

Establishing a digital audit trail – Country paper by SAI Pakistan 27th INTOSAI WGITA meeting

1. Introduction:

In an IT environment relying on paper trail to review and give assurance on transactions and events has become increasingly difficult for public sector auditors. The digital audit trail linking all activities of a transaction irrefutably needs to be established by the auditor to be able to build reasonable assurance on the operations of the auditee. For SAI's this avenue presents challenges which need to be met and way forward achieved.

In this context this paper looks to cover the various aspects of a digital audit trail, challenges faced by SAI auditors in establishing it and the benefits that can be drawn from it. The existing practices, rules and regulations present in Pakistan on the subject are also linked up in the paper.

2. Audit Evidence

Amongst the major activities performed by auditors during any audit exercise is collecting relevant audit evidence in support of their observations. These audit evidences form the factual and logical basis for the formation of audit findings and invariably an audit opinion as well.

ISSAI 100 ¹describes public sector auditing as a systematic process of *objectively obtaining and evaluating evidence* to determine whether actual conditions conform to established criteria. The ISSAI further goes on to highlight the importance of audit evidence by stating that,² public sector auditing contributes good governance by providing intended users with independent, objective and reliable information, conclusions or opinions based on *sufficient and appropriate* evidence relating to public entities.

3. Building an audit trail

¹ Para 18 of ISSAI 100

² Para 20 of ISSAI 100

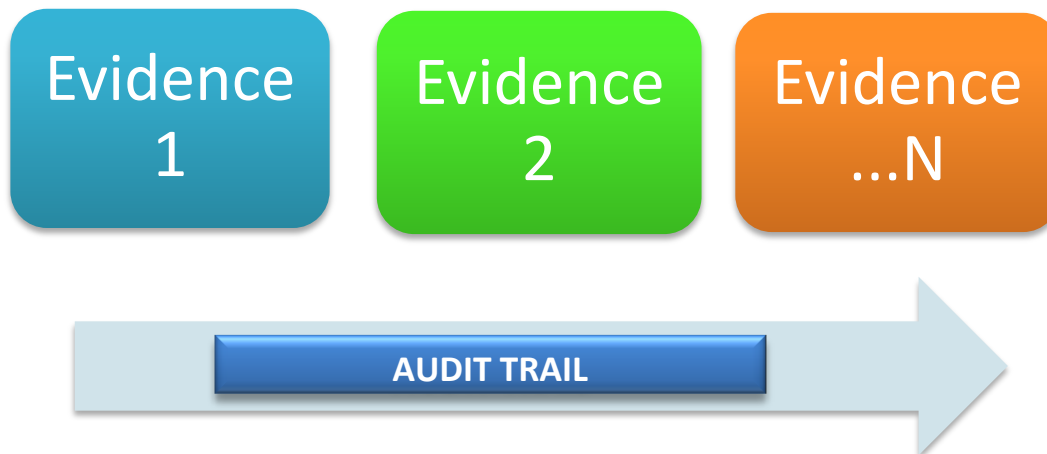
Singular audit evidence in isolation, in most cases, does not meet the requirement of an auditor to firm up his/her observation/finding. Doing so may lead to mis-interpreted conclusions as the evidence may be giving a myopic view of the auditee entity and other collaborating audit evidences proving the same may exist. Auditee organizations are invariably large and complex bodies with multiple roles and functions being exercised by different individuals shaving specifics roles and responsibilities. It is only by viewing the complete cycle of entity's transaction/event that an objective analysis can be made on the underlying function of the auditee organization.

Relevant audit evidences linked together to form a complete picture of the audit entity's transaction/event, in a subject case, form *an audit trail*. It is the existence of this audit trail comprising of various interlinking audit evidences that constitute the objectivity and assurance of the public sector auditor with regards to his/her work.

For example in case of a typical procurement transaction by an auditee organization, the audit trail may comprise of audit evidences relating to:

- Need for the procurement
- Funding for the procurement
- Approval for the procurement
- Transparency and open competition in tendering
- Application of taxes
- Authentication of vendor
- Reconciliation of cash disbursement

An audit trail comprising of the above minimum components helps the SAI auditor to substantiate his/her conclusions and opinions. Illustratively:



4. Traditional paper based audit trails

Traditionally public sector auditors rely on preparing a paper based audit trail by linking together different pieces of evidence in a logical coherent manner. For example while preparing an audit trail for a recruitment process undertaken by an entity, an auditor would look to put together the³ following paper based evidences:

- The sanction of posts by competent authority against which the requirements are to be made.
- The advertisement for the posts.
- The formation and TORs of the selection committee.
- The results of pre-qualification exam (if any) taken by candidates.
- The interview marks awarded by the selection committee.
- The testimonials of the successful candidates.

