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BUILDING RESILIENT INSTITUTIONS: ADAPTING TO
ENVIRONMENTAL DYNAMICS – EXTERNAL AUDIT
PERSPECTIVE

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The Scientific Conference was organized to mark the 100th anniversary of the Supreme State Audit

ALBANIAN SUPREME AUDIT INSTITUTION SCIENTIFIC CONFERENCE

TITLE

***“BUILDING RESILIENT INSTITUTIONS: ADAPTING TO ENVIRONMENTAL
DYNAMICS – EXTERNAL AUDIT PERSPECTIVE”***

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OF THE HEAD OF ALSAI
DR. ARBEN SHEHU**

PREPARED THE PUBLISHING:
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STRATEGIC PLANNING AND PROFESSIONAL DEVELOPMENT

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Foreword by the Chairman of the Albania Supreme Audit Institution

Dear reader,

It is with great pleasure that I address you with this foreword to the publication of the proceedings of the scientific conference held on June 6–7, 2025, in the framework of the 100th anniversary of the establishment of the State Supreme Audit Institution—a historic milestone that finds our institution stronger, more open, and more committed than ever to fulfilling its constitutional mission.

On this significant anniversary, we chose to reflect and share knowledge on the role and responsibility of Supreme Audit Institutions in times of change. The theme of the conference, “Building Resilient Institutions: Responding to Environmental Dynamics – An External Audit Perspective”, emerged as a response to new challenges related to technological transformation, the climate crisis, social dynamics, and the growing need for deeper transparency and accountability in public governance.

The conference brought together representatives from Supreme Audit Institutions across the region and beyond, as well as international experts, academics, and professionals from the field. It served as a platform for exchanging best practices, fostering collective reflection, and strengthening professional cooperation. Over the two days of proceedings, a series of high-level papers were presented, addressing key topics such as quality management in line with international standards, digitalization in auditing, institutional capacities, and impactful audits.

This publication summarizes the fruits of that conference and represents a valuable contribution to the professional literature of public sector auditing. It is a concrete testament to our commitment to advancing the mission of the institution—not only through control and oversight but also through vision, critical thinking, and leadership in reform.

In this centennial jubilee of dedicated service to the state and its citizens, we are not merely celebrating the past. We are committing to the future—to a State Supreme Audit Institution that is more innovative, more adaptable, closer to the citizen, and more integrated into the global network of Supreme Audit Institutions.

I sincerely thank all contributors to this publication: the authors of the papers, panelists, our national and international partners, and the staff of the institution for their dedication and professionalism in making this event possible. Let us continue working together to build institutions capable of facing complex challenges and delivering added value for the public good.

Sincerely,

Arben Shehu

Chairman

Albanian State Supreme Audit Institution



Section 1

SCIENTIFIC PAPERS

**Section
1.1**

**EVOLVING AUDIT
METHODOLOGIES FOR
RESILIENCE**

Paper 1: Challenges of Implementing International Quality Management Standards in Kosovo's SAI (SoAQM) – National Audit Office of Kosovo

Abstract

The International Standard on Quality Management (ISQM-140) addresses the responsibilities of the Supreme Audit Institution (SAI) to design, implement and operate a quality management system for conducting audits that have constitutional and legal mandates.

The objective of the SAI of Kosovo is to consistently and consistently perform quality audits. The design, implementation and operation of a quality management system enables the performance of quality audits, as it provides the SAI with reasonable assurance that the objectives of the quality management system, as set out in the regulatory requirements, have been achieved.

Quality audits are achieved by planning, performing and reporting on engagements in accordance with professional standards and applicable legal and regulatory requirements. Achieving the objectives of these standards and implementing the requirements of applicable laws and regulations involves the exercise of professional judgment and, where applicable, depending on the type of audit, the exercise of professional scepticism.

The quality management system should function continuously and respond to changes in the nature and circumstances of conducting audits, addressing key elements, the SAI's risk assessment process, governance and leadership, ethical requirements, acceptance and specific commitments, audit performance, resources, Information/communication, and the process for monitoring and correcting deficiencies.

The research shows that the National Audit Office has integrated the quality management system into the organizational structure which helps it achieve strategic objectives and provides sufficient assurance that its processes are in accordance with the International Standards of Supreme Audit Institutions (ISSAI-140), as well as with applicable legal and regulatory requirements.



Mehmet Muçaj

Director of the Financial and Compliance Audit Department.
National Audit Office of Kosovo



Ramadan Gashi

Assistant Auditor General
National Audit Office of Kosovo



Muhamet Balaj

Director of the Department for Strategic Planning, Reporting, and Analysis
National Audit Office of Kosovo

Keywords:

quality management, quality management system, SAI objectives, elements of the quality management system.

I. Introduction

The purpose of the ISSA 140 standard is to establish the organizational requirements that SAIs should follow for quality management. It examines the role and responsibilities of SAIs at the organizational level and is applicable to all types of engagements covered by the ISSAs. This standard can also be used for jurisdictional and other activities performed by SAIs. ISSA 140 is complemented by other INTOSAI statements that relate to quality management for specific types of audits.

II. Literature review

To achieve strategic objectives and fulfil their mandate, Supreme Audit Institutions (SAIs) must ensure high quality in all aspects of their operations, resulting in reliable results. Quality must be integrated into the SAI's strategy, organizational culture, policies and procedures. The quality of an SAI's work and products has a direct impact on its reputation and credibility, influencing its ability to fulfil its mandate effectively.

The public interest is best served by an SAI when it carries out its engagements to a high level of quality standards. The establishment, implementation and operation of a quality management system helps an SAI to achieve these objectives and provides reasonable assurance that its processes comply with the International Standards of Supreme Audit Institutions (ISSAIs) and applicable legal and regulatory requirements.

The ISSAIs support independent and effective auditing by SAIs, which contributes to enhancing the credibility, quality, professionalism and integrity of public sector audits. ISAE 140 – Quality Management for SAIs is designed to be used in a manner consistent with other ISSAIs, taking into account the mandate of the SAI, national legislation and the structure, size and types of audits it carries out. This standard provides the necessary flexibility to adapt to organizational requirements, taking into account the unique characteristics of each SAI. (INTOSAI, QUALITY MANAGEMENT for SAI – ISSAI 140, 2025). The National Audit Office (NAO) of the Republic of Kosovo has integrated its quality assurance function into its organizational structure since 2010. Initially, this function was carried out by the Audit Methodology Department until 2016. Since then, it has been in the hands of the Audit Quality Assurance Department. During this period, various audit quality assurance activities have been carried out, including hot reviews that have helped identify and correct deficiencies in the audit process, while cold reviews have served as a basis for improving practices in the following years. This process has been continuously supported by experts from twinning projects over the years, with particular emphasis on the British and Swedish SAIs.

Quality reviews so far in the NAO have only covered the audit part, but with the entry into force of ISSAI 140 from January 2025, it is mandatory to cover other departments as well, so the quality review must include the entire organization.

Currently, the NAO has conducted a risk assessment and is reviewing the Quality Assurance Guide to fully adapt the requirements of the standard.

III. Methodology

During the research, the method of analysis of SAI processes in relation to the requirements of the current standard 140 and the level of creation of infrastructure in the full implementation of standard requirements was used in order to increase the quality in carrying out audit processes and not only.

The data were collected from the analysis of working groups and assessments/official reports. (ZKA, 2025) for Standard 140 (ISSAI 140) – Quality objectives related to this relevant component that is acceptable to the SAI of Kosovo.

Mainly, the analyzed components of the standard requirements have alluded to the definition of risk, level of risk, probability of occurrence, assessment of activities, identified challenges, as well as their monitoring.

The assessment body has analyzed the legal/regulatory infrastructure of the standard requirements, the mechanisms created by the SAI for implementation, as well as the level or degree of realization of these requirements and the main challenges in implementing the standard, thus reflecting the final impact on improving quality management processes in the SAI of Kosovo.

IV. Quality objectives and elements

The objective of the paper is to analyze the phenomena (causes) that reflect and may become challenges regarding the implementation of the quality management standard in the National Audit Office. The change to ISSAI 140 has resulted in the NAO facing challenges in this area.

“

"A system that includes all components of the organization (including auditors, managers, support staff: IT, HR, Finance, Ethics Committee, Logistics, etc.), identifies and assesses risks and weaknesses in the quality management system."

”

To evaluate this system, the National Audit Office appoints a professional, objective and integrity-based group.



According to Standard 140 (INTOSAI, 2025) - The quality objectives related to the components are all acceptable to the SAI of Kosovo.

1. Governance and leadership	Risk	Risk level (HML)	Probability of Occurrence (HML)	Assessment/Activity	Challenge	Monitoring
(a) The SAI demonstrates a commitment to quality within the SAI's organizational culture.	If the CAO does not show care for quality in a comprehensive aspect at the organizational level. Including all levels of the audit and non-audit part.	H	L	The factors that influence the mitigation of this risk are: a) Good organizational structure; b) Necessary resources; c) Good planning and adequate division of tasks and responsibilities. d) Appropriate and effective controls;	Maintaining resources and developing mechanisms to ensure/maintain quality at an acceptable level.	The monitoring process is carried out through continuous self-assessments and through independent assessments from within and outside the organization (SIGMA, or other SAI, etc.).
(b) leadership (not just senior officials and those who run the institution) is responsible and accountable for quality;	Failure to meet all strategic goals.	M	M	Some of the objectives depend on external factors making it difficult to achieve results. The NAO has fulfilled all the prerequisites required by legal procedures.	Amendment/supplementation of the NAO's mandate through the Law, financial independence, the NAO building issue (Audit, National Audit Office Strategic Plan, 2023).	Auditor General (AG)-continuously holds meetings with external stakeholders and discloses its strategic objectives.
(c) leadership demonstrates a commitment to quality through its actions and behaviors.	Failure to include all reports from the Quality Assurance Department (QAD) due to limited resources and failure to take timely measures to replace retiring staff in this department.	M	M	Due to resources, a limited number of audit reports are reviewed through the DSC and the issues they raise are addressed and also serve as models for maintaining consistency in other reports that do not pass this filter.	Timely handling of all issues raised and consistency in other reports.	The AG - has created a structure by delegating its duties to the Deputy AG, or 5 Assistant Auditors General.
(d) the organizational structure and assignment of roles, responsibilities and authority is appropriate to enable the design, implementation and operation of the SAI's quality	Inadequate organizational structure which does not contribute to the quality management system.	L	L	The NAO has an established organizational structure, the necessary experience and expertise, along with functional independence in internal organization.	Since the risk and likelihood are low, we consider that there are no challenges to highlight.	The monitoring process is conducted through annual self-assessments, which are forwarded to HR.

management system;						
(e) resource needs are planned and resources are obtained, distributed and allocated in a manner that demonstrates the SAI's commitment to quality.	Personnel movements (departures) can result in resources not being allocated properly.	M	M	We consider that in the span of 3 years, 25 experienced auditors have left the NAO.	The NAO estimates that retaining experienced staff is an ongoing challenge due to the lack of financial incentives.	This gap is filled through staff recruitment.
2. Relevant ethical requirements	Risk	Risk level (HML)	Probability of Occurrence (HML)	Assessment/Activity	Challenge	Monitoring
Quality objectives related to ethical requirements can confirm that the SAI and its staff understand and fulfill their responsibilities in relation to relevant legal and ethical requirements (such as those set out in ISSAI 130), including those relating to independence.	Audit and non-audit staff may not be knowledgeable about the ethical requirements under ISRAEL 130 and other internal regulatory acts.	H	L	The NAO regularly updates the Code of Ethics with the requirements of ISAS 130 and other legal requirements and conducts training on this on an annual basis for all its staff. Regarding the implementation of ethical requirements, the NAO also follows the example of prosecuting persons who have committed such violations.	We consider it a challenge to identify cases in a timely manner that do not comply with ethical requirements	Monitoring is carried out through mechanisms created by the PA such as (Ethics and Supervision Commission and Disciplinary Commission) which monitor the implementation of ethical rules.
3. Acceptance, commencement and continuation of commitments	Risk	Risk level (HML)	Probability of Occurrence (HML)	Assessment/Activity	Challenge	Monitoring
Qualitative objectives related to the performance of engagements can set expectations to the extent to which: (a) complies with ISSAIs and other relevant standards, applicable legal and	Inconsistencies of the regulatory framework and Ethical requirements of the NAO with the ISSA.	H	L	The NAO has created a working group, updated the regulations and the Code of Ethics with the latest requirements. A separate workshop was held on this topic.	NO	Through its regulatory procedures (relevant committees).

regulatory requirements and ethical requirements.						
(b) acts within its legal mandate or authority.	Failure to act within the legal deadline	H	L	The NAO has a clear mandate and has a long experience in respecting the legal mandate, possesses well-trained staff and harmonized regulations with systemic laws	NO	The NAO, through its procedures, manuals and specific guidelines, continuously monitors commitments.
c) has the capabilities, including time and resources, to do so.	Movements of experienced staff and continued requests from the Assembly for additional audits.	M	M	The NAO has taken steps to investigate the causes of staff departures, intervening in the most recent period to adjust salaries for some of the staff in accordance with the salary law, as this was the main cause professional staff movements.	The NAO is limited in terms of increasing salaries according to market demands and this makes it difficult to retain staff professional.	Management regularly obtains reports from staff regarding staff requests that express such requests as well as reasonableness of staff expressing motives for moving to other positions in the labour market
4. Fulfilling commitments	Risk	Risk level (HML)	Probability of Occurrence (HML)	Assessment/Activity	Challenge	Monitoring
(a) Engagement teams understand and fulfill their responsibilities in relation to engagements, including the overall responsibility of the individual responsible: (i) for managing and achieving quality in the engagement; and (ii) for sufficient and appropriate involvement throughout the various phases of the engagement.	Defining audit projects for which we do not have sufficient capacity or appropriate expertise to carry out audit processes.	M	L	Before allocating human resources to specific entities to perform the audit process, management analyzes the professional preparation of each auditor, professional competence and work experience by the nature of the engagement. After addressing these aforementioned elements, audit teams are determined for the respective audit entity.	The challenges encountered during this process are assessed from two perspectives: first, the lack of staff with the appropriate experience to perform the assigned engagement and second, the assessment of the complexity of the respective entities to determine the appropriate team to perform the assigned audit.	The monitoring process goes through several stages, but it is important to note that after each stage of work review, management provides information to the relevant audit team regarding the efficiency and effectiveness of the audit and on this basis, depending on the conclusion, decides on the new audit season.

(b) The nature, timing and extent of the direction and supervision of engagement teams and the review of the work performed is appropriate based on the specific features of the engagements and the resources assigned or made available to the engagement teams;	Failure to post all information in real time in SITA jeopardizes timely audit treatment and corrections, especially in the executive phase.	M	M	There are reported cases that occurred, which are isolated where the team did not enter the notes in SITA in real time during the executive phase.	The lack of real-time data entry makes it difficult for other management levels to monitor.	Monitoring is done through DDA and DSC.
(c) Engagement teams exercise appropriate professional judgment and professional scepticism;	Failure to exercise professional judgment by all members of the audit team	M	L	Usually, the recruited members are those who do not have crystallized knowledge and have difficulties with practical elements.	Maintaining a training package for new staff that includes key areas in audit processes.	Through the DENJ, statistics regarding the number and quality of trainings held for new staff joining the audit process
(d) consultations are undertaken on important issues, particularly on difficult or contentious issues, and the conclusions agreed upon are implemented and, where appropriate, documented.	1. Dilemmas (significant issues) are not raised for proper attention which risks "hiding" a problem that could have an impact on the auditor's opinion/report 2. The outcome of discussions regarding the significant issues is not known from all levels in audit process.	L	L	The engagement team for important issues in contentious cases, in addition to internal discussions within the team a director of department, also addresses the methodology and support department to obtain an opinion on certain issues. Also, depending on the case, consultation with the legal department is practiced, providing an opinion on a certain issue.	We consider the main challenge to be the failure to provide timely opinions from relevant departments due to cases that may arise in situations that could not have been planned.	The monitoring process is carried out at certain time periods. On the one hand, all opinions on such cases are published in the audit software in SITA and on the other hand, such issues are reported to management on a bi-weekly basis.
(e) Differences of opinion (e.g. within the engagement team, or between the engagement team and the engagement quality reviewer or individuals performing	We consider differences in opinion between the engagement team and directors to be a risk.	L	L	Depending on the function, differences in opinions are handled at supervisory levels determined by the organizational structure and ultimately the Auditor General decides on the final opinion that is consistent and applicable to all teams.	We consider the main challenge to be the untimely handling of issues during the audit process as well as delays in handling issues by other supervisory levels.	Such issues are monitored on a case-by-case basis and of course management prioritizes them.

activities within the SAI's quality management system) are brought to the attention of officials at the appropriate level of the SAI, resolved and documented appropriately.						
(f) audit reports are appropriate and address the expectations of interested parties without compromising the independence of the SAI.	Lack of communication during the audit process by the team and responsible officials with the relevant entity.	L	L	Draft audit reports in accordance with applicable law and our internal regulations are first discussed with entities within the 15-day comment period and then a document called a "confirmation letter" must be prepared by the entity itself and sent to the NAO. This confirmation letter states that the entity agrees with the auditor's findings and recommendations or does not.	Failure of the entity to respond within the time period according to legal acts.	Each final report goes through all stages of quality management until finalization and is then sent to the responsible persons, who in this way maintain the role of effective monitoring.
g) engagement documentation is collected in a timely manner and maintained and stored appropriately to meet the needs of the SAI and in accordance with ISSAIs and any additional requirements in law, regulations and other relevant standards.	Failure to submit audit documentation to SITA	L	L	The entire audit process from planning, execution and reporting goes through SITA.	We consider the lack of internet and technical IT issues as a challenge to function properly and placing files with symbolic names, etc. 	Monitoring is done in real time through supervisory levels.

