# Leveraging Technology to Enhance Audit Quality and Effectiveness

**Country Paper by SAI PAKISTAN**

**for the**

**6th Symposium of ASOSAI**

**Kuala Lumpur, Malaysia**

**12 February 2015**

Pakistan is a developing country located in the southern part of Asia. The origins of E-government in Pakistan could be traced to early 2000s when the Government began to realize the importance of ICT and started to build institutional arrangements, with the objective tostart different projects correlated to e-government, to make available technical recommendations and guidelines for the implementation of such projects, and to set standards for software and infrastructure in the field. The aim of e-government was to help public sector organizations to increase efficiency, effectiveness, and responsiveness through the use of ICT to better serve the citizens.

**E-GOVERNMENT AND THE NATIONAL IT POLICY AND ACTIONPLAN 2000**

Even though a Telecom Wing existed under the Ministry of communication, there was no Federal Division for IT prior to the year 2000. In March 2000 the IT & Telecom Division was formed within the Ministry of Science and Technology. As the widespread utility of IT had become more and more dependent on Telecom Infrastructure, combining IT with Telecommunication was a significant strategic step. To further enhance the focus on this sector, a separate Ministry of IT was established in the year 2002. The first IT Policy and Action Plan of Pakistan was approved by the Federal Cabinet in the year 2000. The IT Policy paid particular attention to the use of IT in Government.

The relevant sections of the IT Policy pertaining to E-Government are as follows:

- On the pattern of the IT Division, each provincial government shall create an IT Department/Board to plan, co-ordinate, and implement government IT projects. The Departments shall be staffed with IT professionals. Special pay scales/contracts shall beintroduced for IT professionals.

- A minimum of 2% of the budget shall be allocated for IT Services and Provincial as well asFederal IT departments will allocate a substantial sum annually for developing IT infrastructureand conducting training at all levels in the government.

- Working Groups shall be formed to create awareness in all Government organizations about theutility of computers and IT. For recommendation of these items, consent of the EstablishmentDivision at the Federal level and S&GAD departments of the Provincial Governments will beobtained.

- IT literacy shall be made mandatory for all future government employment, and a column shallbe introduced in the ACR form for assessment of IT knowledge and utilization by governmentemployees.

- The Internet and Intranet e-mail shall be utilized for inter-office communication (necessarysecurity, digital authentication and legal cover shall be provided to secure the validity of suchcommunications) and the establishment should replace physical file system to computer basefile system.

- The IT departments shall pre-qualify private firms to provide IT consultancy services, softwaredevelopment and products to the government. Computer and office automation training for all management and secretarial staff shall be taken up on a priority basis. Selection of networkingoperators for government projects will be done on a competitive basis.

- National databases of economic activities shall be prepared to provide facts for different policiesframed by the government. These databases shall be made accessible to the public through theInternet, in accordance with the Laws of Pakistan. This will lead to transparency in Governmenttransactions and various bidding processes.

- Representation from the private sector and the provincial governments shall continue in the ITCommission for generating new concepts, solving IT related problems, and ensuring dueparticipation of all stakeholders in ongoing as well as future efforts towards IT implementation.

- The IT Commission will provide inputs on a continuous basis. The existing composition of the ITCommission shall be expanded and the groups formed for formulation of the IT Policy shall continue to work as associate members of the IT Commission.

**Electronic Government Directorate (EGD)**

Prior to the formation of the IT Division an IT Commission existed. As a concrete follow-up step to the IT Policy, in October 2002, the Federal Cabinet approved the conversion of the IT Commission into the E-Government Directorate (EGD). EGD was set up as a cell within the Ministry of IT to focus specifically on E-Government with the following Terms of References (TORs):

- Lead the E-Government Effort in Pakistan
- Plan and Implement projects under E-Government program
- Provide technical support to Federal, Provincial & District agencies
- Preparation of standards for software and infrastructure in the field of Electronic Government

The E-government Directorate has the primary responsibility for bringing about the e-government transformation within the Federal Government, with strong cooperation and commitment, necessarily, from the various Federal Government organizations. It had a mission to create an enabling environment through formulation and implementation of policies and legal framework, providing ICT infrastructure for enhancing productivity, facilitating good governance, improving delivery of public services and contributing towards the overall socio economic growth of the country.

