

**SUPREME AUDIT OFFICE AFGHANISTAN**  
COUNTRY PAPER  
ON  
***LEVERAGING TECHNOLOGY TO ENHANCE AUDIT QUALITY AND  
EFFECTIVENESS***

## **1. Introduction**

1.1 Technology has made a great impact to both public and private sectors where core systems, processes, procedures and rules are increasingly transformed and innovated for a more efficient and effective operation as well as service delivery. Leveraging on technology undoubtedly improves and increases the means of doing business as well as delivery of public services. For instance, E-Government/Information Communication Technology (ICT) has become a current trend which shows the public sector's commitment to invest in ICT to improve its internal management as well as the services it delivers to the citizens through an innovative use of communication channels and facilities (Chen, 2003). E-Government/ICT projects benefit various stakeholders including government and citizens. Among the benefits that would be harnessed by the government agencies, include cost reduction, work efficiency improvement and customer satisfaction. Apart from that, e-Government/ICT can benefit the citizens by getting more self service facilities such as online passport renewal and payment of utility bills where citizens accessibility to such services are not constraint by time and space. In addition, they can have more control over their transactions as well as a better understanding of governmental services. This leads to a significant decrease in time spent transacting for the desired services and will ultimately improve customer satisfaction.

1.2 Supreme Audit Institutions (SAIs) are directly impacted where the audit approaches and methodologies in this environment have now transformed even though our audit objectives remain the same. Inevitably, SAIs will have to leverage on technology in order to increase audit efficiency and effectiveness which ultimately improve the overall quality of the audit. The use of technology by SAIs will allow for wider audit scope and coverage; improved timeliness in conducting the audit and collecting evidence; more in-depth data analysis and interrogation; and, better

communication and reporting. Consequently, SAIs would be able to obtain better quality information for audit and helps improve the integrity of the overall audit. The changing environment of the government sector through the implementation of e-Government/ICT projects resulted in the increasing prevalence of technology and this will not only bring about significant impact to the way we deal with the government sector for social and economic services or as government employees in performing our day to day operations; but more importantly the technology-based environment brings together with it the issues of governance, security, risks management, legal mandate and internal controls. Therefore, it is crucial to identify and assess on how these issues are/have been addressed in this environment.

## 2. Usage of Technology In Public Sectors

2.1 The implementation of e-Government/ICT heralds the beginning of a journey of reinventing the government by transforming the way it operates, modernising and enhancing its public service delivery. E-Government/ICT seeks to enhance the convenience, accessibility and quality of interactions with the public and businesses at large. Simultaneously, it improves information flow and processes within the government, improve the speed and quality of policy development, and improve coordination and enforcement. This enables the government to be more responsive to the needs of its citizens. The objective is to provide efficient and quality service to its customers comprise of the citizens and businesses. ICT Strategic Plan which is the blueprint that defines the vision, strategic direction and framework for the usage of ICT in the Public Sector. These ICT initiatives have great impact on the e-Government/ICT service delivery as well as the overall governance of the public sector.

### Questions:

#### 1. *Discuss the status of e-Government/ ICT carried out in your country.*

**SAO Afg:** The overall approach and status of e-Government/ICT and other IT enabled Services (ITeS) in the government and public sector in Afghanistan can be summarized as follows:

- Government of the Islamic Republic of Afghanistan in February 2008 announced its *Information & Communication Sector Strategy* for 2008-2013. Besides, encouraging and promoting spread of ICT sector for communication and digital revolution and as an important segment of revenue generation, the strategy set forth the objectives of increasing

application of ICT for: (a) literacy including for distance learning, (b) good governance and timely implementation of national elections, (c) promoting transparency and citizen access to public information through use of official websites, (d) promoting government efficiency, reducing costly waste through competitive procurement by utilization of ICT by all government institutions, (e) reducing corruption by adoption of ICT to streamline and automate for example, customs processing, procurement and licensing, (f) modernizing Afghan Post by using ICT to ensure reliable collection and distribution of mail, (g) hosting e-government application through Afghanistan National Data Centre, (h) citizens obtaining basic medical diagnosis by remote ICT access, (i) smart cards that may be used as the basis for a National Identity Card, National Healthcare Card and other official and commercial purposes (j) developing telecom and ICT infrastructure such as broadband, fibre-optic, etc. and also promote government to citizens and vice versa, government to business and vice versa interaction.