5. SAI Resources	Risk	Risk level (HML)	Probability of Occurrence (HML)	Assessment/Activity	Challenge	Monitoring
Quality objectives related to SAI resources may include: (a) recruit, train and retain personnel who have the competence and skills to perform engagements of consistently high quality and to carry out responsibilities related to the operation of the SAI's quality management system;	The departure of professional staff with many years of experience and another risk is financial constraints to incentivize staff not to leave the office because of salary	H	M	NAO drafting a plan for retaining and preserving professional staff as well as incentive mechanisms that influence the preservation of professional potential within the office, such as promotion in ranks, professional training, collaborative environment and recognition)	Lack of sufficient financial resources to support staff. Without the possibility of creating a sustainable plan for retaining professional.	Monitoring is carried out through the human resources department, where in cases of dismissals, a reason is obtained as to what the causes of dismissals are, and based on this, personnel development plans should be continuously drafted within budget possibilities.
(b) personnel develop and maintain appropriate competence to perform their roles and are assessed and held accountable for this, or are recognized through appropriate incentives;	Failure to properly implement internal regulations for performance evaluations. Failure to provide financial resources for internal and external certifications.	M	M	The NAO takes into consideration elements such as: Advance professional development based on the evaluation of work results. Support employees in career development programs (international certifications). Identification of internal resources for certification as trainers in the field of compliance and performance.	Lack of an internal policy to select internal trainers for training purposes for the needs of the NAO	Monitoring is done through department supervisors where the performance evaluation process is carried out and then sent to the HR department. Based on this, a performance report is prepared and sent to the AP and this report is considered the basis for further development of the distribution.
(c) individuals assigned to engagements or to perform activities within the quality management system have the appropriate competence and skills, including	Engaging staff in tasks other than primary duties can influence quality management.	M	M	Mainly, the NAO has policies and systematizes employees with the appropriate competence and experience, but in certain cases, the need for additional commitments arises.	Lack of provision for additional tasks and fair distribution to specific tasks.	DBMNJ provides management with the necessary information so that the distribution is balanced according to professional competence at sea. Spec.

sufficient time, to perform their duties.						
(d) appropriate technological resources (typically IT applications, infrastructure and processes) are acquired or developed, implemented, maintained and used to enable the SAI's quality management system to function and the engagements to be carried out.	The collapse of the SITA system due to the lack of specialized maintenance staff, as well as technical conditions (outdated network, unsuitable location for the servers where data is stored, etc.).	H	M	The NAO has taken measures to specialize the relevant officer for the maintenance of the SITA system and has contracted the company that provides its maintenance and development.	Retention of professional staff that are related to IT processes and relevant incentives	On a monthly basis, reports are made on the main operating functions at SITA, and continuous measures are taken for EVP training for staff as a motivation method.
(e) appropriate intellectual resources (e.g. methodologies, guidelines, standardized documentation, databases, etc.) are acquired or developed, implemented, maintained and used to enable the functioning of the SAI's quality management system and the consistent performance of high-quality engagements;	Failure to update the methodology along with the relevant manuals in line with the innovations in the ISSAI.	M	L	There is a relevant department that continuously updates manuals and guidelines in accordance with innovations in the ISAS. In addition, there is continuous local and international monitoring regarding the level of implementation of the ISAS and the need for updating.	Limited resources in relevant departments especially in the audit methodology department.	Management is continuously informed on a biweekly basis through regular reporting.
(f) human, technological or intellectual resources obtained from external service providers are appropriate for use in the SAI's quality management system and in performing engagements.	Failure to accept sufficient bids in the tendering process for the provision of audit services on behalf of the NAO.	M	L	The CAO, through the e-procurement platform, conducts the tendering process, which has not been seriously challenged so far because there has been sufficient competition.	Selecting a suitable and professional company that maintains the already established image of the NAO.	The CAO annually plans a symbolic number of low-risk audits to contract them out.

g) The SAI is responsible for quality even when using resources from external service providers.	Avoidance of the quality level in addition to audits carried out by the NAO through its own resources.	H	L	There is a good oversight system because the private company reports in detail on the approach used and submits the report along with supporting documentation which passes quality control for further finalization.	Format of working papers, monitoring of the methodology used by the contractor.	The quality personnel, together with the contract manager and the quality assurance department, monitor this process.
6. Information and communication	Risk	Risk level (HML)	Probability of Occurrence (HML)	Assessment/Activity	Challenge	Monitoring
Quality objectives related to information and communication may include the following:						
(a) the information system identifies, captures, processes and stores relevant and reliable information that supports the quality management system;	The risk that the information system is not identified and stored within the office	L	L	The NAO has a well-organized organizational structure and through it, information is filtered depending on the purpose and forwarded to the relevant departments or units within the office.	There is no significant challenge.	Through periodic reports made by other units and departments to the respective supervisory levels
(b) the organizational culture recognizes and enhances employees' responsibilities regarding knowledge sharing within the SAI;	Since the nature of audit work is specific and audit teams change frequently, this may present a situation where employees do not share sufficient knowledge within the SAI.	M	M	The SAI undertakes proactive actions to reduce the projected risk to an acceptable level, such as conducting training sessions during the preparation of the audit plan and organizing discussion roundtables where all auditors have the opportunity to exchange knowledge or perspectives on specific topics. This contributes to strengthening awareness of the organizational culture.	Failure to hold discussions in a timely manner can also impact knowledge sharing within the SAI;	Monitoring is achieved through the organization of activities joint activities aimed at socialization and increasing team spirit are organized continuously; • Prophylactic activities for staff provided.

(c) Relevant and reliable information about the quality management system is communicated to personnel and engagement teams to enable them to understand and carry out their responsibilities within the quality management system or engagements;	Lack of information and its failure to reach the relevant personnel in a timely manner	M	M	The NAO has created a digital space for posting and sharing information so that the information reaches the relevant personnel and is reliable.	Situations when a defect suddenly appears due to technical digital reasons are considered a challenge.	Monitoring is done through updating information and ensuring that it is distributed in a timely manner.
(d) staff and engagement teams communicate within the SAI when performing activities within the quality management system or engagements.	Lack of communication and absence of defined individual and corporate responsibilities.	M	M	The SAI has developed a communication strategy document and evaluates the progress of the communication process as well as the definition of individual and corporate responsibilities.	The lack of effective communication during activities by engagement teams within the SAI is considered a challenge.	Monitoring is done through the regulatory act for communication drafted and approved by the NAO; and • Promoting horizontal and vertical communication (bottom-up and top-down).
(e) relevant and reliable information about the quality management system is communicated to interested parties and other external parties.	Failure to provide information requested by the NAO, stakeholders and other external parties is considered a risk because it can have the effect of losing public trust, compromising transparency and accountability, and hindering institutional cooperation processes.	M	M	The CAO believes that audit products should be promoted and the promotion of audit work results should be done through effective communication with external parties. Also, the NAO, as an independent institution, through audit reports, influences institutions to ensure effective internal control, accountability and protection of the public interest.	The nature of sharing information with external parties is a challenge in itself due to the fact that we must be careful about how other parties may post in the media or online platforms.	Cooperation with stakeholders (CSOs, media, donors, academia, etc.) through conferences, workshops, and other forms, as well as the visibility of audit work and the increased presence of the SAI through media conferences.

V. Quality management process and monitoring challenges in SAI-s

The organization of our engagements also helps to contribute to the ongoing development of each member of staff.

The organization of engagements is based on the following principles:

- Each engagement is carried out by more than one auditor;
- An audit team is formed for specific audits, where the team has a common objective for its work;
- The role of each team member is clearly defined, from the outset; and
- Tasks are delegated to enable, as appropriate, the continuous development of auditors and to ensure that reports are prepared and reported in a timely manner;

However, this can be carried out responsibly by less experienced auditors, who are monitored throughout the process.

The audit process includes the following roles: the audit director; the team leader and the participating auditors.

Audit Director – Directors are the “guardians of Quality and Consistency”. The audit director is responsible for ensuring that the team works in accordance with the professional standards and ethics adopted by the CAO. They will also formulate the audit strategy for individual engagements, reflecting external developments as necessary. They will review decisions made during the audit process as required.

Within the framework of this general summary of the director’s role, some of the sub-areas for which the director is responsible are highlighted as follows:

- Overall responsibility for audit quality;
- Determines the required risk assessment procedures and agrees on significant risks;
- Agrees on the audit plan and audit programs before the audit work begins;
- Responsible for significant professional judgments in the audit and conclusions on risks;

- Conducts the second phase review, which includes ensuring that the Team Leader has completed the detailed first phase review; and
- Maintains coordination with senior staff of the entity.

Team leader – has day-to-day responsibility for managing the audit. He leads the team in conducting the entity’s risk assessment and prepares the final proposals for the Audit Planning Memorandum, as well as any additional (substantive) procedures to be used for the audit. He formulates views on the recommendations regarding the risks involved and the resources required, including the skills of any experts that may be needed. The leader is expected to provide guidance to the experts regarding their role in the work. He also recommends changes to the proposed resource requirements, motivated by ongoing observations of the audit work.

Within the framework of this general summary of the role of the team leader, some key areas for which the team leader is responsible are highlighted as follows:

- Supports and oversees (or undertakes) work on significant risks and complex or judgmental areas;
- Maintains ongoing contact with key staff of the audited organization;
- Ensures quality through detailed review in the first phase;
- Ensures quality within the team through supervision of work;
- Executes the audit plan in accordance with the NAO’s policies and procedures;
- Remains independent and objective in the work they perform; and
- Receives appropriate in-office training to enable each individual to perform their assigned engagement to professional standards. This includes summarizing, linking, and examining their work when appropriate;
- Identifies other potential risks during the course of the audit; and
- Ensures that key judgments and decisions are properly documented by team members; and

- Ensures that the audit file is ready for review and fully supports the conclusions and proposed opinion.

Participating auditors – participate in the planning work for each assignment. They carry out the audit engagements and document the evidence in the execution phase based on the audit plan. They ensure that this is properly organized, as a basis for drafting the report at the end of each engagement. (Ref. Financial Audit and Compliance Manual pp. 46 to 49).

Quality monitoring is an internal review function designed to ensure that quality control procedures are operating effectively. Quality monitoring encompasses the entire audit work, from the planning stage to reporting.

The SAI conducts a number of reviews of audit files each year. The department authorized for the quality assurance function will provide a comprehensive report each year, based on these individual quality monitoring reviews. This annual report will summarize the main findings and recommendations from the individual reviews and identify areas where audit procedures need to be improved at the NAO level. This report should be used by senior management and the human resources function to identify future staff training and development needs as well as corporate changes. (Ref. Financial Audit and Compliance Manual p. 50).

The NAO has established a mechanism for managing audit quality by implementing the requirements of the ISSAs, but with the latest amendment to ISSA 140, which entered into force in January 2025, the NAO has begun to adapt the requirements of this standard to manage quality at the organizational level, including all functions of the organization and not only the audit part, but also the financial field, human capacities and other support services.

VI. Conclusions

The research shows that the National Audit Office has integrated the quality management system into the organizational structure which helps it achieve its goals and provide sufficient assurance that its processes are in compliance with the International Standards of Supreme Audit Institutions (ISSAIs), as well as with applicable legal and regulatory requirements.

Based on the analysis, the following conclusions and recommendations have been identified:

- To determine the owner of the process (a professional body at the level of the NAO) that will deal directly with quality management for the organization, which will aggregate (collect) the results from all structures of the organization, including: auditors, managers, support staff (IT, HR, Finance, Ethics Committee, Logistics, etc.), that identifies and assesses risks and weaknesses in the quality management system;
- Professional bodies at the organization level set the objectives and the criteria in accordance with which the assessment will carry out the evaluation of processes, whether they have been developed in accordance with the standards, laws, and regulations in force, and carry out the documentation of this assessment;
- The professional body at the organization level would receive information/input (feedback) throughout the year from all relevant stakeholders involved in quality management and control;
- This professional body, after the monitoring process, will prepare a report on identified deficiencies, causes, and recommendations on how to correct these deficiencies in the Quality Management System.

This process is important for advancing the quality management system in the SAI's organizational structure in accordance with the International Standards of Supreme Audit Institutions (ISSAIs), as well as with applicable legal and regulatory requirements.

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Paper 2: Impactful Performance Audit Reports^[1] – National Audit Office of Sweden

**Hazim Sabanovic**

Senior International
Advisor
National Audit Office of
Sweden

Hazim Sabanovic is a Performance Audit Facilitator at the Swedish National Audit Office, with a long international experience in public sector reforms and institutional capacity development in SAls, including designing and conducting trainings in performance auditing.

**Lars Florin**

Performance Audit
Facilitator
National Audit Office of
Sweden

Lars Florin is a Senior International Advisor at the Swedish National Audit Office^[2], with a long experience of performance auditing in Sweden, international capacity development as well as standard setting as member of the INTOSAI Performance Audit Subcommittee.

Abstract

While performance auditing is grounded in common principles, the implementation varies over time and between countries. Each SAI needs to consider how to position itself to remain relevant and produce impactful performance audit reports meeting the requirements of standards. We believe that many SAls have a reason to strive for knowledge-rich performance audit reports to further enhance their impact. Such reports are not limited to presenting the presence of performance problems but also provide in-depth analysis of the reasons for them. Based on such knowledge, the auditors are in a better position to develop constructive and realistic recommendations for improvement. We use different modalities to support some SAls aiming for such development, as part of the international development cooperation of the Swedish National Audit Office.

Keywords:

“Performance audit, impactful reports, standards, knowledge-rich reports, analysis, auditor, recommendations, improvement, development, international cooperation.

[1] This paper was produced for the use at Scientific Conference organized by the SAI of Albania in May 2025, and does not represent a guideline for performance audit practice.

[2] This article has not been subject to the formal processes of quality control or decision-making in the Swedish National Audit Office and does not necessarily reflect the policy or views of the Office.

I. Introduction

Performance auditing is important for the promotion of good governance in the public sector. Ultimately, the purpose is to make a difference in the lives of the citizens. Its objective is to create a positive impact on the economy, efficiency, and effectiveness in the public sector, for example by avoiding waste of resources, improving services, or improving the achievement of other government objectives. This makes impactful performance auditing important for every Supreme Audit Institution (SAI).

Many factors influence the results of government undertakings, some of which are outside the control of government. Nevertheless, government entities can also do a lot to improve on their performance. In individual performance audits, a SAI can contribute to such improvements through solid analysis and good recommendations. By regularly producing high quality reports and making them public, the SAI contributes to a greater interest in performance in the public sector, inspiring citizens, clients, politicians, managers, professionals, and staff in general to take their own initiative to improve the operations. However, the structural impact of a well-functioning performance audit function is likely to be greater than the sum of direct impacts of individual audits, even if this may be difficult to prove.

The Swedish National Audit Office (Swedish NAO) has supported the international development of performance auditing since the late 1980s. Having been involved in these efforts for a long time, we have noted a significant variation in the implementation in different SAIs. This includes some practices that, in our view, do not meet INTOSAI standards. Some differences are likely to have emerged from factors such as varying traditions, historical developments, social contexts, and government systems.

We have also noted variations over time in our own SAI. Acknowledging each SAI's right and obligation to interpret the standards in their context, we believe many SAIs can benefit from reflecting on their practices and how their reports can have a positive impact on public sector performance.

In this paper, we present sections on: performance auditing – a varying practice; how performance auditing can contribute to improvement; bringing causes into the analysis; conclusions.

Performance auditing – a varying practice

A brief history

Performance auditing was introduced in Canada, Sweden, United Kingdom, United States, and a few other countries in the late 1960s. The implementation of performance auditing was linked to the emergence of rationalism, that is, the belief in the rational behaviour of organisations and the possibility of measuring their performance. It was also facilitated by the emergence of academic disciplines such as economic welfare theory. More specifically, performance auditing was closely linked to the concept of programme budgeting, aimed at improving effectiveness by means of creating a system of control and management of the public sector.^[3]

Performance auditing is mentioned in the Lima Declaration (INTOSAI-P 1), adopted by the Congress of the International Organization of Supreme Audit Institutions (INTOSAI) in 1977. Since then, it has become well established as one of three main audit types defined in the INTOSAI Standards for Supreme Audit Institutions (ISSAI) and has gradually been implemented by more and more SAIs.

[3] *Handbook In Performance Auditing – Theory and Practice*, Swedish National Audit Office, 1999.

The gradual introduction of performance auditing in countries in the eastern regions of Europe coincided with the fall of communism and the transition to market-based economies in the newly independent states. These emerging democracies required new mechanisms to enable citizens, through their parliaments, to hold governments accountable, thereby fostering the development of SAIs not only as pillars of transparency but also as agents of change. New democratic institutions needed tools to scrutinise government structures and manage reform processes, necessitating reliable inputs and insights about the outcomes and results of the reforms. This led to an increased demand for evaluations providing information about government performance.

The growing demand for new types of information was further promoted by international donors. For example, the World Bank and the International Monetary Fund often conditioned loans and donations on the introduction of reforms, including requirements to enhance the capacities of the SAIs and conduct evaluations of programmes. Still today, many donor projects in developing countries are evaluated by the SAIs, sometimes with support from the donors' own evaluation experts. Specifically for the countries aiming to join the European Union (EU), requirements for EU integration further reinforced the drive for developing performance auditing.^[4]

This increasing demand for a new kind of information, combined with the requirements to conduct performance auditing, has guided the development of performance auditing across many developing countries. To some extent, this supply and demand dynamic has shaped and continues to shape the development of performance auditing and different SAIs' approach.

[4] The process of becoming a full EU Member State involves the fulfilment of various conditions, one of which is the introduction of performance auditing, as defined in Chapter 32.

