetent technological infrastructure, which is currently only half of the required capacity. Insufficient number of computers, weak internet connection, manual payment procedure are identified as the major infrastructural obstacles, experienced by DCC. Due to this inadequate service-providing opportunity, DCC has failed to draw attention of its customers at mass level, as a result, had to limit its offerings to a few service features.

On the other hand, from the customer end, low internet penetration rate, lack of awareness and access in utilizing the e-service, instable internet connection, lack of online or mobile payment procedure, etc. are the setbacks, resulting the majority of the customer front yet less confident over online service system.

However, DCC is planning to conduct innovative public promotion programs regularly and increase the service features and quality to develop the level of awareness among the potential customers of its e-services. Besides, this organization is

concentrating to improve the human resource situation, service providing capacity (by consulting global professionals to locate successful service strategy), and infrastructural strength (ex. introducing IVR-*Interactive Voice Response*) systematically, to make their e-service efforts more effective.

8. RECOMMENDATIONS

Arrangement of extensive training program, both short and long term to develop the employee service capacity

Improve technological infrastructure

Automation of every internal department of the organization

Especial efforts should be provided to the human resource's ICT capacity development

Include more citizen service through e-governance (for example, road toll, vehicle tracking through GPRS, etc.)

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Appendix

Questionnaire Schedule for the Employees of Dhaka City Corporation

Question- 1: Do you think DCC should introduce all value added services under e-governance?

Question- 2: Do you think DCC's current technological infrastructure is capable of providing e-governance services?

Question- 3: Please, identify the major problems in providing e-governance in case of value added service.

Question- 4: Do you think the employees of Dhaka City Corporation are skilled enough for providing e-governance?

Question- 5: Do you encourage for providing online service to public?

Question-6: Do you think citizens are accepting e-governance with a positive attitude?

Question- 7: Is it difficult to communicate the features of e-governance with the service receivers?

Question- 8: Do you think the current national technological infrastructure is favorable in implementing e-governance services?

Question- 9: Do you think the service receivers feel comfortable with this new intervention in service "e-governance"?

Question- 10: Do you think majority of the service receivers are well informed about DCC's e-governance service features?

Question- 11: What e- governance policies are going to be introduced in near future by DCC?

Question- 12: What service development initiatives are going to be initiated by DCC in future?

Question- 13: What are the potential obstacles to implement the future initiatives?

Survey **Checklist** for Customers

1. Do you know Dhaka City Corporation has introduced online service facility?
2. Have you visited the official website of Dhaka City Corporation?
3. Which of the following online services do you get from Dhaka City Corporation?
4. Do you think current online facilities are accessible to all citizens?
5. Online facility helps to accomplish work quicker.
6. Online facility has reduced the cost for receiving services.
7. Online application process is easy to complete.
8. Dhaka City Corporation Website is well informative about its online service features.
9. Access to online service is smoother.
10. Online service providers are always ready to respond to problems or queries.
11. Dhaka City Corporation employees are skilled enough for providing service.

12. Applications of online facilities increase the efficiency of Dhaka City Corporation while providing service to citizen.
13. Number of employees is adequate to attend the service receivers.
14. I have full confidence over the whole online system
15. Dhaka City Corporation employees are swift enough in delivering online service
16. What are the existing barriers of the e-governance service facility provided by Dhaka City Corporation to become accessible to all citizens?
17. What difficulties have you faced while visiting the Dhaka City Corporation's website?
18. Why do you think e-governance initiatives by Dhaka City Corporation are timely?
19. What are your suggestions regarding improving the features of the e-governance service initiatives by Dhaka City Corporation?