- In January – March 2011, government presented *e-Government Strategy* and *e-Government Programme*. It identified weaknesses such as limited awareness of e-Government's roles in public sector, isolated projects, lack of capacity and skill in e-gov implementation, etc. It outlined the main strategy of the e-gov as transforming the government operation and service delivery to better meet the people's expectations by utilizing more effectively IT-based systems and solution and more importantly to bring transparency for tackling corruption in public service delivery. It also reiterated strategy for accessibility of health, education and agriculture related information to people.
- In brief, the e-gov strategy of government is based on providing public information and quality services, modernizing public sector and public participation in governance.
- Government is implementing various *ICT/e-Gov projects*, e.g., *Expansion of Fibre Optic, Development of ICT in Afghanistan, e-Gov project* (by Min of ICT), *Computerized Passport System project and Electronic National ID Card projects* (by Min of Interior Affairs), *Management Information System, Information Technology & Agricultural Statistics project* (by Min of Agric. Irrig & Livestock), *Pension System reform e-Gov project* (by Min of Labour, Martyrs and Social Affairs), etc.
- Various electronic database facilities/financial management information systems have been/ are being implemented - payroll / HR management system in several ministries; software for estate management, Afghanistan FMIS for management of treasury, payment and financial reporting, SIGTAS for tax administration, ASYCUDA for custom data, Procurement and Budget related systems by the Min of Finance and its agencies.

**2. Explain on the governance, risk and control framework/structure which govern and regulate the e-Government/ICT implementation.**

**SAO Afg:** Ministry of Communication and Information Technology (MoCIT) is the nodal ministry for dealing with the ICT/e-Gov policy, strategy, and projects implemented. The ICT and e-Gov strategy and programme implementation strategy documents have provided various institutional and structural arrangements for governance and regulation of ICT/e-Gov projects and strategy, for example, ICT Council, Technology & Innovation Directorate, e-Gov Directorate, e-Gov Resource Centre, The agencies / ministries implementing ICT/e-Gov projects are also responsible for risks and control frameworks.

For the specific sector or ministries FMIS or electronic database facilities, they have their own structures and control frameworks as well as implementation plans.

**3. Do you have a Strategic Plan elaborating on the strategic thrust areas for ICT development?**

**SAO Afg:** As mentioned above, Govt. has issued ICT development strategy document.

However, so far, SAO has not been able to engage seriously with the ICT development either through audit or through advisory role.

**4. Based on your SAI's experience in the e-Government/IT projects implementation, what is/are your SAI's opinions on the effectiveness of the ICT framework structure which governs and regulates the projects implementation in meeting your governments' e-Government/ICT overall goals.**

**SAO Afg:** So far there has been very limited or no involvement through audit or advisory role of the SAO in ICT sector development. Going by the slow pace of implementation of ICT/e-Gov projects including various FMIS projects and delay in their implementation or full operation, suggest that despite governance and control structure, project implementations are less effective and delayed.

**5. What are the challenges and areas for improvement on the e-Government/ICT framework?**

**SAO, Afg:** e-Gov / ICT framework need to take into account the weakness identified by the last ICT/e-Gov strategy survey such as limited awareness of e-Government's roles in public sector, isolated projects, lack of capacity and skill in e-gov implementation.

2.2 In term of legal perspective of e-Government/ICT, it requires reasonable assurance of not being affected by illegal activities undertaken by computer hackers and cyber criminals. In this regard, it is important that sufficient safeguards are in place in order to ensure security and privacy of information and data management. Therefore, a strong ICT Governance framework supported by appropriate legislations need to be enacted to address the legal requirements of specialised, complex and highly technical ICT sector.

2.3 There are risks during the whole lifecycle of e-Government/ICT services at the pre-implementation, implementation phase and the post implementation phase. There are other risk in more technical areas for instance the absence of methodological guidance and/or not using appropriate ICT standards may jeopardise the interoperability between different e-Government/ICT applications. Other risks exist in the area of basic IT components and facilities, such as web

portals, content management systems, forms servers and basic services for transaction, including security services.

2.4 Therefore, strong risk management and control framework need to be implemented within the development of e-Government/ICT infrastructures. A recommended control framework to be adopted is CoBIT issued by ISACA.

