Application of ICT in Public Sector Accounting of Bangladesh

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Abstract: *This paper investigates the application of Information and Communication Technology (ICT) in the Public Sector Accounting (PSA) of a developing country, Bangladesh. Transparency and efficiency of PSA has been urged by different stakeholders for a long time. Therefore, reformation of PSA in the developing countries has been suggested by the donor agencies. As a part of reforming the PSA, Bangladesh has introduced and applied the Integrated Budget and Accounting Systems (iBAS), a computer based network introduced with support of the association of the donor agencies. This study adopted document analysis and focus group interview to understand the application of ICT in the PSA of Bangladesh. Through the investigation of PSA practice and document analysis, this paper tries to explore the application of ICT in the public sector accounting of Bangladesh. The findings of the study show that different accounting authorities of Bangladesh government seem to have benefited from ICT based PSA.*

Keywords: *Public sector accounting, ICT (Information and Communication Technology), Implementation, iBAS (Integrated Budget and Accounting Systems), Bangladesh.*

1. Introduction

The concept of New Public Management (NPM) urges the reformation of PSA (Lapsley, 1999). The concept of NPM is introduced by Hood (1991) and has been initiated to reform the public sector in the 1980s and 1990s (Lapsley, 1999). Broadly, the aim of reforming NPM policies of the government is to modernize the public sector and ensure it's the efficiency of. The concept of NPM leads the PSA of different countries to undergo the reformation process for a long time (Carpenter and Feroz, 2001; Harun et al., 2012; Adhikari et al., 2013). Developing countries are not an exception. Moreover, the surrounding environment of developing countries is under the pressure to reform the PSA. As the developing countries depend on the resources of donor agencies, institutional

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pressure exists to reform the PSA (e.g., Adhikari et al., 2013). It is mentioned that to alleviate the poverty, public sector accounting can play a good role through the effective allocation of resources (Goddard, 2010; Rahaman, 2010; Adhikari et al., 2013). The efficient PSA can ensure the transparency of public expenditure urged by different stakeholders. Therefore, since 1980, international organizations (like World Bank, IMF and donor countries) are raising concern to reform the PSA in the developing countries (Adhikari et al., 2013).

Accounting practices and their evolution are strongly based on artifacts, things created by humans in order to solve a problem in a specific environment (Hevner et al., 2004; Geerts et al. 2013). Information and communication technology (ICT) can shape and form the accounting artifacts as well (see Geerts et al., 2013). The relevance of an artifact is determined by its inner environment as well as outer environment (Geerts et al., 2013). Inner environment indicates the substance and practice of an organization while outer environment means how an organization operates in its surroundings. If inner environment can match outer environment appropriately, or vice versa, the artifact will survive with objectives (Simon, 1996). Therefore, practice of accounting tied with ICT and the demand of stakeholders claim investigation.

This paper aims to investigate the adoption of ICT in PSA of Bangladesh; its scenario, usage and probable impacts. Bangladesh, a South-Asian country is reforming the PSA since the independence in 1971. A number of reformations have been initiated and are executed in the PSA of Bangladesh. Most reformations have been executed with the associations of donor agencies. As a process of reformation, the iBAS has been introduced and applied in the PSA of Bangladesh with the association of donor agencies. After the primary introduction of the iBAS in Bangladesh, its problem has been identified, the iBAS has been modified (iBAS to iBAS++), reintroduced and re-implemented. Currently, the Office of the Controller General of Accounts (CGA), which is in charge of PSA in Bangladesh, is using the iBAS.

It seems that investigation of the ICT adoption in the PSA of Bangladesh can add value for developing countries. As ICT is now recognized as a catalyst of growth and transformation (Walsham, 2007), and as there exist a high degree of commonality between accounting and information systems (see Hunton, 2002; Mancini et al., 2016), its effectiveness and dissemination experience is worthy to explore. Researchers have agreed that the diffusion of ICT can ensure the development and better governance (Heeks, 2002; Lechman, 2015). Contemporary research in PSA of Bangladesh indicates that ICT has been taken as a medium of reformation of PSA and ICT is likely to have favorable impact on strengthening the structure of PSA (Rajib et al., 2017; Hoque et al., 2016). Therefore, investigation of dissemination of ICT seems worthy.