Collection of the above pieces of information would enable the auditor to draw an assurance whether the recruitment undertaken by the auditee was transparent or not.

During all major types of audit undertaken by SAIs' including Financial Audit, Compliance Audit and Performance Audit, audit documentation containing paper based audit trail has been a corner stone of the overall audit exercise.

³ Steps taken during Audit of PITB (Punjab Information Technology Board) by SAI Pakistan

5. The digital audit trail

The globalized IT environment has significantly altered the operations of auditee organizations. More and more audit organizations have moved on to IT solutions for their business needs. ERP solutions and paper less working environments are being adopted by my more and more public sector entities. Hence file based environments are quickly being replaced with a digitalized work space.

All this has had a profound impact of the audit exercise of the SAIs. The paper trail has just gone missing. It now stands replaced with digitalized audit evidence. The public sector auditor can no longer rely on incoherent pieces of manual information to establish their audit analysis. For them it has become necessary to change their auditing approach and move towards establishing a digital audit trail for their audit evidence collection.

A digital audit trail represents a set of digitalized (soft) irrefutable evidences linked in a logical manner to show a complete event or transaction/event related to an auditee organization.

6. Establishing a digital audit trail

Making a digital audit trail comprises of at least the following two steps:

Understanding the IT Environment of the auditee business: Before any audit evidence can be collected it is imperative to have a sound understanding of the IT processes of the entity. Who is authorized to do what ? What steps are involved in the completion of a particular event in the auditee organization? What are the business critical IT applications and how are they managed? These are fundamental aspects that an auditor has to review for developing an understanding of the IT environment of the audit business.

For example a public owned ⁴gas distribution company uses an IT based Inventory system. In this case it is necessary for the auditor to have an understanding of

- The basic features of the inventory system application.
- The transaction by which new store items are added in the warehouse.
- The aging and depreciation of the stored items.
- The inventory-labeling methodology.

⁴ Example is based on attributes of inventory management used by SNGPL (Sui Norther Gas Pipeline Ltd) Company, observed during compliance audit by SAI Pakistan

- The transaction by which store items are disbursed.
- The user management roles for the inventory management system.
- The monthly /year-end stock closing and evaluation processes.

Collecting the IT evidences: Another important aspect of establishing a digital audit trail is to collect IT evidence in such a way that it is irrefutable subsequently. With IT evidence there is always the risk that the IT condition may be altered after it has been noticed by audit. Hence through time-stamping and other data acquisition techniques care has to be taken to collect evidence in a reliable and certain manner.

Furthermore digital audit trail can be categorized in two broad categories:

Digital trail of Financial Transactions: Digital evidence that answer questions such as, what payment was made, when it was made, how it was made etc? Same scenarios exist for liabilities and accruals. Banking transactions, online transfers, third party disbursements etc. fall under this category.

Digital trail of Non-financial processes: Digital evidence relating to the business specific details of an entity. For example for a HMIS (Hospital Management Information System), the patient information, medicine inventory system etc.

Having given a brief review of subject under discussion it is important to touch upon the various challenges and opportunities provided by a digitalized audit trail.

7. Challenges faced in establishing a digital audit trail:

- **Complexity of digital transactions:** Digital processes have enabled organizations to perform a whole new range of business activities that was not plausible in a manual transaction environment. Hence digital transactions are diverse and complex. For example a typical e-financial transaction these days can entail, the auditee organization opening up an LC (Letter of Credit) in an international Bank, goods being earmarked in a separate continent, goods being insured online by a another party, goods being inspected at site by yet another service provided, legal trade agreement of sales and service of goods, a financial bond with the another bank(s) if the goods have been manufactured or acquired on credit, yet another contract (with online payment) for inwards country carriage and last but not least all the deduction of taxes in between!!

Hence the SAI auditors are constantly faced with the challenge to keep face with the current trends in IT solutions to be able to properly understand and establish a digital audit trail.

- **Assessing data consistency:** In many cases the public sector auditor gets flooded with lots of digital data. Not most of it is relevant for audit review as the auditor follows a risk based auditing approach. Hence the auditor first has to select a data-set to review. Next step is to ensure that the selected data-set has reliable and accurate information. Hence the internal controls in place for recording, updating and retaining the subject digital information have to be assessed. This offers a significant challenge for the auditors.
- **Translating digital evidence in to an audit report:** On one hand audit reports are meant to be presented to legislative forums in easy to comprehend manner with complete clarity. On the other hand error and anomalies found in a digital audit trail are technical in nature. Translating observations found in a digitalized environment especially in case of non-financial transactions is a real challenge for the public sector auditor.