**Questions:**

**1. With the implementation of e-Government or ICT development in your country, discuss on legislations being amended or new legislations being introduced to address the issues of governance security, risks management, legal mandate, internal controls. Any specific amendment/s with regard to your SAI's' mandate with the implementation of e-Government/ ICT?**

**SAO Afg:** No separate or specific IT Act / legislation available. Government has proposed an *Electronic Transaction and Electronic Signatures Law*.

**2. How are risks evaluation and management at the pre-implementation, implementation and post implementation coordinated and implemented according to the framework adopted?**

**SAO Afg:** There is no declared framework by the government. There is no involvement of the SAO.

**3. What is your SAI's role in this area? Elaborate on the SAI's findings so far.**

**SAO Afg:** SAO so far has not undertaken audit of any FMIS or electronic database facility or ICT/e-Gov projects. SAO has inadequate IT audit related in-house skills and capacity.

2.5 The introduction of e-Government/ ICT has significantly impact SAIs in terms of approach and methodologies where new knowledge, skills and competency need to be acquired by auditors. Auditors are required to have combine general ICT background knowledge and in-depth knowledge of ICT platforms with skills related to the collection and analysis of electronic audit evidence. SAIs can benefit by

participating in INTOSAI or at the regional level with ASOSAI Working Group on IT Audit which promote exchange of experiences, views and ideas with other member countries on matters relating to best practices in governmental IT Audit especially e-Government auditing. Collaboration with professional body such as ISACA could further enhance ICT auditing competency and kept SAIs updated with latest development in this area. e-Government/ICT implementation has also brought about a new role to SAIs which is rather unconventional and in this regard SAIs have addressed this quite cautiously for fear of being misconstrued as compromising SAIs' objectivity and independence. Due to SAIs' vast experience and knowledge in government operations, systems and internal controls, SAIs are acknowledged as experts in this areas and as such SAIs will be invited to give their objective and independent views during the pre-implementation phase of e-Government/ ICT project.

**Questions:**

**1. How has your SAI approached the capacity development of specialist ICT auditors? Has your SAI engaged external experts in specialised ICT areas?**

**SAO Afg:** As mentioned above, SAO has inadequate IT audit related in-house skills and capacity at present. However, through various capacity development programmes, including through participation in the IDI-UNITAR online courses, SAO is making effort to create a pool of IT/ICT related auditors.

So far, SAO has not engaged external experts in specialised ICT areas, but as per SAO's policy, it is planning to engage such experts in near future for undertaking IT audit of a few FMIS/electronic database facilities.

**2. Is your SAI involved at the pre-implementation of e-Government/ ICT projects as advisors? What measures or mechanisms are in place to ensure that there is no conflict of interest?**

**SAO Afg:** SAO is not involved in e-Gov / ICT projects.

**3. How does your SAI's role fit into the overall ICT Framework?**

**SAO Afg:** First priority of the SAO is to create a pool of IT audit / ICT related audit personnel and undertake IT audit of a few FMIS/electronic database facilities.

### **3. Auditing e-Government/ICT Environment**

3.1 ISSAI 1330.13 - The Auditor's Responses to Assessed Risks states that the auditor should determine whether it is appropriate to use audit evidence about the operating effectiveness of controls obtained in previous audits, and, if so, the length of the time period that may elapse before retesting a control.

3.2 IT auditing within the public sector encompasses the General IT Audit; System Development Audit; Performance Audit in IT environment; and lastly usage of CAATs in auditing. The IT related auditing includes techniques used for auditing around the computer, auditing through the computer and auditing with the computerise tools. The majority of the auditors who are involved in the financial and attestation audits are performing the General IT Audit as stipulated in the IT Audit Manual, which relates to the general controls and application controls of the accounting systems of the public sector organizations. Besides this, the IT audit team also perform auditing related to IT projects and system development and focus on the system development audit and performance audit on IT projects.

3.3 These suggestions indicate that the key to success in IT development projects is effective monitoring of controls applied by senior management and project management. In ensuring success of e-Government and IT implementation, the auditor also has a significant role. Traditionally, the auditor's role is to evaluate whether adequate controls within the project management and business processes are incorporated and validate the effectiveness of those controls. In other words, the auditor's primary objectives of auditing IT development projects are to:

- (a) Evaluate controls within the project management processes and proactively make recommendations to mitigate risks that may hinder achieving project objectives and goals.
- (b) Ensure that adequate controls are incorporated during the development phases of services delivery system processes before they are introduced to government services.