The aim of this chapter is threefold. First, after disclosing the methodology, theoretical background has been investigated. Second, dissemination i.e., introduction, modification and usage & impact of the iBAS in the PSA of Bangladesh have been discussed. Finally, a constructive discussion has been drawn.

2. Methodology

To conduct the study, theoretical ground has been investigated on whether ICT can play role for Accounting. The common ground of ICT and accounting has also been in focus. To get knowledge on the iBAS of Bangladesh, various documents have been collected and analyzed critically. Documents have been collected from the World Bank, Ministry of Finance (MoF) of Bangladesh, the Office of the Controller General of Accounts (CGA), the Office of the Comptroller and Auditor General (C&AG) and other organizations of Bangladesh involved with the PSA. To understand the impact of ICT, unstructured interview have been conducted among the government accountants. The procedures of narrative analysis have been used to present the findings of the investigation (Rajib and Mou, 2014). Through the analysis and justification, it has been tried to understand the usage of ICT in PSA, its effectiveness and probable contribution to the reformation process of PSA.

It should be noted here that a number of developed and developing countries have reformed the PSA. Although the scenario of developing countries are a bit different (e.g., Ouda, 2014), a growing number of countries are trying to adopt or promise to adopt modified PSA to ensure the transparency (Harun et al., 2012; Simpson, 2012; Adhikari et al., 2015; Yapa & Ukwatte 2015). Research indicates that intentions and modification path of PSA in developed and developing countries are different (Adhikari et al., 2012; Ouda, 2014; Rajib & Hoque, 2016). However, it seems that the ultimate aim of reformation of PSA is to transform the PSA from budgetary or cash basis accounting to accrual basis accounting. It has been seen that in developing countries resources are not adequate to transform the PSA in accrual basis directly. Therefore, a gradual development in infrastructure has been suggested (e.g., Simpson, 2012; Adhikari et al., 2015; Yapa & Ukwatte 2015). The adoption of ICT can be seen as an infrastructural change rather than methodological change of PSA. But many countries are not thinking about the accrual basis or alternative standards of accounting to reform the PSA (Christiaens et al., 2015). In this case, ICT can play a significant role to increase the efficiency of PSA regarding the transparency and accountability of accounting.

3. ICT and PSA: Theoretical Underpinnings

Researchers have mentioned that although accounting and Information Systems (IS) are different, there exists a high degree of commonality between them (Hunton, 2002). In mainstream research of accounting, it has been mentioned that information and

communication technology has impact on the transparency and efficiency of accounting (James, 2002; Geerts et al., 2013).

Accounting has been suggested to use as a tool for promoting good governance and the public interest (Hopper et al. 2009; Neu 2006). Researchers have mentioned that instead of simple financial recording, a boarder concept of integrated financial management and stewardship over the effective and efficient use of financial and other resources in all areas of government operations can ensure the accountability (Iyoha and Oyerinde, 2010). Public accountability is the focal issue in modern democratic governance also. The government must be accountable to public for their acts and omissions, for their decision, policies and expenditures (Bovens et al., 2014). The concept of accountability is closely related to accounting. At least two features are involved with the term public accountability. First, the term public relates to the openness. The account giving is done in public, i.e., it is open or accessible to citizen (Bovens et a., 2014). Second, public refers to the public sector. In fact, accountability is usually defined as a social relationship in which an actor feels an obligation to explain and to justify his tasks to other (Romzek & Dubnick, 1998; Pollit, 2003). It seems plausible to say that through the efficient PSA, government can explain and justify its expenditure to the stakeholders. Public sector accountability is urged where there are enforced consequences for ineffective or poorly executed performance, outcomes, or policies (Mistry, 2012, p. 142). In developing countries, ineffective performance, outcomes and polices are visible very often (Mimba et al. 2007). Therefore, developing nations are performing efficiently in the interest of various stakeholders. It has been seen that through efficient PSA, it is possible to ensure the transparency and efficient use of public expenditure. Therefore, the reformation of PSA is demanded for the development of the developing nations (Adhikari et al., 2013).