## LEGISLATION

Legislation is a key component in the overall IT Program. The introduction of online transactions and the reengineering of processes require legislation and changes to the rules and regulations. The information society has also created a new set of legal challenges that have to be dealt with by either bringing new legislation or amending the existing laws. Some of the salient IT legislation enacted in Pakistan to date is as follows.

### Electronic Transactions Ordinance (ETO)

ETO was promulgated in 2002 and it coversinformation & communication transactions and applies to electronic signatures and protection of official/commercial documents.

It states that no document, record, information communication or transaction will be denied legal recognition, admissibility, validity, proof or enforceability on the ground that it is in electronic form and has not been attested by any witness.

The law while providing legal recognition to electronic signatures states that the requirement under any law for affixation of signatures shall be deemed satisfied where electronic signatures are applied.It clarifies that an electronic signature might be proved in any manner, in order to verify that the electronic document is of the person that has executed it with the intention and for the purpose of verifying its authenticity or integrity or both.

**Electronic Crimes Act (ECA)**

This act was promulgated in 2004 and covers crimes in the electronic domain. This Act is more extensive in nature, covering cyber-terrorism, corporation liability, e-fraud (financial or otherwise), e-forgery, spoofing, spamming and pornography. This Act was a step towards better e-governance that protects the interest of all stakeholders.

**Data Protection Act (DPA)**

This act was promulgated in 2005.This act defines data in a holistic manner. Such an act was needed since the main repository of e-government "the data center" needed to be regulated, to protect the interests of various government departments as well as the interests of citizens. It deals with the aspects of dissemination and disclosure of data and defines punitive measures for breach of sensitive data.It also lays onus of proof on the owner of the data for adequately securing the system to protect information. However, recourse can be found based on reasonablegrounds and good faith principle. It also deals with mediation and dispute resolution pertaining to the nature of the case.

**Internet Banking/E-Commerce**

In 2005 Government Promulgated Payment Systems and Electronic Funds Transfer Act (PSEFTA). This is a comprehensive financial paymentand transfer of funds legislation presented by the State Bank of Pakistan. It confers liability of fraudulent transfer of electronic money on the financial institution and imposes governance mechanisms of these institutions in accordance with the standards and requirement laid out by the State Bank of Pakistan. This Act considers ETO as the precedent legislation for definitions of transactions. It delineates the payments systems; their operations and instruments ensuring their security and regulating any third party involvement. Clearing of funds by the State Bank of Pakistanis subjected to various provisions. Transfers need to be documented and errors must be duly reported, reserving the rights of the consumer and knowledge of State Bank of Pakistan, the supervisory authority.

## CAPACITY DEVELOPMENT OF SPECIALIST ICT AUDITORS

Thedepartment of Auditor General of Pakistan established a Center for Information Systems Auditing (CISA) in the Audit and Accounts Training Institute Lahore. The main objectives for the development of CISA were;

- Developing capacity of DAGP in the field of information system auditing

- Continuous research and development in the field of IS / IT Audit

- Providing training to different SAIs

- Support Field Audit Offices in IS auditing

This center is imparting beginner and advanced level courses on IS Auditing and is preparing its trainees for ISACA Certifications. As of November 2014 it has trained 334 field auditors and currently there are 6 Certified Information Systems Auditors in the Department of Auditor General of Pakistan.

## SAI PAKISTAN's ROLE IN THE ICT INFRASTRUCTURE OF THE COUNTRY

Although it has been quite some time that Pakistan has begun investing in the information and communication technology infrastructure of the country and has even developed five year strategic plans to that end. However IT /IS auditing in SAI Pakistan is still in its nascent stages of development with the first IS Audit report recently been approved by the Auditor General of Pakistan and submitted through the President of Pakistan to the parliament. Currently SAI Pakistan does not become involved at the pre-implementation of e-Government/ICT projects as advisors

## AUDITING E-GOVERNMENT/ICT ENVIRONMENT

SAI Pakistan has developed in-house expertise in use of Audit Command Language software which is the leading tool used as aid in the financial and attest audit. Since the core government accounting is SAP based, therefore, the audit department either extracts the data itself or get a certified copy of data from the auditee and apply different substantive testing methods using ACL on this data.