Expectations in INTOSAI standards

INTOSAI's mechanisms drive members towards consensus on endorsing audit standards. The standards constitute common foundation partly built on compromises between members active in standard-setting. An advantage is that standards drive a professional approach to public sector auditing by defining principles and requirements to be followed when relevant. They also provide opportunities to adopt and refer to the standards, strengthening the credibility of the SAIs and the audits. Standards can also serve as benchmarks for assessing how different SAIs have organised and implemented their audits, which, over time, may clarify the role of SAIs.

The performance audit standard – taken as a whole – define a special type of study, distinctly different from the other two main audit types defined by INTOSAI. The goal is to evaluate public sector undertakings and directly report on the presences of performance problems, provide in-depth analysis of the problems and the reasons for them and provide recommendations contributing to improved economy, efficiency, and effectiveness. It is clearly stated that the standard “...in no way overrides national laws, regulations or mandates” or prevent SAIs from carrying out other engagements which are not specifically covered by the existing ISSAIs.^[5] A SAI that has adopted a standard need to relate to the principles or requirements contained therein and interpret their more precise meaning in their national context.

According to the standards, performance audits are not limited to showing the presence of problems in relation to the principles of economy, efficiency, and effectiveness. In addition, the causes and consequences of identified main problems need to be analysed, as well as whether there is room for improvement. See the fact box below for the wording in the standards.

[1] ISSAI 3000:12.

Expectations in INTOSAI pronouncements on analysing causes in performance audits

"Performance audit focuses on whether interventions, programmes and institutions are performing in accordance with the principles of economy, efficiency and effectiveness and whether there is room for improvement. Performance is examined against suitable criteria, and the causes of deviations from those criteria or other problems are analysed. The aim is to answer key audit questions and to provide recommendations for improvement."

INTOSAI-P 100:22

"The auditor needs to explain causes and the consequences of the problems in the audit report because it will allow the reader to better understand the significance of the problem."

ISSAI 3000:121

"Recommendations need to avoid truisms, address the causes of problems, and not encroach on the management's responsibilities. It should be clear how the recommendation would contribute to better performance."

ISSAI 3000:127

Expectations on problem-oriented performance audits specifically

"In a problem-oriented performance audit, the starting point is a known or suspected deviation from what should or could be. The main objective is, therefore, not just to verify the problem (the deviation from the criterion and its consequences) but to identify causes. This makes it important to decide how to examine and verify causes during the design phase. Conclusions and recommendations are primarily based on the process of analysing and confirming causes, even though they are always rooted in normative criteria."

ISSAI 300:27

"Conclusions and recommendations are primarily based on the process of analysing and confirming causes rather than comparing audit evidence with audit criteria."

ISSAI 3000:44

The reason the standards expect analysis of causes is the intention that performance audits should contribute to improved economy, efficiency, and effectiveness in the public sector. If the auditors have not only verified the presence of main performance problems but also have an in-depth understanding of their nature and the reasons for them, they are in a much better position to develop appropriate recommendations for improvement. Reports presenting such information and insights enable different actors to act more effectively in their role in the accountability system.

We do not interpret standards as expecting rigorous empirical analysis of causal relationships. Instead, our interpretation is that auditors must examine what has, with reasonable certainty, 'led to', 'contributed to', 'explain' or are the 'reasons for' something described as the main performance problems in an audit. For this reason, we use such wording interchangeably with 'causes' in this article. According to GUID 3920, causes need to be supported by sufficient and appropriate audit evidence. The guidance also distinguishes between effects that have already occurred and likely future effects. To prove causal effects is often the aim of an impact study, while logical reasoning about potential or likely causal effects is often used in problem analysis to focus design and analysis. Even when reasoning about likely effects is firmly based on research on comparable cases and logical reasoning, they are speculative to some degree. Auditors are advised to use them with caution. Even if there reasonably should be a causal link, this is not proof that one exists. The guidance underlines the importance of auditors understanding what may be perceived as a cause-effect relationship. There may be other reasons for the relationship, such as reverse cause-effect relationships, coincidences, or confounding effects (in which both factors are influenced by a third factor that has not been analysed). [6]

[6] GUID 3920: 88–91.

ISSAI 300:26 and ISSAI 3000:40 expect auditors to choose a result-, problem-, or system-oriented approach, or a combination thereof, to facilitate the soundness of audit design. The different approaches are described as follows:

- A result-oriented approach, which assesses whether outcome or output objectives have been achieved as intended or programmes and services are operating as intended
- A problem-oriented approach, which examines, verifies and analyses the causes of particular problems or deviations from criteria
- A system-oriented approach, which examines the proper functioning of management systems, e.g. financial management systems.

All three approaches can be pursued from a top-down or bottom-up perspective. Top-down audits concentrate mainly on the requirements, intentions, objectives, and expectations of the legislature and central government. A bottom-up perspective focuses on problems of significance to people and the community.^[7] In our understanding, the auditors assess whether the intended results have been achieved in a result-oriented audit. If not, and there is room for improvement, there is a performance problem. To identify solutions to the problems, the reasons for them need to be analysed, and recommendations developed to address them.

[1] ISSAI 300:26.

Significant variations in the implementation

The description of different audit approaches has changed over time

The ISSAI 3000 that was in force 2004–2016 only listed two approaches to performance auditing – one result-oriented and one problem-oriented. They were described as differing quite significantly from each other. Problem-oriented audits were described as being more analytical, while result-oriented audits aimed to identify whether the intended results had been achieved, not stating that more than this needed to be done.*

At this time, a theoretical framework for a development towards a system-oriented approach to auditing effectiveness was also presented based on ideas and concepts from 'system theory', where government undertakings or programmes are seen as systems of interacting and functional interdependent elements. The idea was that auditors need to apply a holistic perspective on regulations, resources, government bodies and focus on the effectiveness of the system with less emphasis on the accountability of individual agencies.

However, once a 'system-oriented approach' explicitly was added as a third approach in the standards, with the endorsement of ISSAI 3100 in force 2010–2016, it referred to management systems exemplified with financial management. It was also mentioned that a combination of the approaches can be used.***

These three approaches remain in the current standards, but the meaning of them has been modified by the expectation that, regardless of approach, all performance audits should analyse causes to performance problems. See the standards in the previous fact box.

* ISSAI 300 dated 2004, page 25 – 27.

** ISSAI 300 dated 2004, Annex 7.

*** ISSAI 3100 dated 2010, paragraph 3.

**** ISSAI 300:26 and ISSAI 3000:40

A problem-oriented performance audit focuses on analysing the relationships between activities and results to understand the reasons for performance problems and identify opportunities for improvement. Hence, the problems motivating the audit can be defined in terms of unsatisfactory results or in terms of the perceived malfunctions of systems that are likely to have a negative impact on the results.

In a system-oriented audit, the auditors examine whether the systems function as intended. If not, it means that there may be a performance problem. To determine whether this is the case, the relationships to the results and opportunities for improvement need to be analysed. The reasons for the system malfunctioning must also be analysed to be able to address them with recommendations. Based on this understanding, 'problems', 'systems', 'results' as well as opportunities for improvement need to be brought into the analysis in all audits regardless of the approach. The standards expect analysis of causes to main performance problems regardless of approach. To us, this means that the difference between the approaches mainly becomes a matter of nuances. We believe these nuances reflect varying practices between SAIs

regarding selection of topics, use of criteria, and the depth of empirical analysis on the relationship between activities and results. With the expectation on analysing causes in all performance audits, the question is whether it still is meaningful to distinguish between the three approaches.

We believe the three different approaches have emerged because of different influences in the development of performance auditing between SAIs. We see the main influences coming from:

- other types of public sector auditing, i.e. financial and compliance auditing
- rational ideas and management theories in general and in the public sector in particular
- evaluations of activities and programs related to societal phenomena and public sector
- social science research.

There may also be significant variations over time in how each SAI positions their performance audit function based on expectations from stakeholders, problems in the public sector, the economic situation, or preferences from auditors general or other influential staff members. In the fact box below, we illustrate this with a brief overview of how performance auditing at the Swedish NAO has gone through periods of varying emphasis, based on different influences.

The influences affecting performance auditing can vary over time – an example from the Swedish National Audit Office

At the Swedish National Audit Office (Swedish NAO), performance auditing emerged in the late 1960s as a separate profession, with no or weak influences from other audit types. Initially, performance auditing was strongly influenced by ideas on programme budgeting and rational assumptions on how the public sector could be managed. In particular, planning and follow up of government activities were of main interest.

In the 1980s, the influences from social science research intensified, and the Swedish NAO carried out a few audits resembling scientific research. As a consequence, time-consuming studies reduced the volume of reports. The influences of scientific research weakened towards the late 1980s and early 1990s, at a time when influences from public sector evaluations grew stronger. Audits often focused on improving the results of government activities and improved welfare for citizens – at a risk of higher costs.

Economic crises in Sweden in the early 1990s brought about a shift in the type of audits. At the time, the Swedish NAO was placed under the Ministry of Finance, and a new management focused more on saving money and questioning the need for government undertakings. This also brought about a more instrumental view of providing recommendations which the Government Offices could better use to take action.

Following constitutional amendments in the early 2000s, the Swedish NAO became an authority under the Riksdag (the parliament) and was mandated to audit the Government Offices. In developing a new role for the authority, the new leadership put more emphasis on audits making it possible to hold those responsible to account for weak performance. As a consequence, many audits became more similar to compliance audits – focusing on deviations in relation to criteria while not necessarily explaining the reasons for them.

Based on a public inquiry in 2009, the Riksdag expressed dissatisfaction with the type of reports presented by the authority. As a result, the principle of public good was introduced into the legislation as a fourth principle guiding performance auditing. While some changes took place, it also led to uncertainty in the SAI on how to position performance auditing.

In 2015, new management interpreted the amended legislation as an intention to drive the audits towards also examining whether lower-level policy and the implementation of undertakings were socio-economically beneficial according to macroeconomics principles. Subject matter expertise and expertise in social science research were highlighted, and less emphasis was placed on audit knowledge and experiences.

After a turbulent period, the Riksdag decided on a new public inquiry in 2016. This inquiry was also critical of the implementation of performance auditing. As a result, the principle of public good was removed from the legislation. The new leadership of the authority shifted the focus towards auditing the three Es based on INTOSAI standards. Audit knowledge and experience was again recognised, together with methodological skills from social science research, while the emphasis on subject matter expertise was weakened due to increased attention on the risk of conflict of interest.

The evolution of performance auditing at the Swedish NAO can be illustrated as shown in the figure below, in which performance auditing, over time, is driven in different directions to increase the emphasis on a certain perspective or issue. Changes are always gradual and, hopefully, it continues to rest firmly on a foundation. For SAIs which have adopted the INTOSAI standards, the principles and requirements in the standards can be understood as such a foundation – where the interpretation of the standards and implementation in practice can vary from time to time and between different SAIs.

Almost all SAIs operate in a national context. To remain relevant, they need to adapt their operations to the legal framework and the situation in the public sector. What this entails must be analysed and decided on a national level.

How performance auditing can contribute to improvement

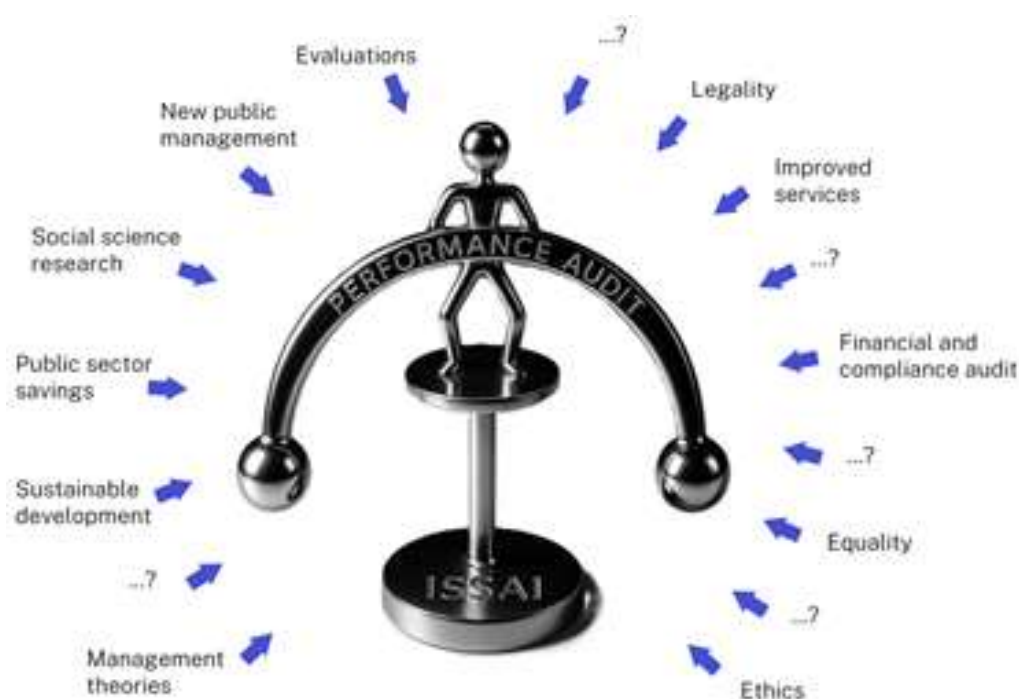
In this section we will discuss on how different mechanisms can contribute to improvement; the need to avoid extremes that do not meet standards; and the positioning of performance auditing is a strategic choice.

How different mechanisms can contribute to improvement

The United Nations General Assembly recognises the “important role of SAIs in promoting the efficiency, accountability, effectiveness and transparency of public administration”.^[8] Once SAIs’ audit results have been made public, citizens are able to hold the custodians of public resources accountable. Democratically elected representatives can only be held accountable if they, in turn, can hold accountable those who implement their decisions.

[7] United Nations General Assembly Resolution A/66/209.

Figure 1. Varying practices with numerous influences on a stable foundation of standards



SAls strengthen accountability, transparency, and integrity by independently auditing public sector operations and reporting on their findings. This enables those charged with public sector governance to discharge their responsibilities, in responding to audit findings and recommendations and taking appropriate corrective action, and thus complete the cycle of accountability.^[9] The information provided can, in turn, be used by different actors in the chain of accountability. 'Accountability' is defined as "the fact of being responsible for your decisions or actions and expected to explain them when you are asked".^[10] The SAI can contribute to accountability in different ways, and the depth of knowledge provided through performance audit reports may vary substantially. There will always be variations between individual audits. However, we would argue that SAls' strategic choices of how to make use of the different mechanisms have a paramount influence on the reports that are published and the impact they can have.

Performance auditing means evaluating performance in relation to the principles of the three E-s and identifying opportunities for improvement. According to the ISSAIs, the SAI should select topics with the aim of maximizing the expected impact of performance auditing, and auditors should seek to provide constructive recommendations in the reports when relevant and allowed by the mandate.^[11] SAls can be described as using two different mechanisms for attempting to make performance audits contribute to improved economy, efficiency, and effectiveness:

- *Encouraging improvement – by providing knowledge and insights and recommending appropriate actions, enabling those responsible to act.*
- *Putting pressure for change – by evaluating government undertakings in relation to responsibility and make the reports public.*

One way to contribute to accountability is to present in-depth understanding and analysis of performance problems in government undertakings and the reasons for them in reports – making this knowledge available for professionals and managers in the area as well as the parliament, ministries, media, citizens, and other actors. This can encourage improvement and help different actors to become more effective in the accountability system. Professionals and managers in responsible entities get opportunities to improve their operations and decisions. Media and citizens get access to information they can use to praise or criticise politicians and those responsible, should they wish to do so. Parliament and their public accounts committee, or similar structures, in turn receive independent information strengthening their ability to take initiatives and hold those responsible accountable, should they wish to do so.

Another way for SAls to contribute to accountability is to focus on the responsibility of government entities for weaknesses, putting pressure for change. Already publishing evaluative reports puts some pressure on those responsible. Pressure can also be generated if citizens, clients, media, politicians, or others find reasons to hold those responsible to account and demand change. When this is combined with a low level of new information and insight, performance audits tend to resemble compliance audits, with the difference that the criteria need to be performance-relevant and may come from varying sources. Focusing entirely on what has not been done or achieved leads to a tendency of using undisputable and detailed criteria, where distinct evidence can be provided on whether the criteria have been met or not. The most important new knowledge communicated in such audits is that there are deviations from some criteria applied.

[9] INTOSAI-P 12:1-2, 6.

[10] Oxford Advanced Learner's Dictionary.

[11] ISSAI 300:36, 40 and 3000:91, 106, 126.

More in-depth understanding and analysis of the reason for this become less important, as it tends to explain or excuse some of the problems and weaken the pressure for change.

A disadvantage is that such audits tend to create some tension in the relationship between auditors and audited entities. In addition, the less knowledge about the operations and the reasons for problems the auditors have, the more difficult it is to develop recommendations that are constructive and realistic in their context. The risk is that recommendations instead become limited to requesting the audit entity to address the deviations from criteria or apply generic principles for management.

Performance audit reports with a focus on showing deviations from criteria without any deeper analysis may still have an impact. A prerequisite is that improvement is possible, and that the responsible entity is not aware of the gaps but willing to address them, or that the pressure for change is sufficiently strong. There may also be some advantages of such audits:

- It is reasonably easy and quick to identify the existence of gaps in relation to detailed criteria, in particular in countries with common weaknesses in professional or administrative systems.

- Parliamentarians may expect the SAI to present indisputable evidence and allocate unequivocal responsibility for the presence of problems and clearly allocate responsibility for the deviations.

- There may be general problems in public administration in terms of poor respect for rules and regulations and poor interest in government entities to perform well. However, there are often complex reasons for performance problems in the public sector. Usually, government entities are aware of at least some weaknesses in their operations and try to address them – even if they may not be successful.