Like efficient accounting, ICT is recognized as a catalyst for better governance (Heeks, 2002). It has been mentioned in previous researches that ICT can mitigate corruption and enhance the development of a nation. Corruption is defined as an act in which the power of public office is used for personal gain by violating the rules (Jain 2001). In many researches, public sector has been recognized as a primary enabler of corruption (e.g., Kaufmann et al., 2000; Mimba et al., 2007). In the public sector, corruption can drive macro-economic instability by increasing fiscal deficit which can be created by raising public expenditure and lowering the amount of tax received (Bhargava and Bolongaita, 2004). ICT in the public sector has been recognized as a mechanism that increases efficiency and transparency, and improves accountability in public administration procedures and management to provide better services (Heeks, 2002; Dunleavy et al. 2006; Gupta et al. 2008; Cordella & Iannacci, 2010). ICT (as a mechanism of e-Government) can achieve the thing that is demanded in the concept of NPM.

ICT can play role for the PSA. ICT can work as a continuous auditing mechanism in the public sector accounting. The concept of continuous auditing (CA) is not new in accounting and auditing area (See Pathak J. et al., 2007). Positive impact of CA has been noticed by the researchers as well. It is mentioned by the researchers that CA could

- Change the generation and dissemination of business intelligence by providing real-time reporting of financial results.
- Change system assurance by providing artifacts for more efficient and effective independent audits of company financial statement, or
- Change the design and operation of internal controls by providing artifacts for monitoring transactions and identifying anomalies (Geerts et al., 2013).

It is agreed that CA is normally adopted as a mechanism for monitoring transactions and identifying anomalies.

As both ICT and accounting are the catalysts of better governance and as ICT has positive impact on accounting, it seems plausible to say that the combination of accounting and ICT in the PSA can lead to efficient public expenditure. However, both success and failure have been seen in the performance of ICT in public sector (Sandeep & Ravishankar, 2014). A significant number of ICT projects in public sector ended with disappointing failure (Heeks, 2006). There are empirical evidences of dissatisfactory performance of ICT in public sector. It has been observed that in spite of strong stakeholders support in emerging economy, ICT projects struggled to meet their objective (Choudhuri, 2012).

4. iBAS: Introduction, Modification and Usage in Bangladesh

4.1 Introduction of the iBAS

As it has been mentioned, to ensure transparency and to cope with the concept of NPM, the government of Bangladesh took an initiative of reforming the PSA. Most reforms of PSA have been executed in association with the donor agencies. PSA of Bangladesh was originated in the mid-1800s, the days of British-occupied India. After the independence in 1971, a number of new reforms have been executed in the PSA and a number of them in association with donor agencies. Strengthening Public Expenditure Management (SPEMP) is one such multi-donor trust fund program that started in 2007 and is expected to end in 2018. The iBAS is introduced under the SPEMP project and the iBAS is still under the process of development (Hoque et al., 2016). The SPEMP is funded by UKaid from Department of International Development (DfID), Danish International Development Agency (DANIDA), and European Union and administrated by the World Bank. The objectives of SPEMP are

- Strengthening and modernizing core institutions of budgeting within the government with particular emphasis on introducing a performance orientation in public financial management; and

- Enhancing demand for better budget outcomes by improving the effectiveness of formal institutions of financial accountability, in particular, Comptroller and Auditor General's Office and the financial oversight committee of the parliament.

The iBAS is introduced in Bangladesh for public finance management, especially focusing on the infrastructural strength of PSA. The iBAS can be identified as an ICT mechanism that helps to conduct transactions with the government (G2G), between government and business (G2B) and between governments to citizen (G2C).