Notwithstanding the challenges faced, digital audit trail also provides numerous opportunities for public sector auditors to further add value to their audit findings.

8. Opportunities presented by a digital audit trail:

- **Comprehensive view of the auditee operations:** Paper trail had the inherent disadvantage that only pieces of information could be analyzed separately and then linkages made. With a digital trail a complete view of all events relating to a transaction can be analyzed. Starting from an initiating action all subsequent actions indicating what events took place and by whom and at what time can be reviewed. For example while reviewing a pension finalization case, a typical digital trail would include, i)⁵the trigger for initiating pension processing of an employee, ii) reconciliation of final emoluments and any liabilities of the retiring employee, iii) approval of pension disbursement by concerned authority, iv) generation of pension payment instrument and lastly v) bank reconciliation document generation.

⁵ Example is based on pension disbursement made through accounts office under Controller General of Accounts Pakistan.

- **Cross-sectional analysis:** Using modern IT auditing tools complex data analysis can now be formed on multiple sets of digitalized information. This can greatly in carrying out performance audits and forensic studies.
- **Real-time auditing:** By establishing audit check-marks/flags within the applications being used by the auditee organization real-time auditing can be implemented by public sector auditors.
- **Reduction in auditing time:** By establishing digital audit trails analysis can be done on the acquired data in a shorter span of time as compared with paper based trail technique where-in an analytical data set first has to be populated and then analyzed. This has the overall impact of reduction in the auditing time.

9. Digital transactions and measures taken by Pakistan

In Pakistan both private and public sector are rapidly embracing the IT revolution. At a rapid pace businesses small and large are adopting off-the-shelf IT solutions to run their enterprises. At the same pace financial transactions are now available in numerous options such as online payments/transfers, internet banking, mobile banking etc. As paper money gets replaced with plastic money and digital transactions, relevant policies and regulations have been formulated to enforce sound control over such operations. Some measures in this regard are as follows.

Electronic Transactions Ordinance: It was enacted in 2002⁶“to recognize and facilitate documents, records, information, communications and transactions in electronic form, and to provide for the accreditation of certification service providers.”

This ordinance laid out the basic framework for managing electronic transactions. Some of the highlights of this ordinance are:

- It describes the procedure for retention of electronic record.
- Electronic signatures have been defined in the ordinance
- An Electronic Certification Accreditation Council has been provided for.
- Some of the main responsibilities of this council include, to ⁷grant and renew accreditation certificates to certification service providers, their cryptography services and security procedure. Revoking and suspending accreditation certificates has also been empowered to the council.

⁶ Electronic Transaction Ordinance 2002

⁷ Clause 21 of Electronic Transactions Ordinance 2002

Payment Systems and Electronic Fund Transfers Act: It was promulgated in 2007⁸ to supervise and regulate Payment Systems and Electronic Fund Transfers in Pakistan and to provide standards for protection of the consumer and to determine respective rights and liabilities of the financial institutions and other Service Providers, their consumers and participants.

10. Use of Digitalized audit trail by SAI Pakistan:

SAI Pakistan takes advantage of using digitalized audit trail wherever the same is plausible considering the state of IT implementation in auditee organization.

All civil government departments have their Financial and HR information maintained in an SAP ERP system. Audit teams start preparing the digital audit trail at the desk audit stage by accessing SAP record of the selected department. A risk based approach in sampling and selection of audit areas is done.

The digital audit trail is then used extensively during annual compliance audit exercises. Findings based on digital audit trail “source data” are made after due analysis by the field audit offices.

Subject specific Data Sufficiency Analysis reports and Information Systems audits are also routinely carried out by the SAI. This is having the overall impact of improving the internal controls in the auditee organizations.

Meanwhile in order to keep the auditors of the SAI at pace with the current trends in IT, comprehensive IT training programs are undertaken by the SAI. A dedicated Center for Information Systems and Auditing has been setup at the Pakistan Audit and Accounts Academy for the training of the SAI auditor in IT audit techniques. International certification trainings are also carried out for the auditors. Recently the certifications being pursued are CISA, CISM, ACL and CFE. Moreover diversified auditing topics are also being reviewed for future needs through workshops. Some important workshops held in this regard were on “Bank Audit” and “Forensic Accounting”.

11. Conclusion:

IT interventions in government organizations are rapidly changing the business process of these entities. The traditional paper trail is being replaced with a digital trail which comes with its own set of risks, challenges and opportunities. SAI’s need to develop sound efficiency in reviewing and forming digital audit trails in order to maintain the reliability and quality of their audit reports.

⁸ Payment Systems Electronic Funds Transfer Act 2007