Problems related to economy, efficiency, and effectiveness are almost always caused by various underlying problems, making it complex to address them. Objectives can be ambiguous, unrealistic, or conflicting; responsibilities can be unclear, overlapping, or conflicting; reasons for problems are not in full control of the audit entity or there are limitations in the knowledge of why intended results are not achieved. Furthermore, performance is rarely perfect or not at all useful – rather, there is a broad variation of different nuances. We argue that empirical observation and analysis in performance audit reports, providing knowledge and insight are likely to be the most important mechanisms for making reports useful and have an impact on improved economy, efficiency, and effectiveness. Many actors may make use of such knowledge to drive change for improvement: parliamentary committees, individual parliamentarians, management and professionals in audit entities, media, clients, citizens, and civil society organisations. There will still be some pressure on the entity to change, since performance is evaluated in relation to responsibility and reports made public. Nevertheless, the best opportunities for improvement exist if those responsible understand their responsibility and what they can do to improve the situation. Sometimes, it is parliament that can act, although often it is the audit entities or even individual experts who can initiate improved performance. By doing so, the SAI adds value and improves accountability by enabling those responsible to make informed decisions and better take their responsibility.

In principle, a report rich in knowledge and insight can be combined with creating a strong pressure for change. However, entities that do not consider themselves respected, but blamed for weaknesses, are less likely to be willing to accept the report and choose to act based on it – weakening this mechanism for impact.



Results

The need to avoid extremes that do not meet standards

The two mechanisms for promoting improved performance – encouraging improvement or putting pressure for change – are, in our experience, relevant for understanding variations between individual audits as well as for how different SAIs have positioned themselves strategically.

Our interpretation is that all audits that must balance the two mechanisms to meet the standards. How this should be done needs to be considered strategically by each SAI in their national context, and also considered in the design of individual audits.

The overarching intention should be to contribute improved public sector performance improving the lives of citizens.

We will let two caricatures of audits not meeting standards illustrate extreme variations in audit practices. We have seen examples of audits going into the extreme of making use of one of the two mechanisms, in particular by putting pressure for change.

Sometimes, such reports purport to include analysis of the reasons for problems without doing so by:

- creating an illusion of causes without supporting evidence or arguments – e.g. by rephrasing the identified problem without adding any explanatory factor.

For example: 'they didn't do it because they neglected it' or 'they didn't do it because they didn't prioritise it'.

- using statements on causes without any supporting evidence or arguments – in these reports, the auditors present short statements they claim to be the causes of the problems without supporting them with any evidence or rational argument



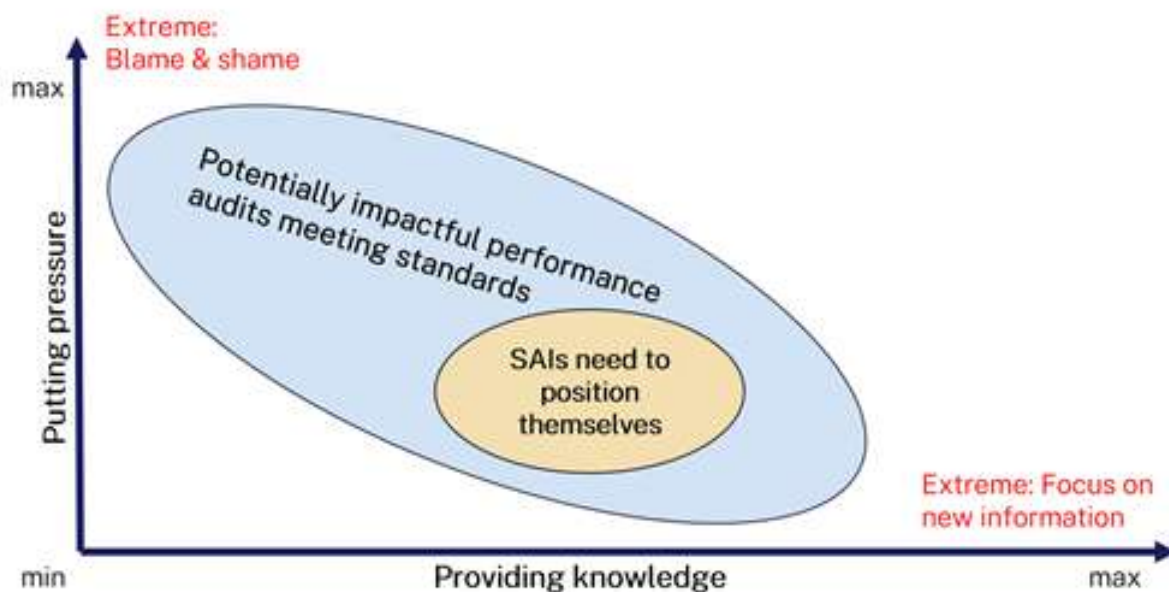


Figure 2. Balancing two mechanisms for impact, to avoid extremes not meeting standards

A caricature of the extreme:

Encourage improvement by providing knowledge and insight on how to carry out processes to achieve good results

Features:

- Research how different entities implement similar activities, their experiences and results
- Develop good practices on how to achieve the intended results based on the research
- Analyse why all entities do not use good practices, and the consequences of this
- Present the varying practices in the report in relation to the good practices as well as reasons for and consequences of not using them
- Share the report with those who can learn from it and consider changing their practice.

Logic: A questions-driven logic similar to evaluations and social science research, focusing on the results and how activities are implemented, the reasons for this and the consequences for results – presenting good practices that the actors can learn from to adjust their practices.

Weaknesses: More time and resource intensive. In our interpretation, such audits do not meet standards if no explicit evaluation of performance of identifiable entities is made, and those responsible are not addressed with recommendations even when this is relevant and allowed by the mandate.

A caricature of the extreme:

Putting pressure for change with the purpose that those responsible should be hold accountable for weaknesses

Features:

- Use detailed pre-defined criteria with a strong legitimacy and allowing clear assessment of whether they are met or not
- Identify gaps in conditions (results or activities) in relation to the criteria, verifying what is not achieved or done
- Present the criteria and the gaps in the report
- Clearly point out who is responsible and criticize them for the deviations
- Recommend those responsible to comply with criteria to close the gaps, or oversight institutions to hold those responsible to account.

Logic: Such audits may have a tendency to blame and shame, using a criteria-driven circular logic similar to what is appropriately used in financial and compliance audit: “they should, they don’t, they should”.

Weaknesses: Risk being trivial and add little value, stating what is usually already known and demand improvement without showing whether this is possible and how it can be done. In our interpretation, such audits do not meet standards as the reasons for deviations from criteria is not analysed and opportunities for how to improve not identified. When criteria are process-oriented, their relevance for performance also remains unclear.

The positioning of performance auditing is a strategic choice

Experience shows that it is important for SAIs to follow up on the use and impact of their performance audit reports and make strategic choices for further development and improvement. This is particularly important as the two mechanisms for promoting improvement weaken each other.

Each SAI is an authoritative interpreter of the standards they have adopted for performance auditing. Our experience is that many SAIs have reasons for and interest in striving towards strengthening the mechanisms to encourage improvement by providing knowledge and insight in their reports. This requires auditors to:

- identify indications or risks for main performance problems linked to economy, efficiency, or effectiveness as the main focus for their performance audits. This can be problems directly or indirectly related to the results or costs for the activities. It is not advisable to focus audits on generic principles on how to carry out certain processes, unless this is combined with analysis on how weaknesses influence the results and what the reasons for those weaknesses.
- establish main performance problems based on evidence for them assessed by using audit criteria directly or indirectly clearly related to the three E-s, i.e. be related to results or costs.

- put significant efforts on developing an understanding of how activities and processes are carried out, why this is happening and how it influences other activities or results and weaknesses in them. To do this, the audit is ideally designed for developing systematic information and analysis of the reasons for the main performance problems and sometimes the consequences of them.
- develop recommendations that are tailored to the specific situation and the problems in the audit area, addressing underlying reasons to the main performance problems and clarifying how the recommendations can improve the situation.

To be successful in respect, auditors need a well-developed design of the audit and sufficient knowledge and skills in performing empirical studies based on methods from evaluations and social sciences. They must also understand that their task is to develop knowledge, not to find opportunities to criticise government entities and staff.

Bringing causes into the analysis

In this section we will discuss about what constitutes a performance problem; the essence of performance auditing; the use of an audit design that includes cause-effect relationships; and other techniques to bring causes into the analysis in reports.

What constitutes a performance problem

Financial and compliance audits are carried out in relation to closed sets of criteria that should always be met. This means that gaps in relation to criteria are sufficient to define a problem, even if the materiality of them also needs to be assessed. In performance auditing, it is not even theoretically possible to identify the full set of criteria related to the three Es that could be relevant. Organizations and activities can be assessed from different perspectives, and there is no defined complete set of criteria for good performance for any one of them.

The implication is that the selected criteria cannot objectively be claimed to be the best ones, and that deviations from the selected criteria are not sufficient to define performance problems. Through research and careful planning, auditors can develop performance criteria that are relevant and considered legitimate by the users of the report. However, it will always be possible to assess results or activities with other criteria. Only once the auditors can also convincingly make it likely that there are opportunities to improve the economy, efficiency, or effectiveness that performance problems can be considered to have been established.

The essence of performance auditing

According to Oxford Learner's Dictionary, a "result" is something that has been caused by something else. All government undertakings are meant to lead to something – the results. The intentions can be clear and explicitly expressed, but they can also be vague, uncertain, implicit, or in conflict with other intentions.

A model for the intervention logic of government undertakings is presented in the figure below. The model illustrates how government undertakings are first designed in terms of objectives, allocation of resources, mandate, rules, organisation, and more. To a large extent, this is done or confirmed through decisions by the legislature or the executive. When the design is in place, those allocated responsibility can initiate the implementation of the undertaking – acquiring resources and developing and implementing processes within the organisation. This will create an immediate output that is often transformed in chains of intermediate outcome to the final outcome, hopefully corresponding to the intentions of those who decided on the undertaking.

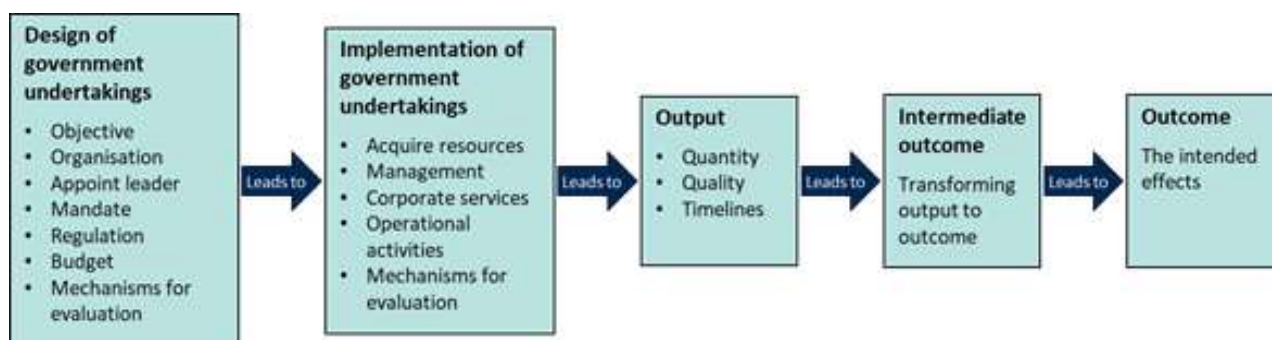


Figure 3. The general model of intervention logic for government undertakings[12]

[12] Modeli i logjikës së ndërhyrjes ka ngjashmëri me modelin Input – Output të paraqitur në GUID 3910:37, por përdoret për një qëllim të ndryshëm.

The above model is rather complex, but is nonetheless a simplification of reality. Removing details and complexity even further in the next figure helps us to clearly illustrate what, in our view, is the essence of performance auditing – analysing how the design and implementation of government undertakings influence the results achieved. Performance problems exist when there are opportunities to improve the results by modifications in the design or implementation of activities, processes, projects, and programmes.

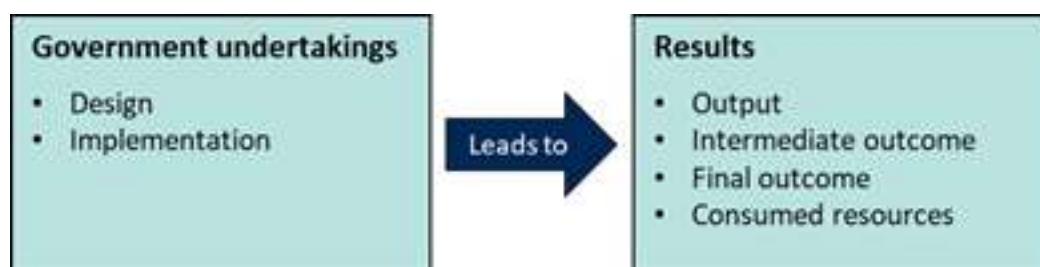


Figure 4. The essence of performance auditing: linking what governments do to results

Design problems may need to be addressed by the legislature or executive, while implementation problems can often be addressed by agencies assigned responsibility for the implementation.

The use of an audit design that includes cause-effect relationships

One way to bring causes into the analysis in performance audits is to design the main study so that it has at least two levels, covering some of the results as well as the government activities supposed to produce them. This means including elements of cause-effect relationships already in the audit design. This way, both main performance problems related to results and the implementation of government activities become subject to thorough study and analysis. The standards point to such a design for problem-oriented audits. However, such a design seems appropriate regardless of whether explanatory factors have preliminary been identified during the planning phase or not.

During the main study, it is important for the auditors to remain open-minded and ready to reassess the nature and importance of the problem with the results, as well as the relevance and importance of different factors preliminary identified to contribute to it.

When auditors have developed a deep understanding of how activities lead to the expected results, or partly fail to do so, they are in a good position to develop recommendations addressing the reasons for the problems.

A performance audit can also be designed to focus on problems with the design and implementation of specific activities, and the underlying weaknesses that have resulted in these problems. Internal processes in a government entity do not have any value in their own right, but in how they directly or indirectly influence the results for the entity important for external actors. To convince readers that the weaknesses in processes and activities are significant to performance, the auditors need to make it likely that they negatively affect the results as well as identify opportunities for improvement.

Statistical impact studies can also be designed to test whether one thing causes another. For example, multiple linear regression is used to estimate the relationship between two or more

independent variables and one dependent variable. This requires the auditors to preliminary identify the main performance problems as well as the likely explanatory factors already during the planning stage, to be able to collect sufficient data on them enabling such an analysis.

Other techniques to bring causes into the analysis in reports

The alternative to designing the audit to cover main performance problems as well as the likely reasons for them during planning, is to try to address the reasons as a second step after having verified the main problems. This could even be done towards the end of the audit. The downside to this, however, is that it is likely to make it more difficult to develop any deep understanding of the problems and reasons for them since there will be less evidence and analysis of the relationship between activities and results available to support of such analysis. We have noticed different techniques used in reports.

Using models or theories to link different observations to each other, with or without testing their applicability in the specific context

In many areas, there are general models or theories for how different factors are related to each other. This can be used to develop arguments for why a certain observation is likely to have contributed to the problem. There may be exceptions where models or theories are so certain and generally accepted that referring to them is sufficient to link some causes to a problem. However, in our view auditors should normally strive to also test the applicability of the models or theories they use in the specific context of the audit to meet the standards (see the following technique).

Using empirical evidence and rational arguments to support the presence of the causes and show how they are related to the main problems

In our view, performance auditors should normally strive use empirical evidence and rational arguments to support analysis of the

for performance problems, even if it would be done as a second step rather than as part of the original audit design. This could be done by empirically test if different elements in commonly accepted models or theories are relevant in the context of the audit. Another application is to carry out empirical studies establishing the mechanisms for how different processes influence the results. The conclusion is that reasons for main performance problems presented in a report need to fulfil two requirements:

1. The presence of them needs to be justified by objective and logical arguments and/or empirical evidence.
2. They must in a reasonable and convincing way be linked to the main problems they have contributed to, based on objective and logical arguments and/or empirical evidence.

It is not possible to specify, in general terms, how strong arguments or empirical evidence are needed, as this depends on the individual case. The principles in the standards that audit evidence should be sufficient and appropriate to persuade a knowledgeable person that the findings are reasonable must be applied also to this analysis.

Conclusions provide some additional opportunities to bring causes into the analysis. While conclusions should build on and flow logically from findings, the scope for including causes as part of conclusions is somewhat larger than when presented as findings. In the conclusions, it is easier for SAls to raise risks, tentative developments, or to express their own opinions, which may make it possible to bring explanations to problems into the analysis even when they not convincingly could be presented as part of findings. In our view, however, this technique should be used with caution and due care.

Supporting SAls to develop impactful performance auditing

In the international development cooperation of the Swedish NAO, we have supported many SAls in establishing performance auditing. We consider this to be a complex process requiring SAls to have realistic initial expectations and endurance. Good results may not come quickly, but the long-term benefits of developing this audit discipline can be significant.

The development of performance audit functions can be described as taking place in three overlapping stages:

·Introduction – At this stage, the focus is on supporting auditors and managers to develop their understanding of the principles, concepts, and working processes of performance auditing. They also need to learn to apply them to develop reports that are tabled to parliament and made public. Training and coaching of audit teams and managers is the priority, while processes and techniques for auditing and managing audits are gradually introduced and tried in real-life situations.

·Institutionalisation – When the understanding and skills are largely in place, the focus shifts slightly towards supporting SAls to establish organisational processes enabling them to develop a well-functioning production apparatus ensuring regular and stable production of reports, such as managing audit teams, quality management, planning, recruitment, replacement of staff, training of trainers, relations with parliament and audited entities, and follow up.

·Improving quality – As the last stage in the development processes, when SAls have established robust systems, they have reasons to regularly reflect on the needs for changes and opportunities for further improvement of the quality of reports and their impact.

Important areas for impactful reports are to make good use of the knowledge that already exists, design systematic studies, and consciously use methods from evaluations and social sciences to develop evidence for main performance problems and the reasons for them. Similarly, to life-long learning for auditors, SAs regularly also need to reflect on how to improve their systems and processes.