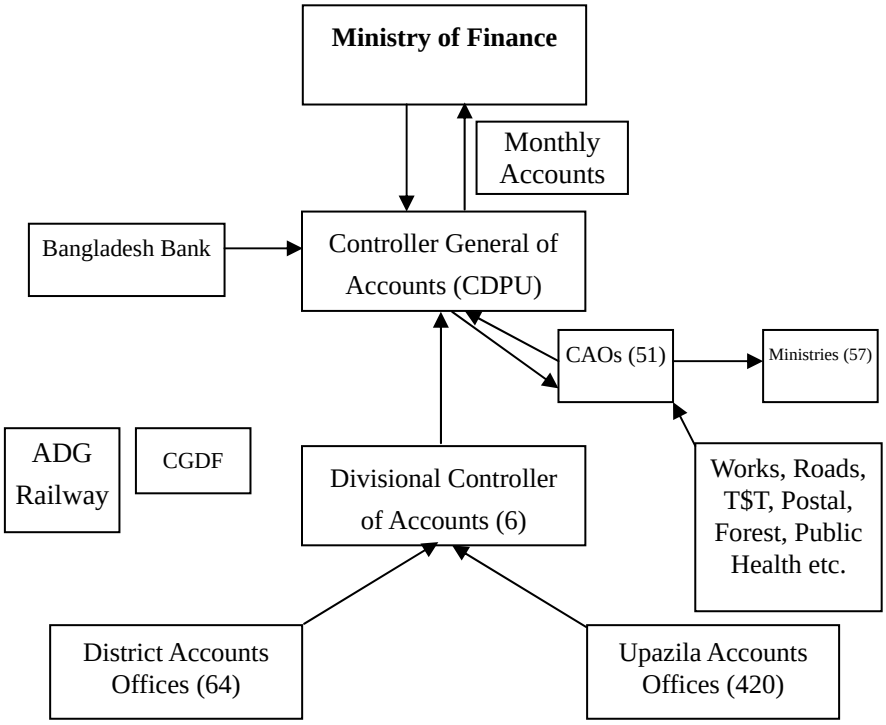
iBAS was developed from the earlier Transaction Accounting System (TAS), which was based on old technology and was criticised for unsuitable functionality and unsustainable technology. The iBAS was primarily considered as the modern replacement of TAS. Initially the iBAS was developed for simple transaction recording systems. During the development of the iBAS, authorities aimed to add budget module in the same platform of accounting. However, because of traditional view, accounting and budgeting activities were maintained as separate activities.

Normally budget refers to numerical plan under several classifications complying with the chart of accounts. It includes allocation of budget, amendment of the budget, comparison and variance with other data (e.g., actual data or other years data) relevant to the budget. Accounting refers to recording the transactions against the chart of accounts, manages all the budget related expenditures and communicating the reports to the users. Therefore, it appears that there is a linkage and ground for integration between the budget and the accounting. Integration refers to systems where data, entered once, is available to fulfill all functions of that data without the need to enter the same data again for other functions in one fully integrated system (Pollock, 2010).

In Bangladesh, the Controller General of Accounts (CGA) offices are in charge of accounting wing and the Ministry of Finance (MoF) is running budgeting divisions. Historically, in Bangladesh budget and expenditure were seen as separate activities and iBAS had been developed accordingly. Therefore, the primary version of the Integrated Budget and Accounting Systems (iBAS) fails to integrate the task of budget and accounting. In the iBAS, transaction (accounting) was recorded first and then the decision to add or amend budget was taken. This procedure ultimately divides the budget and accounting systems. However, it should be noted that preliminary version of the iBAS introduced the use of computer systems and established the reliance on computer that provided a ground for developing more sophisticated computer-based financial management systems and facilities across almost all government finance areas in Bangladesh (Pollock, 2010).

4.2 Modification of the iBAS

Considering the limitation of the iBAS regarding the integration of budget and accounting, renovation of the software has taken place and the renovation is continuing for further development. After the reforms, the iBAS++ has taken place in the iBAS[1]. Integration between the budget and the accounting has been given priority in reforms. Continuous assessment, monitoring, performance evaluation and management are the concern of the iBAS++ to ensure the integration. The flow of accounting data as well as the tasks of the iBAS++ is presented in the figure 1.



(C&AG: Comptroller & Auditor General, CGDF: Controller and General Defense Finance; ADG: Additional Director General; CAO: Chief Accounts Officer and CDPU: Central Data Processing Unit.)

Fig. 1. Flow of accounting data in Bangladesh government (Source: Various documents of CGA)

Figure 1 shows the flow of accounting data in Bangladesh that is currently maintaining by the the iBAS++. PSA is involved with a broader area than the private organizations. In Bangladesh, the tasks of the PSA can be divided into several administrative divisions and

[1] For the next sections of this chapter, iBAS and iBAS++ are used interchangeably.

levels as shown in figure 1. The office of the Controller General of Accounts (CGA) is the central and supreme organization for keeping and maintaining the accounting records for the government of Bangladesh. Figure 1 shows that accounting data flows from the local government to the central unit step by step. In Bangladesh, there are 420 Upazila Accounts Offices, 64 District Accounts Offices, 6 Divisional Controller of Accounts, 51 Chief Accounts Officers, 57 Ministries, a number of Postal offices, Forest offices and Public Health offices. All these administrations record and keep their accounts and transfer the information to the upper level administration for transfer records to the CGA. All these administration are connected through the iBAS systems.