Until recently the system development and IT projects audit were being conducted as part of the regular audits but this focus is changing fast and there is an understanding at the highest level in

SAI Pakistan that the IT projects and system development audit needs to be conducted keeping in view the best practices and guidelines issued by WGITA of IntoSAI and ISACA. The capacity building exercise for IT audits has also focused on this aspect and now IT audits based on the above principles have also been planned and executed.

As the IT auditing is quite a new dimension in the overall auditing framework of SAI Pakistan, no special study so far has been conducted focusing on the failure of IT projects. However, going forward, SAI Pakistan may initiate such studies for certain agencies that are mainly responsible for IT projects implementation at the federal and provincial governments' level.

In our experience at SAI Pakistan as auditors for the government, we have not come across any specific technology based tool being used to address project failures.

**TECHNOLOGY BASED APPROACHED THROUGH THE USE OF AUDIT TOOLS**

The main tool being used by SAI Pakistan for data analytics is ACL (Audit Command Language). SAI Pakistan has invested in the training and capacity building on ACL use and we have some expert users of this data analytics software.

As regards coverage, we have used ACL for payroll and receipts audit quite frequently and the results have been quite encouraging because SAI Pakistan has detected significant irregularities in certain cases.

The use of analytics tools has been mainly on the structured data. So far we have not made use of ACL on unstructured data for data mining purposes.

The extent of using ACL is at an advanced stage and SAI Pakistan makes use of it quite frequently while auditing payroll and receipts expenditure.

There are mainly two constraints which impact access to data. First of all the auditee organizations are quite possessive about their information systems and they are generally not very forthcoming in granting access for audit. And secondly the capacity issue is also there because of the varied nature of IT systems, applications and underlying database systems. The complexities do affect the overall IT Audit efforts at SAI Pakistan.

SAI Pakistan has detected overpayments while auditing different systems but no assistance has been provided to other agencies in detecting fraud or helping in investigations using these analytics tools.

**CAPACITY BUILDING**

Though SAI Pakistan started a bit late in IT auditing but once the need was felt for building capacity in this field, significant investment has been made in this area. There have been regular IT auditing trainings which have focused on all aspects of IT auditing. There have also been

efforts to incentivize the capacity building in this area and SAI Pakistan has a policy to reimburse CISA examination fee to those who qualify the CISA exam. This has resulted in development of a ready pool of CISA qualified resources.

In order to maximize the acceptance of technologies at SAI Pakistan, one aspect that has been addressed proactively and still being addressed in change management. Moreover, the incentive scheme has also motivated staff at SAI towards enhancing their general ICT skills and particularly capacity enhancement in IT auditing.

Most of the capacity building in ICT technologies has been home grown at SAI Pakistan though the funding has come from World Bank in most of the cases.

## IMPACT OF ANALYTICS

As a standard practice, the findings of ICT analytics are submitted to the senior management at SAI Pakistan as part of draft audit reports. Recommendations for improvement are also part of the audit report. The details analytics reports are part of the supporting evidence on observations relating to ICT.

The result of audit recommendations is an improvement in the control environment at the auditee organizations. For example, there have been significant data quality improvements in the SAP based accounting systems of Government of Pakistan resulting from the regular Data Sufficiency Analysis conducted by Audit. Similarly management in different entities has effected recoveries based on the data analytics conducted by SAI Pakistan.

In general, all IT auditing and data analytics efforts are focused towards improving overall governance framework with emphasis on optimizing control environment and addressing risks.

## REFERENCES

1. Factors affecting e-government adoption in Pakistan: a citizen's perspective by Muhammad Ovais Ahmad, JouniMarkkula and MarkkuOivo, Department of Information Processing Sciences, University of Oulu, Oulu, Finland

2. E-Government Strategy and 5-Year Plan for the Federal Government : Electronic Government DirectorateMinistry of IT

3. http://www.dawn.com/news/56846/electronic-transactions-ordinance-promulgated

4. Center for information systems Auditing, Audit and Accounts Training Institute Lahore,