E-Governance in the Government Treasuries of India – A Critical Evaluation

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Abstract

Computerization of treasuries is one of the vital components of the e-governance initiatives in India. It started on the recommendation of the Finance Commission of India. Treasuries are the basic fiscal units, geographically spread in every administrative sub-units (districts) and district sub-units (sub-divisions) of the States of India (federal units). The assessment of the computerization of the treasuries is only conducted by the Comptroller and Auditor General (CAG) of India under the Information Technology Audit program. In this study, an attempt has been made to highlight the status of computerization based on the audit reports of CAG. It is being found that there are many critical aspects and shortcomings of the e-governance initiatives in treasuries. After bringing out various short -comings, some measures have been suggested for meeting up these challenges. This study would make aware of the critical aspects and short-comings to not only to the government policy makers, academicians, researchers but also to the common man as the tax payers money is involved in these e-governance initiatives.

Keywords: E-Governance, CAG- information technology audit, treasury computerization.

Introduction

India, officially the Republic of India, is situated in South Asia and one of the fastest growing economies of the world. India is administratively divided into 28 States (federal units having own democratic mechanism of government) and 7 Union Territories (directly administered by federal government).

The treasuries are the basic fiscal units in Indian republic. Two separate classes of accounts are maintained- Government of India (federal government) and individual State Governments (federal units) for receipts and payments of funds. The funds of the 'Consolidated Fund' of the Union or the State can only be spent if they have been approved as part of the Budget. In the Budget, every department is allotted funds which are sub-divided and re-allotted by the respective departments to the Drawing and Disbursing Officers (DDO). The DDO are based in the various districts and State headquarters of the Government. They are the only authorized officials to draw funds from the treasuries as per the sanction order of the Government. The functions of the treasury could be summarized into the categories such as Payment of Bills, Receipts, Accounts Preparation, Pension Generation/ Pension Payment and Deposits**.** The operations of treasury are diagrammatically presented in figure-1.

The importance of these treasuries in Indian context can be understood by looking at the sheer annual volume of financial transactions handled by them. For example, treasuries in Karnataka state handles about Rs 36,000.00 crores (7308.903 billion) of receipts and Rs 46,000.00 crores (9339.153 billion) of payments annually (Government of Karnataka, 2006).

E-Governance Policy Initiatives: The policy initiatives for e-governance in the treasuries started with the recommendations of the Finance Commissions of India. The process started with the "Upgradation of Standards of Administration" under the Sixth Finance Commission (1974-79)[1]. For the upgradation of the Fiscal Services and Treasury and Accounts, the Seventh Finance Commission (1979-84)[2] recommended for capital expenditure through grants-in-aid under Article 275 of the Constitution of India amounting to Rs 5.86 crores (0.59 million) to the States of Himachal Pradesh, Madhya Pradesh, Bihar, Rajasthan, Tripura and Uttar Pradesh. The Eighth Finance Commission (1984-89)[3] entailed an outlay of Rs 208.18 crores (2.08 billion) for the establishment of additional sub-treasuries, structural additions and infrastructure developments and staff trainings. The Ninth Finance Commission (1989-95)[4] recommended Rs 140.07 crores (1.4 billion) for the up gradation of the treasuries and accounts administration. The explicit grant for computerization and automation of treasuries in various states was made by the Tenth Finance Commission (1995-2000)[5.]

"The Commission put the view that computerization of district treasuries would go a long way in improving the managerial control of both the State and district level administration. It would also make for speedy and accurate generation of accounting information that might be needed for purposes of better planning, budgeting and monitoring".

Tenth Finance Commission (1995-2000)[5] assessed a requirement of Rs 23.10 crores (0.23 billion) at an average unit cost of Rs 10 lakhs (1 million) per treasury. The Eleventh Finance Commission (2000-2005)[6] provided an amount of Rs 200 crores (2 billion) for computerization of the treasuries in 25 States of India. The amount needed to be utilized for procurement of computers, installation of hardware and software and related training activities.