4.3 Usage and Impact of the iBAS in the PSA of Bangladesh:

At present all the public administration of Bangladesh except the Controller and General Defense Finance (CGDF) and the Additional Director General Railway are connected through the iBAS for accounting purpose. CGDF and the Additional Director General Railways keep and maintain accounts independently. In the iBAS systems, Controller General of Accounts (CGA) is used as the Central Data Processing Unit (CDPU). As it has been mentioned, the key concept of the iBAS design is that the data is stored on central database (CDPU) and all entry and reporting is possible to access via a single common user interface. At present all the accounting office's under the CGA are fully automated through the iBAS.

The responsibility of CGA is to produce monthly and annual accounts for establishing efficient expenditure control and budgetary management. These tasks cannot be ensured efficiently unless Chief Accounts Offices (CAOs), District Accounts Offices (DAOs), Upazila Accounts Offices (UAOS) and Divisional Controller of Accounts (DCA) are properly equipped to assume delegated responsibilities (CGA, Web). The iBAS is supporting to do this. The accounting data of UAO, DAO, CAO and DAC move forward to the CDPU through the iBAS.

Upazila Accounts Offices (UAOs) perform a number of accounting activities as routine task. The Upazila Accounts Offices (UAOs) actively participate in the iBAS systems. The Upazila Accounts Offices (UAOs) incorporate monthly accounts in the next following month in the central iBAS within the scheduled date specified by CGA. iBAS helps the UAO to settle audit observations in audit of its office. Upazila Accounts Offices settle claims of development expenditure as per authority issued by Chief Accounts Offices (CAOs) for the centrally administered Annual Development Programme (ADP) budget (UAO, Duties). The Upazila Accounts Offices (UAOs) claim setting against the ADP budget is monitored by the Chief Accounts Offices (CAOs) through the iBAS systems.

The iBAS helps the pre-auditing for all the accounting administration including the Upazila Accounts Offices (UAOs). Pre-audit is an audit approach where payment vouchers

are reviewed by audit staff before final payment is made. Pre audit ensures the internal control and reduces the risk. Accounting and auditing codes are easily useable through the iBAS network to perform the pre-audit activities. To make accounting and reporting easy and effective accounting codes are used. Through accounting codes, user can collect additional data for a transaction which is recorded by using systematic code. Through the efficient use of economic code (coding on the basis of different economic head) and function code (coding on the basis of accounts units), the iBAS has made the accounting data reliable, verifiable and transparent. The pre-auditing process of iBAS is interchangeable with the concept of continues audit.

Like the Upazila Accounts Offices (UAOs), District Accounts Offices (DAOs) incorporate monthly accounts in the next following month in central iBAS within the date specified by the Office of the Controller General of Accounts (CGA). Reconciling pre-audit cheque, settle all audit observations, settle claims of development expenditure for the ADP budget are executed by the District Accounts Offices (DAOs) where association of iBAS is unavoidable (DAO, Duties).

To understand the usage and impacts of iBAS at DAOs we interviewed a number of accounting officials. One accounting official stated

> *….. Well. Primarily it was difficult to cope with the iBAS. However, with time we have coped with iBAS. It helps us to check the entry through the code (economic or function). Moreover, it has made us conscious. As delay in bill processing or cheque clearing more than 7 days remind us automatically and we take it as a warning, and we try to solve it as early as possible.*

Upazila Accounts Offices (UAOs) and District Accounts Offices (DAOs) submit the accounting reports to the Office of the Divisional Controller of Accounts (DCA). DCA incorporates monthly accounts of his/her office and District Accounts Offices (DAOs), Upazila Accounts Offices (UAOs) under him in the next following month in central iBAS within the schedule date specified by the Office of the Controller General of Accounts (CGA). Divisional Controller of Accounts (DCA) reconciles pre-audit cheques of his/her offices as well as of subordinate, and reconciles accounts where iBAS plays an important role (DCA, Duties). To understand the usage and impact of iBAS at DCAs, we interviewed several accountants. One accountant stated -

> *After adopting iBAS we are getting data from the district accounts offices more timely than before. It has made our job easier and it is helping us to transfer the data to the CGA more efficiently.*