**Questions:**

1. ***Elaborate on the usage of IT tools by auditors in performing their financial and attestation audits.***

**SAO Afg:** At this stage, no full-fledged use of IT tools / CAATs are being made in performing financial and attestation audits. Since the Afghanistan FMIS (AFMIS) is used as by the government for treasury and payment management, sampling, data and report generation and analytical procedures are done for financial and compliance audit. Most of the analyses is based on excel sheet workings after obtaining the data from the AFMIS.

With external audit support underway, SAO is now scheduling training programmes for IDEA.

2. ***In respect of IT projects and system development, discuss how IT audit team perform their audit.***

**SAO Afg:** Not applicable

3. ***Elaborate on the SAI's findings on IT project failures in your country, if any.***

**SAO Afg:** Not Applicable, as so far no review has been done.

4. ***Discuss the effective monitoring control using technology to prevent the future project failure.***

**SAO Afg:** No comments.

#### **4. Technology-based Approach Through the Use of Audit Tools**

4.1 Analysing massive volumes of data requires IT's involvement to extract data from target systems or external environments, perform data cleansing routines to format the data analysis and automate the loading of data with the usage of audit tools is referred to as Analytics.

4.2 The extensive usage of ICT by government has consequently resulted in scenarios where much of the traditional audit trail is disappearing. The issuance of some standard and guidelines related to the impact of IT on public sector control signal the diminished likelihood that a traditional 'audit around the computer' approach will be appropriate. As a result, auditors are required to incorporate state-of-art auditing software application such as analytics in the auditing process. This

will enable the auditor to perform the audit more effectively because the scope and volume of transaction being analysed can be increased. Software's widely used by SAIs such as ACL, IDEA and Microsoft Excel which can run analytical functions in performing the audit.

#### **4.2.1 Data Gathering and Data Access**

Data is likely need to be extracted from a central database or from individual departmental databases. In many organisations, the databases are controlled by the IT Department or Management Information System (MIS) Departments. Cooperation from these departments is crucial to ensure Analytics implementation is successful.

#### **4.2.2 Data in Difference Platform of Database**

IT industries operate under multi platforms such as Oracle, SAP, Open source and etc. Analytics users need to have a good understanding of the host system to enable downloading of the correct data with the right format so that data is readable by the software. Constant usage of analytics has enable auditors to explore innovatively different ways and techniques in inter-departmental data matching.

#### **4.2.3 Data Security, Reliability and Confidentiality**

Data security is one of the issue of concern to auditees. Due to concerns that auditors may introduce computer viruses to their system or compromise system security in other ways. Security, reliability and confidentiality of data that is downloaded or transfers from the clients' system to the auditors should be emphasized. The evolution of cloud computing utilization in e-Government/ICT has raised concern regarding security and integrity risks. One of the biggest concerns with cloud data storage is the verification of data integrity at untrusted servers, and how to deal with sensitive data. Data integrity issue is also challenged by emerging issues such as big data. The auditor needs to ascertain the reliability of data in order to give opinion on the specific subject being audited.

**Questions:**

**1. Discuss on audit tools used by your SAI in performing data analytics. What is your coverage in data analytics?**

**SAO Afg:** As mentioned above, at present mostly excel sheet based data analytics is done using the information generated obtained primarily from the AFMIS (treasury and payment management FMIS) and raw data from the entities. SAO is now planning to use other CAATs and data extraction and analysis tools after the training being organized.

**2. Have your SAI make used of analytics on unstructured data, performing data mining and collecting of audit evidence?**

**SAO Afg:** As mentioned above.

**3. To what extend has your SAI make use of data analytics in your audit?**

**SAO Afg:** Use of data analytics include – for sampling, budgetary and actual comparisons, analytical procedures, confirming certain assertions, using for trend analysis and graphical presentation for audit report writing, etc.

**4. What are the constraints faced in obtaining access to data for analytics. This can either be due to system complexities, data from different sources and platform, SAI's capacity and capabilities, liability and compatibility issues, etc.**

**SAO Afg:** Main reason of constraints faced in obtaining access to data for analytics is SAO's capacity and capabilities.