Table-1
Genesis of computerization of treasuries in States

Sr. No.	Name of the State	History of the computerization of treasuries
1.	Assam[7]	There are 23 district treasuries and 30 sub-treasuries. Computerization of treasury started in 1998-99 with the help of AMTRON (Govt. of Assam undertaking) and National Informatics Centre (NIC), Government of India. A new system called 'Comprehensive Treasury Management System (CTMIS)' was developed in 2002-03.
2.	Chhatisgarh[8]	There are 17 district treasuries and 46 sub-treasuries in Chhatisgarh. Computerization of treasuries started with the development of TRACIS (Treasury Accounting Information System) in 2004. TRACIS was developed by NIC.
3.	Haryana[9]	There are 21 district treasuries and 80 sub-treasuries in Haryana. Computerization of treasuries started on 2001 with the Online Treasuries Information System (OTIS) developed by NIC, Haryana State Unit.
4.	Himachal Pradesh[10]	There are 15 district treasuries and 85 sub-treasuries. Computerization of treasuries started on 1991 with the 'DISNIC- TREASURY' application system.
5.	Karnataka[11]	There are 31 district treasuries and 184 sub-treasuries. Computerization of treasury started in 2001 with the treasury information system, named, 'Khajane'.
6.	Kerala[12]	There are 23 district treasuries and 166 sub-treasuries. The computerization of treasuries was taken-up in 1998 with the development of Treasury Information System (TIS).
7.	Madhya Pradesh[13]	There are 53 district treasuries and 159 sub-treasuries. Integrated Treasury Computerization Project (ITCP) was taken up in October 2001.
8.	Maharashtra[14]	There are 33 district and 295 sub-treasuries. Computerization of treasuries started at Pune treasury in 1996-97 with an 'Integrated Online Application Package for Expenditure, Audit, Accounts, Cheques and Tokens (EXAACT) developed by NIC, Pune. A web-based application system, called, 'Koshwahini' was developed in 2002 and implemented in all the treasuries of the State.
9.	Punjab[15]	There are 21 district treasuries and 69 sub-treasuries. Computerization of treasuries started in 2001 with the development of 'Integrated Treasuries Information System (iTISP).
10.	Rajasthan[16]	There are 38 district treasuries, 100 independent sub-treasuries, 10 pension sub-treasuries and 104 revenue treasuries. State Government implemented the Treasury Computerization System (TCS) in 1996-97.
11.	Uttar Pradesh[17]	There are 72 district treasuries and 307 sub-treasuries. The Treasury Computerization System was implemented in 1985-86. The advanced system 'Integrated Treasury System Application (ITSANIC) was implemented from 2001.

Table-2
Case Studies on automation of treasuries in different States of India

Sr No.	Author and Year	Description
1.	Paikara et al 2006[18]	Functional aspect of Directorate of Treasury Accounts and e- Kosh (Computerized Treasury Application) of Chattisgarh, India.
2.	Govt. of Karnataka 2006	Detailed description of the Khajane (Computerized Treasury Application) of the Government of Karnataka.
3.	Raghunathan and Nisarudeen 2006[19]	Case study of Treasury Information Management (Computerized Treasury Application) of the Government of Kerala.
4.	Pandey et al. 2008[20]	Detailed description of the e- KHAZANA (Computerized Treasury Application) of the Government of Bihar, India.
5.	Rao 2008[21]	Analysis of the e- Kosh (Computerized Treasury Application) project of the Government of Chattisgarh, India.
6.	Siddarth et al. 2009[22]	Description of the computerization project of the treasuries of the Government of Haryana, India.

Computerization of Treasuries in States: In this paper, the e-governance initiatives in the some States of India are analyzed. The e-governance initiatives in the form of computerization of treasuries started in 1990s and with the advancement of technology, the computerized application systems have became the most robust e-governance application system of the States. The brief history of the computerization of treasuries is produced in table-1.

Literature Review: With respect to treasuries and its automation in Indian perspective, there are few studies in the form of case studies which have been reported in literature so far. Table-2 provides details of the case studies being carried out with respect to automation of treasuries in different states of India.

CAG and Information Technology Audit (ITA): The Comptroller and Auditor General (CAG) of India is the supreme audit institution of India, established under Article 148 of the Constitution of India. CAG is mandated to audit all receipts and expenditure of the Government of India and the State governments, including bodies and authorities substantially financed by the government. The CAG is also the external auditor of the government-owned companies. The reports of CAG are taken into consideration by the Public Accounts Committee (PAC), special committees in the Parliament of India (federal legislature) and State Legislatures.