We have used different modalities in supporting SAs to improve the quality and impact of performance audit reports.

Training workshops for performance auditors and managers in audit design and study design for generating empirical information through qualitative and quantitative methods. Examples of useful qualitative methods are using information from interviews, document analysis, and observations as evidence. Examples of useful quantitative methods are descriptive statistics, carrying out surveys, regression analysis, difference in difference models, causal inference, and data envelopment analysis. The trainings can also address reader-friendly reporting or training of trainers for some auditors to take provide in-house training or develop into in-house methodological providing methodological training and coaching of their colleagues.

Guest lectures by a professor in political science on different levels of analytical depth in performance audit reports. The video-recorded lectures are used in workshops as a basis for professional reflection and discussion on the need for explanatory performance audits. This is not only to establish the presence of main performance problems but also provide more in-depth analysis of their nature and the reasons for them as a basis for recommendations.

Guest lectures by the same professor on using social science theories in performance auditing. The lectures cover how theories can provide possible explanations to performance problems based on agency theory, street-level bureaucrat theory, leadership theory and institutional theory. This can motivate auditors to study whether such explanations are relevant in the specific audit, helping them to ask good questions. Existing knowledge from sources other than research can be used in a similar way. Also, these lectures are used as a basis for professional reflection and discussion.

Methodological coaching of audits in designing audits, use of methods from social sciences and write reader-friendly reports. While training may be needed to expand auditors' methodological understanding and knowledge, it is only by getting experience from using it in practice that auditors develop skills to do this on their own.

Conclusions

Standards outline performance auditing as in-depth evaluation of whether the principles of the three Es have been met and whether there is room for improvement. The essence is to analyse the relationships between results and activities. Deviations from selected criteria are not sufficient to establish performance problems – room for improvement must also be identified.

Standards provide arguments for SAls to strive for knowledge-rich performance audit reports. The causes to problems are expected to be analysed in all audits, recommendations are to address causes and add value, avoiding truisms. Identifying opportunities for improvement also calls for deeper analysis and explanatory reports.

The standards leave room for SAls to adjust their audits to their context and adjust to changing needs and trends. The roots and historical development of performance audit also vary. In this article we outline two mechanisms for impact that should always be used in performance audits: encouraging improvement by providing knowledge and insight and putting pressure for change by making evaluations against responsibility public. Differences between audits and SAls in the use of these mechanisms help us understand the observed variations.

SAls, as well as individual teams, have reasons to consider how to best position themselves and create a balance between the two mechanisms to provide impactful performance audits. In doing so, they should be mindful that going to the extreme of using any of the mechanisms leads to audits not meeting standards.

SAls that want to strive to produce knowledge-rich reports have reasons to strengthen the overall audit design and study design, and strengthen the methodological understanding and use of theories and methods from social sciences among auditors and managers.



Paper 3: Audit Perspectives for the Resilience of Organizations in the Context of the European Sustainability Regulation – Court of Accounts of Romania



Lorena Predescu

External public auditor
Court of Accounts of
Romania



Cristina Elena Voicu

External public auditor
Court of Accounts of
Romania

Abstract

According to the conclusion of the Intergovernmental Panel on Climate Change's Sixth Report of March 2023, based on scientific observations: "It is unequivocal that human influence has warmed the atmosphere, the oceans and the land", the report once again sounds the alarm bell on the urgent need to drastically and rapidly reduce greenhouse gas emissions to avoid warming by 2°C, or even 1.5°C, compared to the pre-industrial era. The European Union and its Member States are committed to actively contributing to the achievement of the objectives agreed by the international community in the Paris Agreement under the UN Framework Convention on Climate Change. These commitments have been progressively translated into a significant number of European policies and regulations as well as operational programs to help build an economy that is more sustainable and resilient to climate and social pressures. The pressure of global warming is challenging the community and national and international institutions, including Supreme Audit Institutions, on the effectiveness of resilience endeavors. In this context, the authors aim to examine the extent to which current types of auditing address resilience issues and what are the new auditing perspectives on the resilience of organizations to climate and social change. This communication is a reflection paper on the developments, mainly conceptual, methodological and substantive, related to climate change resilience auditing. In this perspective, the authors have mobilized a number of research methods such as desk research (literature, national and European legislation, INTOSAI documentation), content analysis and secondary analysis of numerous scientific studies in the field. The authors also utilized qualitative research based on the unstructured interview technique and started from the assumption that such clarifications are inherent to the collective reflection on the evolution of Supreme Audit Institutions and the successful transformation of certain professions impacted by climate change, including the audit profession.

Keywords:

Audit, risk, resilience, CSRD, Taxonomy, global warming, Paris Agreement

Epistemological approach

The resilience of natural, economic and social systems to climate change, i.e. their capacity to respond to disruptions while retaining their identity, original functions and capacity to adapt, learn and transform, is a major concern of policy makers at all levels today. The approach to resilience from the perspective of Supreme Audit Institutions is placed in the European regulatory context related to global warming and sustainability.

The authors focused their research on the following research question:

What is the perspective of auditing the resilience of organizations in the context of the European sustainability regulation? What is the interest for the Supreme Audit Institutions?

It's a complex question, the answer to which raises a number of other secondary questions:

- What are the developments in external auditing driven by European sustainability regulation?
- Can we talk about a resilience audit as a distinct form of audit?
- Can we extend the performance auditing with resilience topics revealed by the European and national policies and regulations about sustainability?

As these answers require more in-depth study, this article opens up a number of avenues for reflection without, at this stage, being able to provide a sufficiently well-argued response. Clarifying the conceptual aspects is a first step. The next step is to present some contextual aspects that explain the need to increase the role of Supreme Audit Institutions in the realization of the SDGs, in relation to the evolution of the forms and content of the different types of external audit. Starting from research question, the paper is structured as follows:

- Resilience vs. climate resilience: epistemological approach

Adapting to climate change: a global emergency

- Enhancing the Role of Supreme Audit Institutions on the SDGs and climate change
- European regulatory framework on sustainability and resilience: the interest for Supreme Audit Institutions
- Integrating the concept of resilience into current types of audits
- Research conclusions on the resilience audit perspective
- Research limits and perspectives

Resilience vs. climate resilience: epistemological approach

Theoretical foundations of the concept of resilience

The concept of "resilience" comes from the Latin word "resilire", meaning the ability of a person or a system to withstand crises, adapt to change and recover from external shocks. Resilience is a complex, multidimensional, multifactorial process (Niculescu, M., Burlaud, A., 2025). The issue of resilience can be relevant at different levels: of a person, a product, an activity, an organisation^[1], an ecosystem, a human community, a territorial community, an economy (national, regional), etc. The growing interest in resilience at the conceptual and empirical level is due to recurrent economic, social and environmental crises, shocks that affect society as a whole, generating risk and uncertainty. The multitude of disruptive factors, on the one hand, and the elements vulnerable to their action, on the other hand, have led to the division of the general concept into organizational resilience, economic resilience, ecological resilience, climate resilience, social resilience, etc. Management research has focused in particular on organizational resilience, without arriving at a common, universal definition.

^[1] in the sense of a collective social construction, a structured social grouping, created for the purpose of satisfying, through coordinated action, collective goals. Organizations include public or private entities.

For some, resilience is "the intrinsic ability of an organisation to maintain or regain a dynamically stable state that allows it to continue its activities after a major accident and/or in the presence of ongoing stress" (Weick, K., 2015). For others, it means "the ability of an organisation to continue, to recover, to withstand failures, incidents, crises and periods of disruption, and to be flexible enough to adapt to changing markets and environments and to be prepared for the future" (van Maaren, I., 2022). Key words in these academic definitions are "continuity", "resilience to shocks" and "ability to bounce back". The concept of organizational resilience is often associated with the concept of organizational performance, even if their nature is different but not contradictory. Performance is the ability of an organisation to achieve its objectives efficiently and effectively, whereas resilience is its ability to bounce back from shocks. However, an organisation, public or private, can be very successful in the short term but not be resilient to crises. The causes are many: strategic fragility, lack of long-term vision, organizational rigidity, etc. In these cases, an unforeseen event such as an epidemic, a cataclysm, a sudden change in political policies, etc., can cause it to collapse. An organisation is both high-performing and resilient if it is in control of its current situation, while at the same time providing room for maneuver for its security in the face of unforeseen events (Niculescu, M., Burlaud, A., 2025).

Empirical foundations of the concept of resilience
Resilience is a recurring concern of international organizations, development agencies and European institutions, which has become more evident since the COVID crisis. Their approach to resilience incorporates new dimensions, such as that of "shock preparedness" mentioned by the World Bank, according to which resilience is "the ability to prepare for disruptions, recover from shocks, and thrive after a disruptive experience" (The World Bank Group, 2021).

More recently, the World Bank has proposed a definition and methodology for assessing resilience at the investment project level, with the aim of better informing investors, host countries, and other stakeholders about projects. It designed a model for assessing a project's resilience based on confidence in its ability "to integrate appropriate adaptation measures (...) to avoid financial, environmental and social underperformance relative to what is expected" and to promote projects "capable of strengthening the climate resilience of the sector and project beneficiaries" (World Bank Group, 2021). This methodology, even if not mandated by European standards, can serve as a basis for reflection for analysts and auditors and as a guide for public and private sector institutions and actors.

In the IPCC approach, resilience is "the capacity of social, economic and environmental systems to cope with change, disruption or hazard events, enabling them to respond to them or to reorganize themselves in such a way that they retain their fundamental function, identity and structure, while maintaining the capacity to adapt, learn and transform" (IPCC, 2024).

This definition, inspired by the Arctic Council, enriches the approaches presented below with two innovative aspects related to: the capacity of systems to reorganize themselves after a disturbance to maintain their fundamental function, identity and structure; and the capacity of systems to maintain their adaptive, learning and transformative capacities (Niculescu, M., Burlaud, A., 2025).

The European Commission has also enriched the meaning of resilience by introducing an important axiological variable: "the ability to cope with economic, social and environmental shocks or lasting structural change in a fair, sustainable and inclusive way" (Regulation (EU) 2021/241 of the European Parliament and of the Council). The axiological component is in line with the European commitment to put citizens first and to ensure sustainable and inclusive growth.

This approach is embedded in the Recovery and Resilience Mechanism which aims, inter alia, to make Member States more resilient, sustainable and better prepared for the challenges and opportunities of the green and digital transition and to achieve the EU's objective of climate neutrality by 2050 (Regulation (EU) 2021/241 of the European Parliament and of the Council).

Addressing organizational resilience today cannot ignore climate resilience because of the risks induced by climate hazards and transition risks. A company's climate performance is illustrated by its ability to control risks, capitalize on climate-related opportunities and ensure the continuity of its activities, and ultimately by its resilience. The European legislator's definition of climate resilience is a technical definition that synthesizes three interlinked dimensions:

- Substantial: climate resilience means the ability of a business to adapt to climate change and to climate change-related changes or uncertainties
- Functional: climate resilience involves the ability to manage climate-related risks in Scope 1 and to capitalize on climate-related opportunities, including the ability to respond and adapt to physical and transition risks;
- Structural: a company's climate resilience includes both its strategic and operational resilience to changes, developments or uncertainties related to climate change (Niculescu, M., Burlaud, A., 2025).

The strategic dimension involves integrating the material aspects of sustainability into an organization's strategy, taking into account its strategic vulnerabilities and capacities, based on rigorous documentation. It is about its capacity to understand challenges (development in general or climate issues), to anticipate and prepare for risks and to seize opportunities in a restrictive context. The operational dimension concerns its capacity to act in terms of managing, evaluating and monitoring progress.

The examination of the actions designed and implemented to mitigate vulnerabilities and strengthen resilience, the coherence between the policies, actions and resources mobilized, the flexibility and margins of inflexion in the face of change, provide the external auditor with an overview of the organization's capacity for transformation and the evolution of its resilience (Niculescu, M., Burlaud, A., 2025).

Methodological approach of the research

This study is based on desk research from academic sources, but mainly from sources and databases of international, European and national organizations on sustainable development, sustainability and resilience. The authors have made an in-depth analysis of recent European regulations in the field of sustainability, with two objectives: to identify the legal components relating to the public sector and to identify aspects relating to the private sector but which can serve as a source of inspiration for Supreme Audit Institutions for the forms of auditing that they currently practice. These are, in particular, the Taxonomy Regulation and its delegated regulations, the CSRD Directive and its implementing regulation, the SFDR Regulation and its delegated regulations, the full names of which are given in the bibliography. Desk research has been combined, as necessary, with content analysis. The article is also inspired by recent literature on the subject^[2] and by the results of unstructured interviews with specialists in the field.

^[2]Niculescu, M., Burlaud, A., Op. Cit.

Adapting to climate change: a global emergency

"The whole face of the Earth today bears the stamp of man's power"^[3] said Buffon in 1778. The relevance of his observation is striking today, as human control over the natural environment increased considerably throughout the Anthropocene, taking on dimensions and forms unimaginable in previous times. Numerous scientific data on the Anthropocene, including the IPCC's finding that warming due to human activities was +1° C above pre-industrial levels in 2017, show that at this rate, global temperatures will rise by 1.5° C around 2040, as shown in the figure below.

In this context, there is a legitimate question about the future of economic and social systems in a profoundly changing world, the projections of which, as well as the associated impacts and risks, vary according to the urgency, rigor and scale of climate action. These include climate mitigation and adaptation measures in line with global commitments, including the 2015 Paris Agreement.

^[3]Georges-Louis Leclerc de Buffon (1707-1788), a French naturalist, mathematician, biologist, cosmologist, philosopher and writer, made this remark in *Les Époques de la Nature*, quoted by Maria Niculescu in *La transparence des entreprises dans un monde plus chaud – des questionnements novateurs dans la recherche de gestion*

Mitigation aims to reduce greenhouse gas emissions and limit the global average temperature increase above pre-industrial levels to 1.5° C. Adaptation is a process of adjusting human action and behavior in response to current or future climate and its consequences, so as to mitigate adverse effects and exploit beneficial effects (Delegated Regulation (EU) 2023/2772).

The choice of climate action options and their impacts differ from region to region and nation to nation, depending on their specific circumstances, as there is no uniform way to design transition pathways or monitor progress towards a climate resilient future.

The European Union, a world leader in sustainable development, has developed a set of policies, regulations and measures in line with global climate commitments. It is a complex approach, commensurate with the challenges of sustainability, which presents many elements of a break with the old regulations and, in particular, with voluntary standards (Niculescu, M., Burlaud, A., 2023).

Figure 1: Global warming trends



Source: Retrieved from IPCC (2019) Global warming of 1.5°C, p. 54

Enhancing the Role of Supreme Audit Institutions on the SDGs and climate change

The cost of climate change mitigation and adaptation requires the mobilization of an enormous amount of resources, both public and private. Investments in the energy sector alone have been estimated by the TCFD at hundreds of billions of dollars annually. Thus, according to this working group's estimates, investments in the energy sector over the period 2016–2050 would increase, on average per year, by about \$830 billion (2010 US\$) above the cost of climate policies already in place (baseline scenario) (IPCC, 2019).

The Supreme Audit Institutions play, through their control mission, a major role in the formation, management and use of public financial resources orientated towards climate goals and the SDGs in general. This role was recently reaffirmed at the UN General Assembly, in December 2024, which adopted resolution 79/231 "Promoting and fostering the efficiency, accountability, effectiveness and transparency of public administration by strengthening supreme audit institutions".^[4]

It emphasizes the role of Supreme Audit Institutions in promoting the efficiency, accountability, effectiveness and transparency of public administration in achieving national development objectives and priorities as well as sustainable development goals. The resolution recognizes the role of Supreme Audit Institutions in complying with international agreements and commitments, including climate-related ones.

^[4]https://www.intosai.org/fileadmin/downloads/documents/open_access/intosai_and_united_nations/79_231_2024/EN_UN_Resol_79_231.pdf

INTOSAI has launched the Climate Scanner, a tool for independent assessments of government action on climate change, with which many European countries have joined.

All European Union countries, including Romania^[5], have made several commitments in the field of climate, which have become legally binding in the context of the 2030 Agenda, the 2015 Paris Agreement, the European Green Pact, the "Fit for 55" Climate Package and the NRRP, respectively. Supreme Audit Institutions contribute to the realisation of the commitments made by providing independent and objective assessments of national action in this field, i.e. by assessing the effectiveness of the implementation of public policies related to environment and climate, assessing the efficiency of resource allocation and use, promoting transparency and good governance.

At national level, initiatives related to policies to support, allocate and use financial resources in favor of the SDGs and climate change adaptation have multiplied. In France, the second Chamber of the Court of Auditors, entitled "Energy, Transport, Environment, Energy and the Sea", covers key areas of the SDGs and climate change mitigation and adaptation, and deals with the ecological transition. The Green Transition Community set up within it is also a means of communication between experts, exchange of experience and mutualization of knowledge. Austria has implemented several tools to develop the practice of green budgeting, such as ex-ante and ex-post environmental impact assessments, which allow the country to position itself throughout the budget cycle. It has also integrated climate change considerations into its 2020–2024 stability program.

^[5] Romania ratified the Paris Agreement through Law No 57 of 2017.

The Spanish Ministry of Finance published in 2021 and 2022, an annual report on the adaptation of the budget to the Sustainable Development Goals of the UN 2030 Agenda, which includes a specific chapter dedicated to the "green budget". Such reports have also been made in other countries such as Norway, Lithuania, United Kingdom, etc.