**5. Has your SAI engage in the form of analytics technique to assist in fraud deflection or investigations? Please elaborate.**

**SAO Afg:** No. except some trend and analytical procedures.

## 5. Capacity Building

5.1 Training for the use of information technology serves two purposes. First is transferring information and the second one is to help overcome or reduce resistance to the use of technology. Successful Analytics implementation such as data access and reliability, IT knowledge, expertise and experience of audit teams, the importance of training and Analytics availabilities should be given due attention because they will contribute to an effective audit planning, implementation, gathering of audit evidence and reporting.

5.2 In order to ensure effectiveness, training should be embedded in auditors' competency building plan. It is encourage for auditors to attend training on analytics. Its enable junior auditor to possess the skill to do data mining and interrogation hence it will help them to execute audit plan prepared by senior auditor.

**Questions:**

**1. Discuss on development of staff skills in technologies. Explain your capacity building programme. If not, what is the available support?**

**SAO Afg:** SAO's capacity building programme in IT/ICT/e-Gov related areas is based on in-house training programme with the help of external audit support consultancies (which is present at now), IDI-UNITAR organized e-learning / online course and programmes and a few supports from other SAIs.

We look forward for more concerted support from the INTOSAI-IDI and other SAIs in this area.

**2. Discuss the techniques that could be employed to maximise the acceptance of technologies.**

**SAO Afg:** SAO's audit personnel are willing and ready to learn and upgrade their capacity. SAO agrees with the strategy that such trainings should be embedded in auditors' competency building plan though in addition, some focused walk through, training and on the job hand holding would also be required initially.

**3. Are there any involvements from external parties in ICT capacity building?**

**SAO Afg:** External audit support consultancies (which is for audit but also undertake trainings selectively), IDI-UNITAR and a few SAIs.

## 6. Impact of Analytics

6.1 The following points highlight the impact of analytics to auditing;

### 6.1.1 Improvement in Audit Coverage

Comparisons can be made of audit coverage before and after using Analytics. Most analytic software is able to process large volume of data from various sources especially if used together with data mining technology. Therefore auditor can cover wider audit coverage and in certain

circumstances where internal control is weak, hundred percent audits can be carried out.

### **6.1.2 Resource Savings**

Resource saving in this context does not refer to quantitative measurement in monetary value. It refers to situations where audit analysis using Analytics help to reduce errors and improve efficiency in the organisation. It is also to expedite the audit process and cut down the numbers of days required to perform the audit.

### **6.1.3 Assurance on Governance, Risk and Compliance**

Analytics has been used most frequently as the problem solving aid and data integrity testing. Analytics is a wide range of techniques and tools to automate the test procedures on public sector control, obtaining evidence and data analysis. Many organizations has used analytics in data integrity testing; problem solving, planning tools and file interrogation tools.

6.2 Findings from an audit are usually communicated to SAI management and auditees through the audit reports. Included in the audit reports can be recommendations made for improvement of the related business processes and public sector controls. Those findings and recommendations are supported by analysis carried out using Analytics. Actions for improvement will be taken based on the recommendations made to improve governance, risks and controls in SAI.

#### **Questions:**

#### **1. Explain how the findings of analytic communicate to the SAI management.**

**SAO Afg:** Generally, limited analytics are done, most of which are by using excel sheet for either exploratory or confirmatory purpose. The same is used at both planning and reporting stage of financial audit (audit of the Afghanistan traditional annual accounts statements called Qatia statements). They are communicated to the management at planning and draft reporting stage.

**2. Discuss the impact of audit recommendation to auditees resulted from analytics.**

**SAO Afg:** In financial audit as well as compliance audit reports, based on analytics separate chapters about financial overview and budget implementation are provided to the auditees (government and its agencies) which include analysis and recommendations relating expenditure and revenue patterns, fiscal sustainability analysis, debt payment and interest repayment trends, budget utilization and project implementation trends, unadjusted advance payments, unclassified expenditures, etc. These are discussed by the national assembly and are duly taken into account by the government for their budgeting and financial management or corrective actions as required.

## **7. Conclusion**

The increasing prevalence of the technological solutions to improve the quality, efficiency and effectiveness of the operations as well as service delivery in both the public and private sectors is obvious. Leveraging technological advancement in the auditees environment brings benefits and enhanced the quality of the audit process. Auditors should embrace technology-based audit approach by introducing new audit procedures, techniques and tools relevant to such environment as well as giving due professional care to the risks associated to this approach. Indirectly this will enhance the audit quality as well as the integrity in public sector service delivery.