The CAG is also mandated to audit the e-governance initiatives of the Federal and State governments and its termed by CAG as Information Technology Audit (ITA). According to CAG,

"With the increase in the investment and dependence on computerized system by the auditees, it has become imperative for audit to change the methodology and approach to audit because of the risks to data integrity, abuse, privacy issues etc. In an IT system, especially implemented in an environment of deficient controls as compared to a manual system, an independent audit is required to provide assurance that adequate measures have been designed and are operated to minimize the exposure to various risks".

IT Audit is a broad term that includes financial audits (to access the correctness of an organization's financial statements), operational audits (evaluation of internal control structure), information systems audit (including performance Audit), specialized audit (evaluation of series provided by a third party such as outsourcing etc.) and forensic audits. The objectives of the IT audit include assessment and evaluation of the process that ensure asset safeguarding – assets include five types i.e. data, application system, technology, facilities and people. It also ensures that seven attributes of data or information are maintained i.e. effectiveness, efficiency, confidentiality, integrity, availability, compliance and reliability of information. From 2004-09, CAG has conducted information technology audit of the e-governance application system in the financial

treasuries of the above States of India. The audit report highlighted improper/ inadequate modules, inadequate security policy, improper data back-up, redundant data, improper document, design deficiency, improper input control, lack of reliability, lack of disaster recovery system and improper data validation. In the Information Technology Audit (2004) of the Treasury Information System, Government of Karnataka, CAG found that there was no record of testing and acceptance of the TIS version 3.0 software by the department. No proper disaster recovery plan, validation checks and security controls are found in the audit of the integrated online application package for Expenditure, Audit, Accounts, Cheques and Tokens (EXAACT), Government of Maharashtra. It is being also found that system development methodology adopted was purely ad-hoc and in the absence of proper documentation, the department could not manage and monitor the development and implementation of the system. In the Information Technology Audit of the Online Treasury Information System (OTIS), Government of Haryana in 2006, it is being critically observed that the test checked treasuries were using different versions of the treasury application. In the absence of proper input control, the OTIS application software was accepting all forms of codes of bills instead of the form of codes which the major head of account was required to process. The Department had not prepared and documented a disaster recovery and business continuity plan and back-up policy.

CAG audit of Computerization of Treasuries of Karnataka found that the codal provisions ignored while awarding the contract for establishment of network connectivity. The system either did not have proper input validations or these validations were bypassed resulting in violation of various financial and service rules. The system did not facilitate uploading of budget related data from the finance department package. The data back-up was not stored off-site which may lead to available loss of data in case of crashes. CAG found that of five modules, only one module implemented even after 4 years of implementation of Comprehensive Treasury Management System (CTMIS), Government of Assam (2007). Back-up policy was ineffective and off-site storage of back-up was not ensured, there by exposing the system to risk of non-restoration in the event of a disaster. An expenditure of Rs 2.39 crore (0.024 billion) on implementation of Treasury Accounting and Application Software (TAAS) turned out to be unfruitful. In the audit of e-Kosh online treasury application system of the Government of Chhattisgarh in 2005, CAG observed that there was no documented IT Policy. Documentation of various stages of system development was also inadequate. In the Information Technology Audit of the Online Treasury Information System (OTIS), Government of Himachal Pradesh (2007), it is found that. The user manuals, operational manuals and system manuals were not available in all the test checked treasuries. The Department had not formulated and documented any disaster recovery plan. Due to absence of input controls, possibility of double drawal of bills in OTIS and overpayment/ incorrect payment of pension existed. The Information

Technology Audit of Integrated Treasury Computerization Project, Government of Madhya Pradesh for the year ended 31st March 2007, CAG made the observations that due to improper validation, 1403 Drawing and Disbursing Officers (DDO) was allotted more than one code and some of them operated both the codes to draw and encash bills. There were no validation checks in the software to flag excess expenditure on account of discount/ allowed/ commission paid to stamp vendors over and above the budget allotment. Inadequate password controls rendered the data vulnerable to unauthorized access/ modifications. Disaster recovery plan was not formulated.