In the accounting systems of Bangladesh government, Office of the Chief Accounts Officer (CAO) plays an important role. The Chief Accounts Officer (CAO) acts as the Staff Officer to the Principal Accounting Officer (PAO)/Secretary of Ministry or Division regarding the Accounts and Financial Rules (Web, CAG). The Chief Accounts Officer (CAO)

incorporates monthly account in the next following month in the central iBAS within the schedule date specified by the Office of the Controller General of Accounts (CGA). The Chief Accounts Officer (CAO) performs some focal activities for Bangladesh government where iBAS plays an important role. For example, the Chief Accounts Officer (CAO) draws management report from iBAS and the Chief Accounts Officer (CAO) discusses it with the Principal Accounting Officer (PAO). The Chief Accounts Officer (CAO) monitors the trend of collection of revenue and expenditure by iBAS systems and the Chief Accounts Officer (CAO) advises the Principal Accounting Officer (PAO) on financial discipline. On the basis of information obtained from iBAS, the Chief Accounts Officer (CAO) assists the Principal Accounting Officer (PAO) in preparation of budget estimate and advises on expenditure control. The Chief Accounts Officer (CAO) performs a number of activities like ensuring correctness of balance of the public account, ensuring correctness of accounts of the concerned ministry/division incorporated by Divisional Controller of Accounts (DCA), District Accounts Offices (DAOs) and Upazila Accounts Offices (UAOs), settling claims of development expenditure and issuing authority to DCA, DAO and UAO for centrally administrated annual development program (ADP) budget (Web, CAO). For all these activities, the Chief Accounts Officer (CAO) takes help from iBAS. The iBAS systems have speeded up the activities of Chief Accounts Officer (CAO) and other administrations through its functions. We interviewed several accounting officer of CAOs. One stated

> *To be frank, iBAS has made the decision making process comfortable for us. We can draw the management report regarding the budget and actual performance from the iBAS easily to talk with the secretary of ministry.*

As it has been mentioned, the Office of the Controller General of Accounts (CGA) works as the central processing unit of government accounting. It prepares monthly accounts of the government by using the data provided by the Chief Accounts Officers (CAOs), Divisional Controller of Accounts (DCAs), District Accounts Offices (DAOs) and Upazila Accounts Offices (UAOs).

We interviewed several directors of the CGA to understand the usage of iBAS. One director stated

> *Accountability is always a big concern for the public sector. But, now we are disclosing the information of public accounts continuously through our website. For example, you can check the bill processing and cheque clearing related information from our website at any time and iBAS is helping to do this.*

Through the web page of the Office of the Controller General of Accounts (CGA), it continuously discloses the information of different accounts to the citizen as well. To do these, CGA takes help from the iBAS (CGA, Web). iBAS ensure consistent flow of accounting data to the Central Data Processing Unit (CDPU) at the Controller General of

Accounts (CGA). The iBAS with Wide Area Network (WAN) arrangement among Upazila Accounts Offices (UAOs), District Accounts Offices (DAOs), Divisional Controller of Accounts (DCAs), the Chief Accounts Officers (CAOs) and the Central Data Processing Unit (CDPU) is allowing availability of nationwide individual transaction/voucher information and expenditure per budget line to date. At the same time, as data are publicly disclosed through the website of CGA, the iBAS is ensuring the public accountability as well.

5. Discussion

The accounting value chain is complex and it deals with a number of practical issues (Geerts, 2013). Therefore, success of the iBAS has to be monitored for a long time to draw conclusions as well as to make it more compatible for the environment of Bangladesh.

From the discussion of the functions of different accounting administrations (UAOs, DAOs, DCAs, CAOs), it appears that the iBAS helps to speed up the activities and helps monitoring continuously. In fact, the positive impact of the iBAS in the PSA is expected naturally as previous studies show evidence of positive impact of ICT. Impact of ICT in public sector entities has been investigated by many researches (e.g. Cordella & Bonina, 2012; Sandeep & Ravishankar 2014). To improve the managerial process in the public sector, use of ICT has been recommended in many research works (kudo, 2010). In case of Bangladesh, it seems that the iBAS has improved the managerial efficiency as well.

The things that the iBAS is providing for the PSA, can be justified with the concept of Continuous Auditing (CA). The iBAS system is actually doing the tasks (e.g., Pre-auditing) that are expected from the CA for the accounting systems. As it has been mentioned that by reducing interactions with officials, speeding up decisions, reducing human error and by enabling record keeping functions, eGovernance (through ICT) can reduce corruption (see Hopper at el., 2009), it is expected that iBAS will do the same thing also.

Not only the internal efficiency but also the public accessibility is ensured through the iBAS which ultimately enhances the accountability.