Romania has regulated green budgeting by Government Emergency Ordinance No. 75/2024 and by Decision No. 1.074 of 28 August 2024 for the approval of the Methodological Norms for the implementation of the provisions of Government Emergency Ordinance No. 75/2024 on the regulation of the labelling of budgetary and fiscal expenditure for green budgeting, as well as the Regulation on the organisation, functioning and tasks of the Inter-ministerial Committee for the labelling of budgetary and fiscal expenditure. They aim to ensure responsible management of financial resources that contribute to protecting the environment and combating climate change. Thus, budgetary and fiscal expenditure can be classified into the following categories: "green" expenditure, "brown" expenditure, "mixed" expenditure, "neutral" expenditure, "unlabeled" expenditure, from the most favorable effect, i.e. "green expenditure", to the least favorable effect, i.e. "brown expenditure".

The European regulatory framework on sustainability and resilience: the interest for Supreme Audit Institutions

Sustainable development has long been at the center of the European Union's policies and its development initiatives, with their social and environmental dimension being included in the Union's Treaties from the outset. According to Article 11 of the Treaty on the Functioning of the European Union:

"environmental protection requirements must be integrated into the definition and implementation of Union policies and activities, in particular with a view to promoting sustainable development" (TFEU, 2012).

On the social aspects, a number of articles refer to fundamental social rights and compliance with the European Social Charter (Turin, 1962), the European Charter of Fundamental Rights (2012), etc.

The European institutions have repeatedly expressed concern about the increasingly harmful consequences of climate change and resource depletion for our societies. In recent years, in particular in the context of the Covid 19 crisis, they have mobilised to promote development that meets the needs of present and future generations, commitments which are the guiding principle of European policies and strategies^[6] (EC, COM (2021) 390 final).

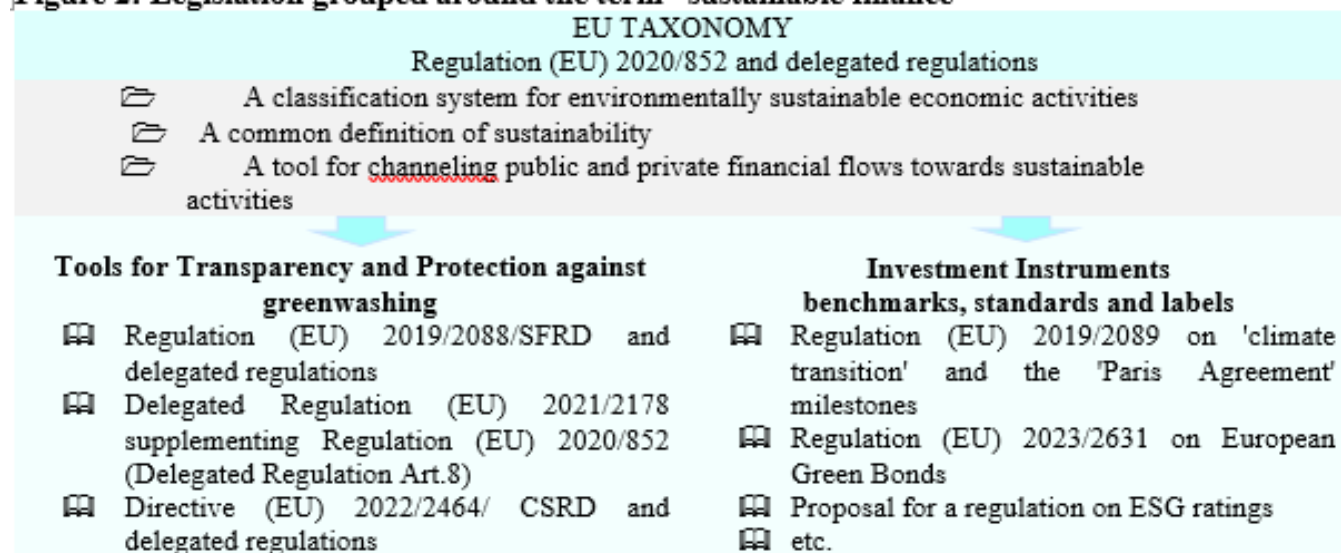
The EU is committed to becoming the first climate-neutral continent by 2050, to reducing its greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels, to strengthening its resilience to climate change, to reversing biodiversity loss and overall environmental degradation, to leaving no one behind in the process and to contributing to the achievement of the Sustainable Development Goals.

The main guiding documents for sustainable development policies are:

- Action Plan: Financing Sustainable Growth (2018)
- Green Deal for Europe (2019)
- Strategy for financing the transition to a sustainable economy" (2021).

These have been followed by a set of legislative acts grouped around the term "sustainable finance". Some of these are structured in the figure below:

^[6] European Commission, COM (2021) 390 final, Financing the transition to a sustainable economy, p. 1

Figure 2: Legislation grouped around the term "sustainable finance"

Source: Niculescu, M., Burlaud, A. (2025) Op. Cit.



These are legal acts with societal stakes, the application of which should lead to profound changes in the way society produces and consumes. Building resilience to climate change is a cross-cutting objective of all these regulations and a European and national priority.

The European regulations on sustainability and resilience are, or should be, also benchmarks for Supreme Audit Institutions. The Taxonomy Regulation establishes criteria for determining whether an economic activity qualifies as environmentally sustainable for the purpose of determining the degree to which an investment is environmentally sustainable. They are of interest to the public sector, particularly in the context of green budgeting. The national legislative frameworks, including Romania's, comply with the general principles and environmental objectives set out in Article 9 of the European Taxonomy when labelling budget expenditure, namely: climate change mitigation; adaptation to climate change; sustainable use and protection of water and marine resources; transition to a circular economy; pollution prevention and control; protection and restoration of biodiversity and ecosystems.

The Regulation on Sustainability Reporting in the Financial Services Sector (SFRD) also sets the framework for investment flows towards sustainability activities/sectors, thereby contributing to strengthening the resilience of the real economy and the stability of the financial system. The SFRD goes further by bringing a number of conceptual and substantive innovations in terms of sustainability and organizational resilience (Niculescu, M., Bulaud, A., 2023). The Directive requires public and private companies to analyse and disclose in their sustainability statement information on the resilience of their business model and strategy to the risks associated with sustainability factors and in particular climate factors. Furthermore, this Directive has introduced an obligation for sustainability statements to be audited by an external auditor based on accredited auditing standards. This is in line with the ambition of the European legislator to put sustainability reporting on an equal footing with financial reporting. This innovation brought by the CSRD reinforces the credibility of sustainability information in the eyes of capital market participants (investors), labour (employees), goods or services (consumers and users) and communities (Bulaud, A., Niculescu, M., Predescu, L., 2024).

Integrating the concept of resilience into current types of audits

The assessment by Supreme Audit Institutions of aspects of the effectiveness of the implementation of environmental and climate-related public policies, the efficiency of resource allocation and utilization is currently done by including them, in particular, in performance auditing. Depending on needs, they can be linked to aspects of financial and compliance audits, taking into account the financial impact of environmental hazards and risks. But today, sustainability and resilience of organizations are inextricably linked, as reflected in the European regulatory framework but also in some INTOSAI reference documents such as Guide 5330 Auditing Disaster Management. To be able to assess the integration of concept of resilience in the Supreme Audit Institutions' reference documents, a content analysis was carried out on the use of the key terms of performance, sustainability and resilience. These are the INTOSAI Auditing Standards^[7] related to compliance and performance auditing, the principles of transparency and accountability, various guidelines, summarized in the tables below.

^[7] The analysis included those INTOSAI audit regulations in the latest revised versions

Table 1: Content analysis of audit regulations for SAIs

Audit rules for SAI in force	Year Review	Performance	Sustainability	Resilience
<u>Guid</u> 5330 <i>Guidance on Auditing Disaster Management</i>	2020	12	9	14
<u>Guid</u> 5250 <i>Guidance on the Audit of Public Debt</i>	2020	42	41	0
<u>Guid</u> 4900 <i>Guidance on Authorities and Criteria to be considered while examining the regularity and propriety aspects in Compliance Audit</i>	2020	0	1	0
INTOSAI P 12 <i>The value and benefits of Supreme Audit Institutions in making a difference to the lives of citizens</i>	2019	6	0	0
INTOSAI P - 20 <i>Principles of transparency and accountability</i>	2019	5	0	0
ISSAI 3000 <i>Performance Auditing Standard</i>	2019	101	0	0
ISSAI 4000 <i>Compliance Auditing Standard</i>	2019	1	0	0
Guidance 3910 <i>Core concepts for performance auditing</i>	2019	125	0	0
Guidance 3920 <i>Performance audit process</i>	2019	134	0	0
Guidance 5090 <i>Auditing International Institutions</i>	2019	11	0	0
Guidance 5100 <i>Auditing Information Systems</i>	2019	18	0	0
Guidance 5200 <i>Activities with an environmental perspective</i>	2019	74	23	0
Guidance 5201 <i>Environmental Auditing in the context of financial audit and compliance audit</i>	2019	25	26	0
Guidance 5202 <i>Sustainable development: the role of SAIs</i>	2019	39	273	0
Guidance 5203 <i>Cooperation on audits of international environmental accords</i>	2019	4	9	0
Guidance 9040 <i>Good practices related to SAI transparency</i>	2019	22	1	0
Guidance 9020 <i>Evaluation of public policies</i>	2016	30	0	0

Source: authors processing

While the concepts of performance and environment are recurrent and long-standing in external audit theory and practice, the concepts of sustainability and resilience are emerging concepts, and are only mentioned in the dedicated guides (Guidance 5330 Disaster Management Auditing, Guidance 5202 Sustainable Development: The Role of SAls)

If we refer to the national legislative framework, i.e. public policy documents, regulations implementing national strategies adopted by the Government in the process of achieving the SDGs, the content analysis revealed a higher frequency of the concept of resilience (397) in national legislation and public policies than the concept of performance (284):

Table 2: Content analysis of national regulations

National regulations	Year review	Performance	Sustainability	Resilience
Decision no. 1010 of 14 August 2024 for the approval of the National Strategy on Adaptation to Climate Change for the period 2024-2030, with a 2050 perspective	2024	20	161	226
National Integrated Energy and Climate Change Plan 2025-2030 - updated in October 20248	2024	14	136	7
METHODOLOGICAL STANDARDS of 28 August 2024 implementing the provisions of Government Emergency Ordinance no. 75/2024 on regulating the labelling of budgetary and fiscal expenditure for green budgeting	2024	0	11	1
REGULATION of 28 August 2024 on the organization, functioning and tasks of the Inter-ministerial Committee for the labelling of budgetary and tax expenditure	2024	0	2	0
Decision no. 1215 of 29 November 2023 on the approval of Romania's long-term strategy to reduce greenhouse gas emissions, Neutral Romania in 2050	2023	0	91	38
National Action Plan for the implementation of the National Strategy on Adaptation to Climate Change for 2023-2030	2023	4	20	12
Decision no. 1575 of 28 December 2022 approving the National Integrated Urban Development Strategy for Resilient, Green, Inclusive and Competitive Cities 2022-2035 - Romania's Urban Policy	2022	18	27	54
Decision no. 1172 of 21 September 2022 approving the National Strategy on Circular Economy	2022	27	428	5
Emergency Ordinance no.108 of 30 June 2022 on the decarbonization of the energy sector	2022	0	0	5
National Action Plan for the implementation of the National Strategy for Sustainable Development of Romania 2030	2022	2	120	3
Decision no. 1076 of 4 October for the approval of the National Integrated Energy and Climate Change Plan 2021-2030	2021	89	136	34
Decision no. 1034 of 27 November 2020 approving the National Long-Term Renovation Strategy to support the renovation of the national stock of residential and non-residential buildings, both public and private, and its gradual transformation into a highly energy-efficient and decarbonized building stock by 2050	2020	113	3	5
National Strategy for Sustainable Development of Romania 2030 adopted by Decision no. 877 of 9 November 2018	2018	11	6	15

Source: authors processing

The desk research carried out on the audit reports produced by SAI Romania in the last two years, of interest for our research topic, since the performance audit missions applied a newly adopted, innovative methodology, realized in partnership with the WB, revealed the same situation as previously found in the case of INTOSAI regulations, namely: the concept of performance is more frequently found (154) than the concept of resilience (17). However, the concept of resilience has a relatively higher frequency than in the INTOSAI regulations analyzed, which indicates an interest in the audit topic:

Table 3: Content analysis of the latest performance audit reports of SAI Romania

Performance audit reports	Year review	Performance	Sustainability	Resilience
<i>Public policies in public water and sanitation services. Equity vs. disparity in the population's access to these services</i>	2024	20	9	5
<i>Preventing and combating the effects of climate change in Romanian agriculture</i>	2023	24	4	6
<i>Renewable energy and its contribution to energy independence</i>	2023	3	1	5
<i>Evaluation of the efficiency and effectiveness of the programs, actions and measures undertaken for flood risk prevention, response and recovery from the effects of floods on the territory of Romania in the period 2014 - 2021</i>	2023	18	0	1
<i>Performance on the implementation of gas investment and production strategies and policies</i>	2023	74	0	0
<i>Evaluating the efficiency and effectiveness of programs, actions and measures taken to prevent the risk of floods, response and recovery from the effects of floods in Romania in the period 2014-2021</i>	2023	15	0	0

Source: authors processing

Research conclusions on the resilience audit perspective

The findings of this study provide the basis for the following proposals that can contribute to integrating the concept of resilience into external audit.

a) Extending the use of the EU Taxonomy in ex-ante and ex-post assessment of public policies related to environment and climate change

The Taxonomy (Taxonomy Regulation and Delegated Regulations) is a global reference for creating a common language on sustainability and resilience, i.e. a common understanding of the criteria that define an environmentally sustainable activity (Niculescu, M., Voicu, C., 2024).

Its cognitive and operational values recommend it as an effective tool for assessing the effectiveness of the implementation of public policies related to the environment and climate change.

It can be used to inform impact assessments of environmental public policies, both ex-ante and ex-post to assess the consequences of public action on the environment and climate change. This is because the Taxonomy's methodology is based

on rigorous technical screening criteria (TSCs) that define the levels of performance that an economic activity must fulfil in order to qualify as an activity that makes a substantial contribution to one of the climate or environmental objectives. TSCs allow the identification of the most relevant potential contributions to the environmental objective in question, taking into account both the short- and long-term impacts of a given economic activity. The Taxonomy criteria are based, as appropriate, on existing EU legislation, best practices, standards and methodologies, as well as established standards, practices and methodologies developed by internationally recognized public bodies. They take into account, as far as possible, sustainability indicators, Union labelling and certification schemes, Union statistical classifications and any relevant legislation in force.

b) Introduce resilience topics in performance auditing

The Performance Audit Manual contains a number of suggested tests related to the environment; in extension and synergy with these, the resilience issues suggested as an example in the table below could be added:

Table 4: Proposed resilience aspects

Performance audit topics *	Suggested topics from European sustainability reporting standards
Quality of objectives and target setting	Quality of climate change adaptation objectives and target setting NB/The delegated regulation of the CSRD includes rules for setting climate targets and objectives (international commitments, scientific evidence, etc.)
Auditing organizational risk control systems	Auditing risk control systems Auditing systems to control organizational risks related to corruption, bribery and lobbying in relation to environmental issues
Environment, climate change and sustainable development	Audit of innovative aspects raised by the environmental information rules of the CSRD Directive ESRS E1 Climate change ESRS E2 Pollution ESRS E3 Water and marine resources ESRS E4 Biodiversity and ecosystems ESRS E5 Resource utilization and circular economy

* According to the Performance Audit Manual, SAI Romania, 2023 and CSRD

c) Strengthening current forms of auditing with the topics concerning climate risk

As it emerged from the content analysis, Guide 5330 Guidance Auditing Disaster Management is the most resilience orientated. It could be updated by taking into account the classification of climatic, physical and transitional hazards proposed by the European Taxonomy, more adapted to the current context and the state of global warming.

In its 2017 recommendations, the Task Force on Climate-Related Financial Disclosures (TCFD), established under the auspices of the G20 Financial Stability Board, identified two categories of climate risks: physical risks, i.e. risks resulting from direct damage caused by weather and climate events, and transition risks, i.e. risks resulting from the effects of implementing a low-carbon economic model.

The TCFD distinguishes between acute and chronic risks. Acute risks are triggered by events such as natural disasters whose frequency and severity could increase: storms, hurricanes, floods, etc. Chronic risks are linked to long-term changes in climate patterns, such as rising temperatures, with the following consequences: rising sea levels, chronic heat, changing rainfall patterns and increased variability, disappearance of certain resources, etc.

This classification has served as the basis for the EU Taxonomy, which contains the following classification of physical risks:

Table 5: Classification of climate-related hazards

	Risks related to temperature	Wind risks	Risks related to Ape	Risks related to solid mass
Chronicles	Temperature change (air, freshwater, seawater)	Changing wind regime	Change in precipitation patterns and precipitation types (rain, hail, snow/ice)	Coastal erosion
	Heat stress		Precipitation or hydrological variability	Soil degradation
	Temperature variability		Ocean acidification	Soil erosion
	Melting permafrost		Saline intrusion	Single flow
			Sea level rise	
			Water stress	
Acute	Heatwave	Cyclone, hurricane, typhoon	Drought	Avalanche
	Cold wave/frost	Thunderstorms (including blizzards and dust and sand storms)	Heavy precipitation (rain, hail, snow/ice)	Landslide
	Forest fire	Tornado	Flooding (coastal, fluvial, pluvial, underground)	Subsidy
			The sudden emptying of glacial lakes	

Source: TCFD

According to the TCFD, transition risks cover the following three categories of risks: regulatory and legal, technological, market and reputational.

Regulatory and legal risks are related to a change in public policy on climate change mitigation or adaptation, or the losses and damages resulting from such a change. This category of risks is of concern to any type of organisation, given the dynamics of public policy in this area, as well as the climate change, we are witnessing.

Technological risks are generated by technological innovations and breakthroughs that contribute to combating climate change (new renewable energy technologies, energy storage, carbon capture, etc.). They are also growing rapidly, impacting on the public and private asset structure through the emergence of stranded assets and their resilience.