In the audit of the Integrated Treasuries Information System (iTISP), Government of Punjab (2007), it is being observed that the software was got developed and implemented without formulation of Information Technology strategy, adoption of a system development life cycle approach and information technology security policies. The directorate failed to incorporate input/ validation controls in the iTISP despite adoption of software six years ago. The data generated was unreliable to some extent. Password policy, back-up policy, disaster recovery and business continuity plans was not framed and documented. User manual was not available in 10 out of 11 test checked treasuries which had been found in the audit of the treasury computerization of the Government of Rajasthan in 2007. The audit also found that there was no documented information system security policy and password policy. There was no record of testing and acceptance. Some modules of the planned system were not implemented and some partially implemented in the test checked treasuries. In the audit of the Treasury Operation System (TOS), Government of Tripura, it is being found that there was a delay in implementation of the system. Non incorporation of important modules like PLA, Pension, Deposit and Stamp account etc. led to only limited use of the system. Deficiency in designing of database structure resulted in showing down of the system. In the absence of change management control policy, different versions of application software were being run in treasuries and sub-treasuries thereby increasing the risk of non-recovery of data in the event of data loss due to disaster like virus attack etc. CAG found in the audit of the Directorate of Accounts, Government of Goa in 2009 that Due to the absence of a time-bound program and comprehensive documentation for the development of systems, several processes were left out during implementation. During the data migration to the new GPFS, data clearing was not performed, resulting in the transfer of obsolete, incomplete and inconsistent data. Business Process Re-engineering was not carried out to bring in more efficient processes. Reliability of the system in preparation of accounts remained doubtful as manual interventions were resorted to in order to reconcile the errors.

Suggestions for Improvement of the System: The author attempted to suggest some measures out of the working experience which will be able to address the short-comings in the computerization and e-governance of the financial treasuries

(fiscal units) of India Structured procedure and documentation for the development, modification and implementation of the system, should be followed to achieve the objectives and user requirements. Policy procedure regarding data security, documentation of data, backup and restoration should be prepared and implemented accordingly. Security of data and anti-virus measures should be immediately implemented to prevent data loss and corruption. The employees of the treasuries should be technically trained for project management and data management instead of fully depending on the private vendors and developers. The password controls may be strengthened and appropriate activity logs should be introduced. Development of a comprehensive database of employees, DDOs and pensioners for utilization, across applications should be considered. A mechanism to oversee implementation of logical and physical access controls, and authorization levels, should be put in place. Compliance to various financial plans and regulations and other manual provisions should be ensured and provisions made in the software. Detailed user manuals, system data flow diagrams and system maintenance manuals should be prepared in respect of the duties to be performed at the treasuries and sub-treasuries.

Conclusion

The purpose of the study is to highlight the shortcomings of the e-governance initiatives or computerization of treasuries in different States of India through the lens of the information technology audit reports prepared by the Comptroller and Auditor General (CAG) of India. The study brought into light that the CAG has critically analyzed the various computerization projects and highlighted that the e-governance initiatives are failing to achieve the desired results due to various short-comings. The study has important practical implications for the government policy makers as well as the academicians. This is the first attempt to bring out the various critical remarks made by the CAG for the information and knowledge of the academicians and researchers. It has considerable relevance for the higher authorities of the Ministry of Finance, Government of India; Finance Departments of the State Governments and Directorate of Treasuries and Accounts (DTA), who are the main policy makers regarding the treasuries (fiscal units). The Information Technology Audit reports explicitly mentioned the revenue loss with regard to the computerization of treasuries of three States of India which is presented in table 3.

Table-3
Revenue loss in computerization of treasuries

State	Revenue Loss (in millions)
Assam	0.133
Madhya Pradesh	0.236
Maharashtra	0.150

E-Governance in treasuries or computerization of treasuries are brought under the National e-Governance Plan (NeGP) as State Mission Mode Project (SMMP). The Guidelines issued by the

Department of Expenditure, Ministry of Finance, Government of India [F.No.6 (57)/ FRU/ 04-Part- III, dated July 2010] for the modernization, computerization and up -gradation of the treasuries and integration of the government financial system in every State. The fund allocation to States under this project was to the amount of Rs 75 Lakh (7.5 million) per treasury and the disbursements have started from the financial year 2011-12. Therefore, if the State of Punjab is taken as an example, than, Punjab would receive an amount of Rs 67.50 crore (0.68 billion) for the period of five years from 2010-11 to 2014-15.