Researchers have mentioned that ICT (as a mechanism of eGovernance) expands citizens' access to public information, increases transparency and public accountability, and weaken authoritarian tendencies (Haque 2002, Mistry, 2012). Empirical researches indicate that e-Government through ICT can mitigate corruption and can enhance the positive relationship between the citizen and government (Pathak, R.D et al., 2007). The iBAS provides public access to information that ultimately supports the accountability. The CGA in Bangladesh is providing information on PSA on the website through iBAS. Therefore, it seems that disclosing information by the help of iBAS is enriching the accountability in the PSA of Bangladesh.

The overall discussion states that the iBAS is helping both for the efficient managerial process and for public accountability regarding the PSA. As it has been found in previous literature, efficient managerial process in public administration and accountability can ensure transparency and work as an accelerator for development, it is expected that the iBAS will play the same role for Bangladesh. ICT plays an important role to develop the economy and economy related facet in the developing world (Mistry, 2012). The iBAS as a mechanism of ICT is expected to perform similarly. iBAS has helped the Government of Bangladesh (GoB) and the Ministry of Finance (MoF) to make considerable step to move forward to the use of computers and network based financial systems. The iBAS can improve the speed of reporting, strengthen the control and has improved the overall performance of public financial management as well as the public sector accounting.

However, it should be noted that ICT does not guarantee the success or development. It is agreed that information technology itself cannot ensure transparency and accountability (e.g., Barata & Cain, 2001). This statement is true for the iBAS also. ICT projects (as a mechanism of e-Government) are not always the outcome of planned and controlled change management activities (Cordella & Ianncci, 2010). E-government or ICT projects often emerge from a set of complex relationship which exist between e-Government policies, technological choice and design, political and institutional environments (Yildiz, 2007; Cordella & Ianncci, 2010). The introduction of the iBAS in Bangladesh can be explained from the above statement. There are continuous pressures on Bangladesh from different donor agencies to reform the PSA. Donor agencies pressure along with other factors (e.g., technological choice and design, government policies) together has introduced iBAS in Bangladesh (Hoque et al., 2016). Therefore for sustainable success of iBAS, surrounding environment has to be monitored carefully. Numerous spectacular failures of ICT are seen in the public sector (Hackney & McBride 1995; Heeks & Bhatnagar 1999; Hazlett, & Hill, 2003). A number of factors have been suggested to consider for the success, namely – needs of users, process and systems of ICT, levels of uses, lack of choices or forced choice, trust, readiness to usage IT, cost versus quality and co-ordination success. Attention on the citizen engagement has been advised in the public administration as well (Dawes, 2008). Researchers have noticed the interrelationship among the term ICT, functions of ICT, transparency, accountability and development in the literature of ICT and development (e.g., Barata and Cain 2001; Mistry, 2012). Efficiency of information technology depends on the planning and design also. Researchers have mentioned that to reduce corruption through ICT, concern of transparency and accountability should be integrated into the public service providing systems from the planning to design phase (e.g., Singh et al. 2010). Reliable and accurate record keeping is identified as the foundation of transparency by researchers (e.g., Mistry, 2012). Moreover, bureaucratic corruption has to be monitor and control carefully. In developing nations, bureaucratic corruption induces from lack of formal rules and regulations, lack of

transparency and from other informality of process (Mimba et al., 2007). To make the iBAS fruitful for the economic development all these factors have to be considered.

6. Conclusions

The paper introduces the usage of Information and Communication Technology (ICT) in the public sector accounting in a developing country. iBAS has improved the structural strength of public sector accounting rather than methods (cash basis vs accrual basis). The introduction and the development of the iBAS has improved both the managerial process of PSA and public accountability. iBAS has speeded up the accounting activities among the different public accounting administrations and level. At the same time by helping CGA to disclose information publicly, iBAS has strengthened the attempt of ensuring public accountability. By helping to conduct interactions with the government (G2G), between government and business (G2B) and between government to citizen (G2C) simultaneously, iBAS is serving multi-facets that are assumed to have positive impact on the efficiency of public expenditure. The developing countries that are suffering from lack of resources to implement accrual basis accounting initially, can use ICT like iBAS to enhance reforms in PSA.

For the sake of reforms in PSA the future research can drive to theory building, or find better artifacts to bring PSA and ICT together or can work on the interconnection between the disciplines.

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