Reputational risks are generated by changes in stakeholders' perceptions of an organization's contribution to the transition to a low-carbon economy.

a) Promoting transparency and good governance on climate challenges in the public sector

Audit quality depends to a large extent on the availability and quality of information. This is not always ensured for public institutions. In the private sector, the obligation to publish the sustainability statement on the basis of standards applicable to certain types of companies (above a certain size of activity), as required by the CSR Directive and its implementing rules, is a real step forward. They are obliged to disclose the information necessary to understand the impact of their business on sustainability issues and the information necessary to understand how sustainability issues affect the development, performance and position of the business.

Key impacts, risks and opportunities are identified and reported on the basis of the principle of dual materiality, constituting credible sources for the sustainability audit, including resilience issues. Therefore, sustainability reporting requirements are much more stringent in the private sector than in the public sector, where such extra-financial reporting is not required. This asymmetry calls for finding solutions to promote transparency and good governance related to climate and resilience issues in the public sector.

Research limitations and avenues for further research

The authors are aware of the limitations of the present work due to the time constraints, complexity and technical difficulty of the subject. The sources of documentation in the field of sustainable development or related to the environment or climate are considerable. The structuring and interpretation through the lens of the resilience audit proved to be a novel and difficult exercise. However, it is a preliminary step that has led to further research questions:

a) What is the desirability and feasibility of the publication of an auditable sustainability report, equivalent to the private sector sustainability declaration, by the state and public institutions?

b) What is the desirability and feasibility of introducing a new type of audit in the public sector, "sustainability auditing", and of creating a new profession, the "sustainability auditor", equivalent to the private sector sustainability auditor?

Answering these questions requires collective mobilization and reflection.

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Paper 4: Evolving Audit Methodologies for Resilience: Building Resilient Institutions: Adapting to Environmental Dynamics – External audit’s perspective – National Audit Office of Kosovo



Myrvete Gashi Morina

Assistant Auditor
General

National Audit Office of
Kosovo



Samir Zymberi

Director of the IT Audit
Department

National Audit Office of
Kosovo

Abstract

In times of dynamic global challenges and technological advancements, audit methodologies are undergoing significant transformation to meet the institutions’ evolving demands. This paper explores the evolution in audit practices, highlighting the integration of innovative technologies, adoption of risk-based approaches and the implementation of agile frameworks. Key focus in this paper is on performance audits.

Keywords:

audit methodologies, resilience, data analytics, Big data, AI, risk-based auditing, agile frameworks.

Introduction

Performance audit methodology refers to the systematic approach used to assess the efficiency, effectiveness, and economy of government programs, operations, or entities. It involves planning, obtaining of evidence, analysing, assessing whether resources are used optimally to achieve the intended objectives and reporting thereon – mostly guided by international standards such as the ISSAI framework.

The transition from traditional audit methodologies to resilience-focused approaches has become essential. The COVID-19 pandemic showed the need for methodologies that are adaptive, proactive, and forward-looking. During the pandemic, some SAIs have adopted their audit methods and frameworks and turned to remote auditing and digital tools to maintain oversight when physical access was restricted.

The introduction of data analytics and risk-based auditing has revolutionised traditional audit practices, enabling greater accuracy and efficiency. The technology-driven approach improves decision-making by offering deeper insights into data. However, it also brings challenges like the need for modern systems and strong cybersecurity and cultural shifts for agile processes. These changes are vital for creating resilient organisations that maintain trust.

This paper examines case studies on organisations (SAIs) that have been adopting modern methodologies, highlighting practices and lessons learned, with a focus on performance audits. It explores shifts in auditing, including innovative technologies, risk-based approaches, and agile frameworks. The study will also provide recommendations regarding methodology, aimed at enhancing resilience, addressing risks, ensuring accountability and providing timely crisis solutions in performance audits.

2. LITERATURE REVIEW

2.1 The Role of INTOSAI Standards in Advancing Adaptive Audit Methodologies

The International Standards of Supreme Audit Institutions (ISSAI) provide a foundational framework for performance auditing, emphasizing adaptability, risk assessment, and alignment with global governance frameworks. Several key standards highlight the importance of professional judgment, scepticism, and risk-oriented auditing to enhance resilience in public sector audits.

Traditional performance audit methodology focuses on evaluating the efficiency, effectiveness, and economy of government programs or activities. It typically involves a retrospective review of performance based on established criteria, such as cost-effectiveness, achievement of goals and proper use of resources. Auditors gather evidence through document reviews, interviews and data analysis, often assessing past performance to identify areas for improvement. The methodology is structured and formal, with an emphasis on providing assurance about the functioning of public programs, with findings usually leading to recommendations for better management and improved public service delivery.

The transformation of performance auditing methodologies is reflected in key international audit standards, which emphasise efficiency and adaptability.

ISSAI 300:24-31 (IFPP, ISSAI 300 Performance Audit Principles, 2019) establishes that auditors must exercise professional judgment and remain adaptable to evolving environments (Para. 24, 31).

ISSAI 3000: 68-72 (2019) (IFPP, ISSAI 3000 Performance Audit Standard, 2019) underscores the need for auditors to apply professional judgment and scepticism, considering different perspectives to enhance audit effectiveness.

ISSAI 100:46 (IFPP, ISSAI 100 Fundamental Principles of Public Sector Auditing, 2019) mandates auditors to assess risks related to deficiencies, deviations, or misstatements that may impact the subject matter.

ISA 315:7 (IAASB, 2019) the auditor's risk identification and assessment process is iterative and dynamic.

GUID 5330:29 (IFPP, GUID 5330 Guidance on Auditing Disaster Management, 2020) explicitly requires auditors to conduct risk assessments to identify high-risk areas as potential audit subjects or objectives.

GUID 5330:45 (IFPP, GUID 5330 Guidance on Auditing Disaster Management, 2020) aligns performance and compliance audits with global disaster risk reduction frameworks, including the Yokohama (1994) and Kobe (2005) conferences, the Hyogo Framework for Action, the Sendai Framework and/or the international strategy. The 2030 Agenda for Sustainable Development is recognised as a strategic reference point for resilience-building in audit methodologies.

GUID 5100:1.4 (IFPP, GUID 5100 Guidance on Audit of Information Systems, 2019) Governments and other public sector entities have continuously adopted innovations in Information Technology (IT) into their information systems, in order to enhance efficiency and effectiveness in their functioning and delivery of various public services.

2.2 Continuous Auditing and the Evolution of Audit Methodologies,

The transformation of audit methodologies has been a key focus in academic and professional discourse, particularly following the shift from traditional audit processes to continuous and technology-driven auditing approaches. One of the earliest discussions on this evolution is presented by Vasarhelyi and Halper 1991 (p. 1), who explore the development and application

of Continuous Process Auditing Systems (CPAS). One of the key contributions of this study is that CPAS automates the data gathering process and performs cross-checking on a continuous basis. It provides the auditor with more rapid access to information and more rapid assimilation of that information(p11).

Traditional audits have historically relied on periodic, retrospective assessments, which often lead to delayed risk detection and inefficiencies in governance oversight. However, as business and governmental operations have transitioned to real-time data processing, there is a need for audits that align with this continuous, automated environment. Vasarhelyi and Halper (1991) introduce CPAS as a technological solution that enables auditors to continuously monitor (p.3,5) and analyse financial transactions, thereby improving both the timeliness and accuracy of audits. (Harper V. a., 1991).

Vasarhelyi and Halper's research was highlighting the importance of integrating digital tools into audit methodology.

2.3. Artificial Intelligence (AI), Big Data Analytics and Blockchain Technology in Auditing

The KPMG's study on AI on Financial Reporting and Audit highlights that financial reporting is changing at varying levels of speed around the world and across industries as AI becomes increasingly embedded in the audit and financial reporting. In three years, nearly all companies (99 percent) will be piloting or actively using AI (p. 8). This study also states that businesses are looking to their auditors to lead the AI transformation given their deep understanding of financial reporting processes and ability to identify areas where AI can add the most value. By understanding the value that advanced AI can bring to the audit process, we are able to provide more in-depth insights into the financial health of an organization and protect the growing needs of businesses, investors and audit professionals (p.13). (KPMG, 2024). Within the next few years, most businesses will adopt AI,

and auditors are expected to play a key role in this transformation given their expertise in financial reporting. By leveraging AI, auditors can enhance the depth and quality of financial analysis, providing more valuable insights into an organization's financial health. This evolution is crucial for meeting the evolving needs of businesses, investors and audit professionals in an increasingly complex and data-driven environment. Al Marzooqi (2021) highlights the use of Artificial Intelligence (AI) and Machine Learning. As data volume and complexity increases, Supreme Audit Institutions (SAIs) face challenges in managing and analysing large datasets. To address this, some SAIs are exploring AI and machine learning to enhance risk detection, text analysis and predictive analytics. Natural Language Processing (NLP), combined with Robotic Process Automation (RPA), enables efficient auditing of contracts, invoices and emails.

Beyond using AI for audits, SAIs are also evaluating AI systems themselves. A paper by the SAIs of Finland, Germany, the Netherlands, Norway and the UK (available at [AuditingAlgorithms.net](https://auditingalgorithms.net)) provides guidance on auditing machine learning algorithms used by governments.

The International Journal of Government Auditing (p. 16) highlights the evolving landscape of government auditing, with particular attention to how emerging technologies like artificial intelligence (AI) are shaping audit methodologies. One notable development covered in the journal is the U.S. Government Accountability Office (GAO)'s recently published AI Accountability Framework for Federal Agencies and Other Entities (International Journal of Government Auditing p. 16). This framework is a unique, first-of-its-kind framework that serves as a practical, actionable blueprint for evaluating and auditing AI systems; is flexible enough to adapt to evolving technologies; enables non- experts to ask the right questions about AI systems; and establishes a benchmark to assess safety, fairness, and effectiveness in government-deployed AI systems. (Marzooqi, 2021).

Moreover, the Artificial Intelligence Act (EU, 2024)) is the European Union's regulation aimed at establishing harmonised rules for the development, placement on the market, and use of artificial intelligence (AI) across the EU. The Act introduces a risk-based approach, categorising the AI systems. The regulation includes provisions to ban certain harmful AI practices, ensure safety and fundamental rights and promote innovation. Additionally, it amends several existing EU laws to have them aligned with the new AI framework.

The alignment between the concerns raised in the International Journal of Government Auditing and the GAO's framework is evident. Both sources underscore the critical need for governance frameworks that can guide the use of emerging technologies like AI in the public sector. These frameworks aim to maintain transparency and accountability while fostering innovation as well. For public sector auditors, this means evolving the audit methodologies to assess not only the outcomes of AI-driven processes but also the mechanisms of oversight that ensure responsible use thereof.

As governments increasingly turn to big data and artificial intelligence (AI) to enhance public sector decision-making, audit practices are also evolving to ensure that these technologies are deployed responsibly and transparently. The International Journal of Government Auditing (p. 45) highlights a significant initiative by the Central American and Caribbean Association of Supreme Audit Institutions (OLACEFS) through its Technical Committee on Information and Communication Technologies (CTIC). In 2021, CTIC focused on big data and AI as part of its activities and invited SAIs from the region to participate in a Big Data and AI Task Force. (Mazrooqi, 2021).

This initiative aimed to create an open data platform for sharing standardised data and audit reports. The resulting website, datos.olacefs.com, was designed to allow SAIs and other stakeholders to access and share information in a standardised and transparent manner.

By making audit reports available on this platform, the initiative seeks to improve data sharing, enhance collaboration, and promote the responsible use of big data and AI in government auditing across the region.

This effort aligns with global trends, such as the GAO's AI accountability framework, which stresses the importance of creating transparent and accountable AI systems. Both initiatives demonstrate the increasing importance of data sharing and collaboration in the auditing process, particularly when it comes to evaluating the use of AI and big data in public administration. The ability to access and analyse audit reports and data in real-time not only improves the quality of audits, but also ensures that auditors can make more informed decisions regarding the ethical use of AI and big data technologies. On the other hand, there are rapid developments in the issuance of digital regulations and acts related to AI, aiming for rules and principles for their widespread use.

2.4 Blockchain Technology's Potential Impact on Accounting and Auditing Practices

Blockchain technology has the potential to revolutionize audit methodologies by enhancing efficiency, transparency, and resilience. Traditional auditing requires extensive manual data extraction and reconciliation, leading to inefficiencies and delays in financial reporting. However, as Deloitte highlights, blockchain-enabled systems can provide auditors with real-time access to financial data through read-only nodes, streamlining the audit process (Deloitte, p. 10). This technology allows for continuous auditing by automating data verification, reducing human intervention, and enabling auditors to focus on high-risk and complex transactions. Furthermore, blockchain's immutable ledger enhances financial transparency and reduces fraud risks by ensuring that recorded transactions cannot be altered or manipulated. As more organizations adopt blockchain, its integration into audit frameworks will enhance automation and data security.

Deloitte emphasises that blockchain-enabled audits can incorporate machine learning and analytics to detect anomalies, securely store supporting documentation and provide automated alerts for unusual transactions (p. 11) (Deloitte, 2017). While blockchain strengthens the audit resilience, professional judgment remains essential in assessing accounting estimates and internal controls. By leveraging blockchain, SAIs can improve audit accuracy, reduce reporting lag times, and build more adaptive and technology-driven audit methodologies. This shift aligns with the broader evolution of auditing toward real-time risk monitoring and predictive analytics, reinforcing the resilience of financial oversight systems.

As highlighted in the International Journal of Government Auditing (p. 53), many SAIs are closely monitoring the developments in blockchain and some auditors have already received training on its associated risks and controls. This growing interest in blockchain stems from its distributed ledger system, which makes transactions recorded on the blockchain extremely resistant to tampering. As a result, auditors can gain greater assurance that the underlying records of transactions are accurate and reliable. (Mazrooqi, International Journal of Government Auditing, 2021).

The transparency and immutability offered by blockchain could free auditors from spending excessive time on verifying the accuracy of transaction records, allowing them to shift focus to higher-level questions related to the financial health and governance of public sector entities. Furthermore, blockchain presents a unique opportunity for recording audit evidence, particularly in forensic audits, where proving the chain of custody of evidence is crucial. This could enhance the reliability and traceability of audit processes, potentially transforming how auditors handle and document evidence.

The paper titled "Blockchain Technology in the Future of Business Cyber Security and Accounting" explores the transformative potential of blockchain technology in accounting and cybersecurity. Blockchain technology is revolutionizing the accounting profession by introducing decentralized, transparent, and immutable ledger systems. As highlighted by Demirkan et al. (2020), blockchain eliminates the need for intermediaries in financial transactions, reducing errors and costs while enhancing data integrity (p. 12–13, "Blockchain records and validates information in a decentralized way... the technology guarantees the information to be transparent, secure, tamper-proof, and reliable"). For instance, smart contracts automate processes like invoice validation and payment execution, streamlining auditing and financial reporting (pp. 13, "The automatic generation aspect of the blockchain... allows processes to be done in a timely manner."). This shift not only improves efficiency but also ensures real-time verification of transactions, making traditional point-in-time audits obsolete (p. 14, "Blockchain will alter the auditing profession... reducing reliance on manual tasks"). However, the transition requires accountants to adapt to new technologies and collaborate with IT professionals to address challenges such as data governance (p. 16–17, "Big Data affects accounting... future standards must balance disclosure with sensitive data protection") (Demirkan, 2020).

In the KPMG's study on AI in Financial Reporting and Audit, a major concern highlighted is data security and privacy (p.21), particularly as these technologies become more integrated into the auditing process (KPMG, AI in financial reporting and audit, , 2024). Initially, these concerns are prominent, but the study suggests that they diminish over time as professionals become more adept at using AI tools. This shift indicates that with increased expertise, the industry can better mitigate risks, balancing the benefits of AI with the necessary safeguards to protect sensitive data.

This evolving understanding may enhance trust in AI applications within the financial sector, particularly with regard to audit practices.

2.5 The Integration of IT in Supreme Audit Institutions

SAls are increasingly embracing IT-driven audit methodologies to address the growing complexities of financial and operational auditing. According to the World Bank report on SAls' use of IT, institutions with robust digital infrastructure were able to maintain audit quality and operational efficiency during the pandemic. The report highlights that SAls equipped with remote auditing capabilities and digital tools responded with greater agility and resilience, ensuring continuous oversight of public sector finances. (World Bank, p. 6).

Beyond crisis response, SAls recognise the necessity of adapting audit methodologies to the complexities of IT-based financial management systems. The growing reliance of governments on automated financial reporting and digital transactions has introduced new risks, requiring auditors to develop expertise in evolving science and technology issues and cybersecurity developments. The report emphasizes that SAls must evolve their methodologies to provide assurance, analysis, and advisory services related to IT governance and financial reporting systems. (World Bank, p. 12). (Bank, 2021).

2.6 Remote Auditing and the Digital Shift Post-Pandemic

A crucial theme in Al Marzooqi's (2021) study is the role of remote auditing in ensuring audit resilience during crises such as the COVID-19 pandemic. SAls described the many ways in which they have provided critical oversight of COVID-19 responses, even in very difficult circumstances. SAls took key steps to adapt to changing conditions, such as conducting real-time and remote audits, shifting priorities

and operations, and enhancing communication with stakeholders, while also safeguarding the wellbeing of staff. This agility and resourcefulness have enabled SAls to play a key role in ensuring accountability and transparency, fighting corruption, and helping governments make good decisions as the crisis has unfolded (p.32). (Mazrooqi, International Jurnal of Governmet Auditing, 2021).

The COVID-19 pandemic accelerated the widespread adoption of remote auditing among SAls, necessitating the use of digital tools such as secure cloud storage, video conferencing, and data analytics to maintain oversight despite mobility restrictions. While these advancements ensured continuity, they also introduced challenges related to data security and information accessibility. In the post-pandemic era, the imperative for digital transformation in public sector auditing has become evident, with automation, artificial intelligence and real-time data analysis playing an increasingly vital role. However, the successful integration of these technologies requires strategic investments in cybersecurity, digital literacy and regulatory frameworks to maximize their effectiveness.