The following findings in this paper would help the policy makers to avoid the revenue loss, as mentioned in table 3 and utilize the disbursements under the NeGP in more effective and efficient way. The findings would make aware and informed the common people of the country and they would also exert pressure on the government for the proper utilization of the tax-payers money. There is ample scope of further research and study in this field. Apart from the audit reports, the state of implementation and effective performance of the treasury information systems can also be empirically tested by measuring the adoption of the system by the officers and employees of the treasuries.

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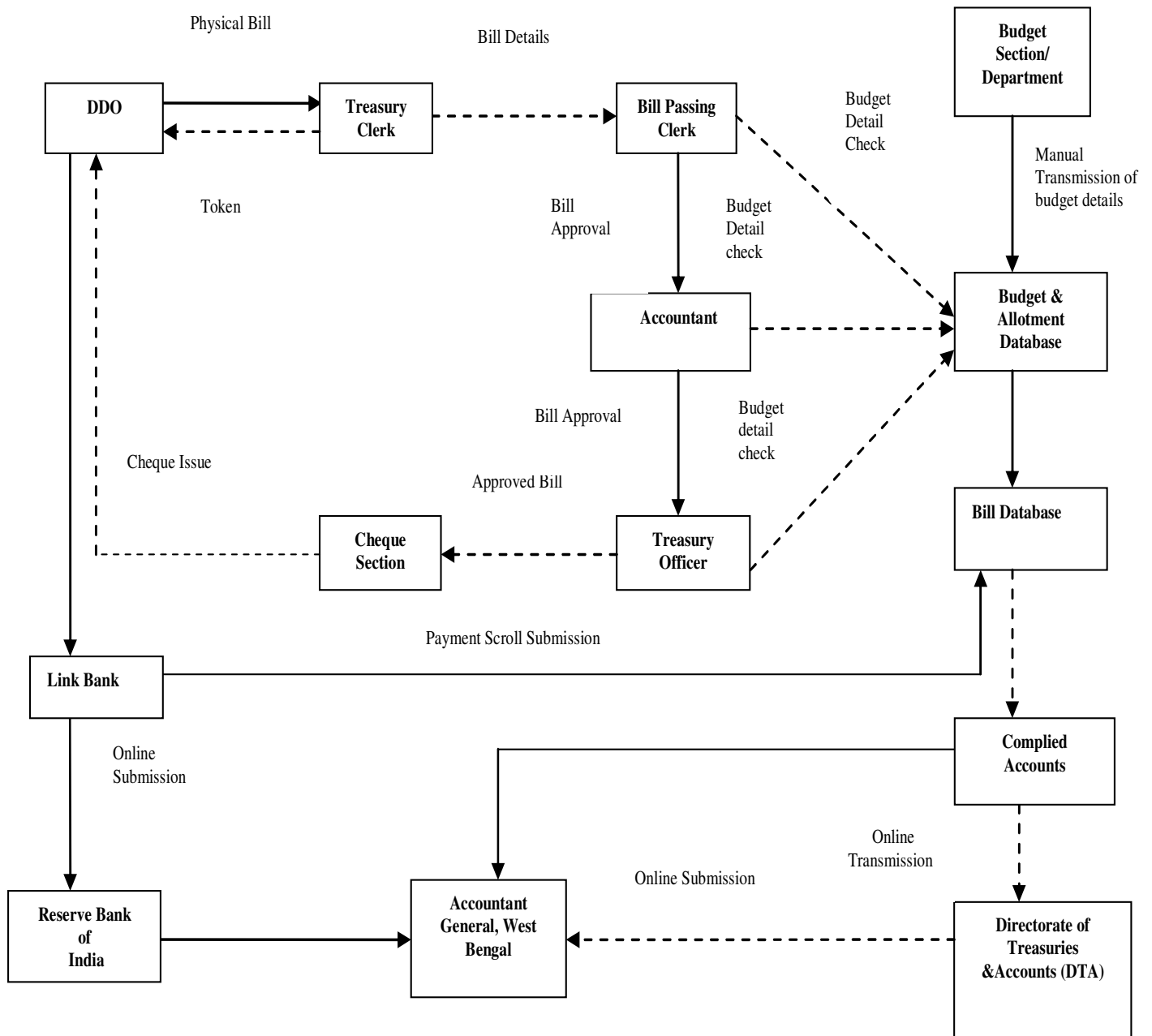
Figure-1
Operations of Treasury