While initially adopted as a temporary measure, remote auditing has now become a long-term transformation in public sector auditing. Many SAls continues to use digital tools, real-time data access and AI-driven analytics to enhance the resilience and efficiency of their audits.

KPMG's study on AI in Financial Reporting and Audit emphasises that the integration of AI is not merely a technological shift, but a paradigm shift—one that fundamentally redefines the role of auditors and reshapes the accounting industry as a whole (p.9) (KPMG, AI in financial reporting and audit , 2024). This transformation is reshaping the entire landscape of financial reporting. As AI technologies continue to evolve, they offer auditors new tools for enhancing efficiency, improving accuracy,

and enabling predictive analytics. However, this shift also requires auditors to adapt to new responsibilities, including the interpretation of AI-driven insights and the safeguarding of data integrity. Consequently, the accounting industry must undergo significant transformation to effectively use the potential of these technologies, while ensuring the maintenance of rigorous standards of accountability and transparency. This evolution underscores the growing need for continuous professional development and the adoption of new methodologies in audit practices.

2.7 The Transformative Role of Data Analytics in Audit Methodologies

The integration of big data analytics is revolutionizing audit methodologies, shifting from traditional sampling techniques to real-time, comprehensive transaction testing. This transformation enhances risk detection, fraud prevention, and operational insights, as highlighted in KPMG's report that data-driven auditing enables auditors to analyse 100% of financial transactions, (p.10) (KPMG, The Future of Audit , 2019). Machine learning and predictive analytics further empower auditors to identify anomalies, forecast risks, and provide proactive recommendations.

As stakeholder expectations evolve, 80% of respondents believe that auditors should adopt bigger data samples and advanced analytical techniques for risk-based auditing (p.5,7) (Insight, 2017). Additionally, 60% expecting a more proactive risk assessment role, reinforcing the shift toward resilient and technology-driven audit frameworks.

The adoption of big data analytics, machine learning and predictive analytics is not just an enhancement but a necessity in modern auditing. These technologies enable auditors to transition from retrospective evaluations to proactive, real-time risk assessments. By leveraging comprehensive data analysis, auditors can detect fraud more effectively, enhance financial transparency and improve decision-making.

Ultimately, the shift toward technology-driven auditing strengthens accountability and ensures that audit methodologies are equipped to address emerging risks in an increasingly complex financial and regulatory landscape.

2.8 Building Resilient Audit Practices Through Digital Skills and Innovation

The evolution of audit methodologies is not solely dependent on technological integration, but also requires an investment in new skills and competencies. The demand for critical thinking, digital literacy and AI-assisted analysis is growing, with 67% of stakeholders emphasising the need for auditors to enhance their technology skills (p. 6) (Insight, The future is now, 2017). These skills are essential for navigating complex datasets, assessing cybersecurity risks and adapting to AI-enhanced financial reporting systems.

Furthermore, the role of auditors is expanding beyond compliance checks to include strategic advisory functions, ensuring that public sector entities optimise digital investments and mitigate emerging financial risks. As IT-driven auditing becomes the standard, SAIs must focus on developing digital competencies, leveraging cloud-based audit platforms, and refining risk assessment methodologies to enhance governance, transparency, and accountability.

3. METHODOLOGY

This study employs a mixed-methods approach, combining both quantitative and qualitative data collection techniques to examine the evolving audit methodologies for resilience. The primary data source is a structured questionnaire distributed to several Supreme Audit Institutions, for which we received responses from 29 SAIs, designed to capture insights on emerging audit practices, technological integration and institutional resilience in auditing. The questionnaire consists of both open-ended and closed-ended questions, allowing respondents to provide structured responses while

also sharing qualitative insights based on their experiences.

The survey explores five key areas: (1) current audit methodologies, (2) technological advancements in auditing, (3) risk-based and agile auditing, (4) resilience in auditing, and (5) the future of audit methodologies. It examines how SAls have adapted to digital tools, the effectiveness of data analytics and the impact of remote auditing during crises such as the COVID-19 pandemic.

To ensure alignment with international auditing frameworks, the study references ISSAI 3000 (Performance Audit Standards) and ISSAI 3100 (Guidelines on Performance Auditing), which emphasise the importance of adaptability, stakeholder engagement and data-driven decision-making, as well as ISA 315 and GUID 5100 Guidance on Audit of Information Systems. Additionally, a review of existing literature on audit resilience, AI-driven audits, Big Data analytics and real-time analytics supplements the survey findings, thus providing a broader context for evaluating current trends and future directions in public sector auditing.

This methodological approach enables a comprehensive analysis of how SAls are evolving their audit methodologies to enhance resilience, ensuring that findings are both evidence-based and applicable to global audit practices.

4. RESULTS AND ANALYSIS

This study investigates the evolving audit methodologies for resilience by analysing survey responses from 29 Supreme Audit Institutions (SAIs). Using a mixed-methods approach, we have explored how SAls are integrating digital tools, adopting risk-based and agile auditing, and strengthening audit resilience in response to emerging risks and global challenges. The survey findings reveal a growing reliance on data analytics, increased emphasis on adaptability, and a strong interest in AI-driven audits and real-time analytics.

The following sections present a detailed analysis of these trends, highlighting key drivers, challenges and future priorities in public sector auditing. It should be noted that SAls were given the opportunity to provide more than one answer to a question as well as to provide an open-ended answer in the "other" option.

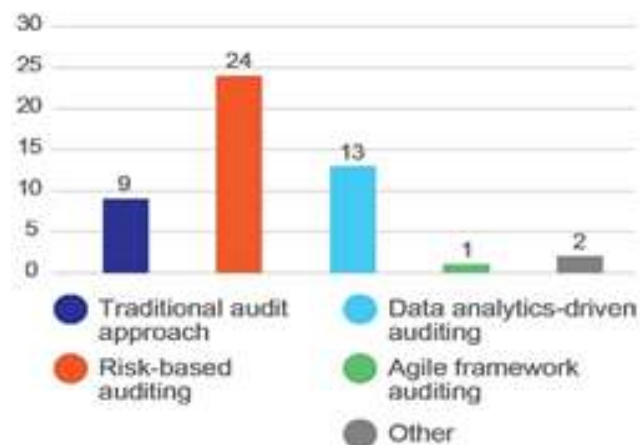
4.1 Questionnaire results

Section 1: General Information

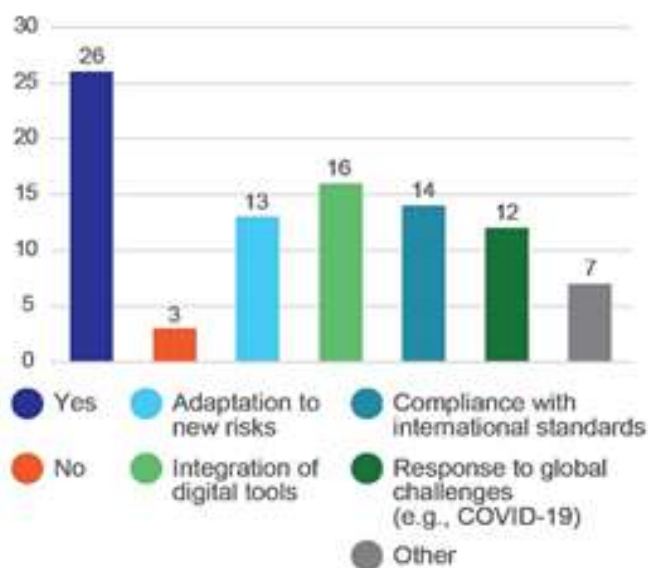
This section examines the predominant audit methodologies currently used by Supreme Audit Institutions (SAIs) and explores whether institutions have adapted their methodologies over the past five years. Understanding these shifts provides insight into the evolving nature of public sector auditing and the factors driving changes in methodology.

The survey shows a strong preference for risk-based auditing, with 24 out of 29 respondents reporting its use. This indicates that institutions focus on high-risk areas instead of following a traditional, compliance-based approach. At the same time, 13 respondents use data analytics-driven auditing, showing a growing use of digital tools to improve audit efficiency and accuracy. The adaption of agile framework auditing is still rare, with only one respondent applying this method. Additionally, 9 SAIs use both the traditional and risk-based auditing approaches and 2 SAIs responded with option Other, Graph 1.

1. How would you describe the current audit methodology used by your institution?



2. Has your institution adopted any new audit methodologies in the past five years?



Regarding changes in methodology, a large majority (26 out of 29) have adopted new audit approaches and methods in the last five years, whilst 3 have not and in the option, Other are 7 responses. The primary drivers for this shift include:

- Integration of digital tools (16 responses) – Reflecting an increasing trend toward leveraging technology for audit effectiveness.
- Compliance with international standards (14 responses) – Suggesting that alignment with global auditing best practices is a priority.

Adaptation to new risks (13 responses) – Indicating a response to emerging and evolving risks, such as financial fraud, cyber threats, and public sector inefficiencies.

Response to global challenges, including COVID-19 (12 responses) – Highlighting the impact of major global disruptions on audit practices. Graph 2.

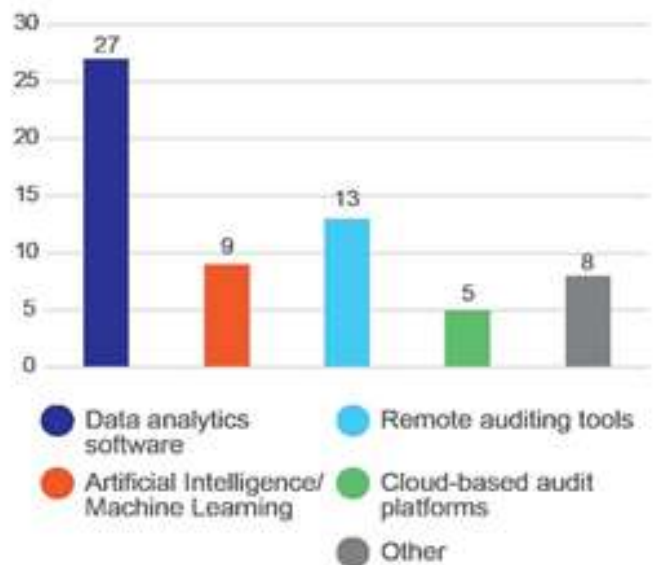
Most institutions have moved toward risk-based auditing (24 responses), whilst data analytics-driven auditing (13 responses) is also becoming more common. This shows a shift from traditional audits to more strategic and data-based approaches and methods. In addition, 26 out of 29 institutions have introduced new audit methods in the last five years, primarily driven by digital tool integration (16 responses), compliance with international standards (14 responses), and responses to global challenges like COVID-19 (12 responses).

Section 2: Technological Advancements in Auditing

This section explores the integration of digital tools and technologies in auditing and evaluates their effectiveness in improving audit quality. It also examines the challenges that institutions face when adopting technology-driven approaches.

The survey results show that data analytics software is the most commonly used digital tool, with all 27 respondents using it in their audit processes. However, more advanced technologies like Artificial Intelligence (AI) and Machine Learning (ML) are used by 9 institutions, which shows that the full potential of AI in auditing is yet to be realised. Other tools mentioned include remote auditing platforms (13 responses) and cloud-based audit platforms (5 responses), showing a move toward more flexible and digital audit practices. Additionally, 8 SAIs gave other answers, such as using semi-automated processes and similar tools. Graph 3.

3. What digital tools or technologies does your institution use for audits?

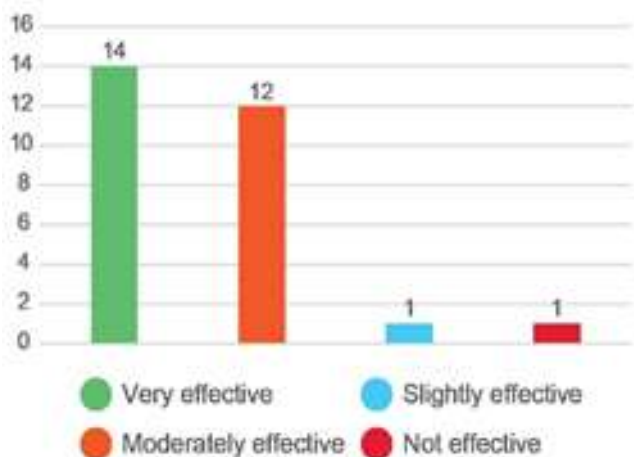


When assessing the effectiveness of data analytics, responses were largely positive: many institutions noted improvements in audit quality, efficiency and the ability to detect anomalies. This suggests that data analytics is playing an increasingly important role in modern auditing practices and is seen as a valuable tool by the majority of respondents.

- 14 respondents found it very effective in improving audit quality.
- 12 respondents considered it moderately effective, suggesting room for improvement.

Only 2 respondents found it slightly-1 or not effective-1, indicating that while digital tools provide benefits, challenges persist. Graph 4.

4. How effective has data analytics been in improving audit quality?



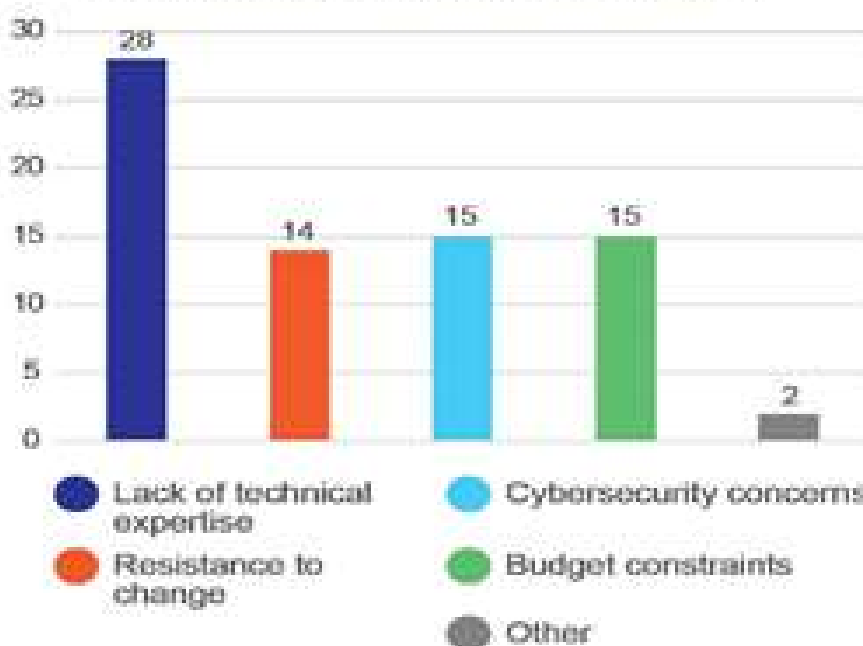
However, there are obstacles in adopting technology-driven audits, which include: limited financial resources, lack of skilled staff, resistance to change within the institutions and insufficient IT infrastructure. Lack of technical expertise (28 responses) –

The most significant barrier, highlighting a skills gap in digital auditing.

- Resistance to change (14 responses) – Suggesting cultural or structural barriers within institutions.
- Cybersecurity concerns (15 responses) – Reflecting the risks associated with digital auditing, such as data breaches and cyberattacks.
- Budget constraints (15 responses) – Limiting the ability to invest in new technologies and training programs.
- Other (2 response) – Data protection requirements GDPR. Graph 5.

There is a high adoption of data analytics tools (27 responses), but the use of AI/Machine Learning (9 responses) and cloud-based audit platforms (5 responses) remains limited. While 14 institutions found data analytics very effective, some still struggle with adoption. The biggest barrier to technological advancements is the lack of technical expertise (28 responses), followed by resistance to change (14 responses), cybersecurity concerns (15 responses), and budget constraints (15 responses). These challenges make it difficult for some SAs to fully implement and benefit from digital audit tools, despite recognizing their potential advantages.

5. What are the biggest challenges in adopting technology-driven audit approaches?



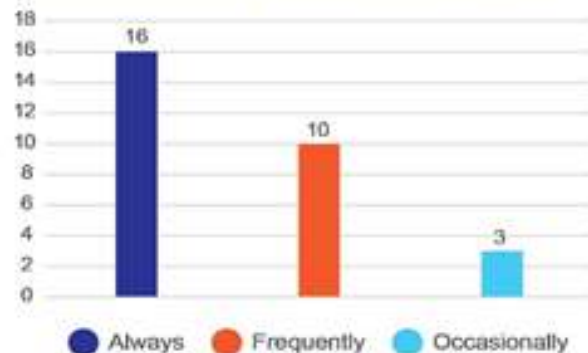
Section 3: Risk-Based and Agile Auditing

Assessing the prevalence and perceived benefits of risk-based and agile audit methodologies, as well as the challenges associated with their implementation.

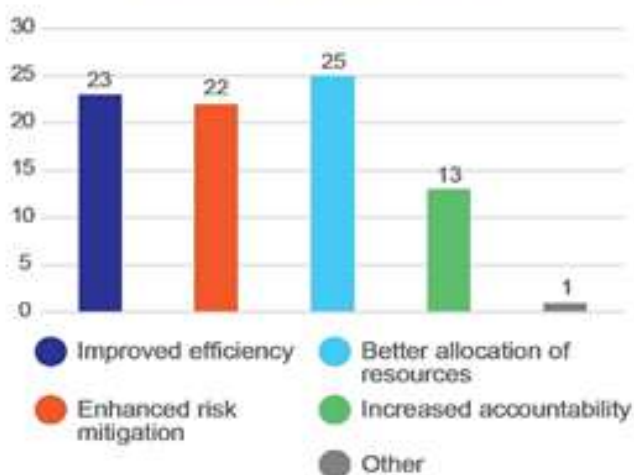
Risk-based auditing is a well-established practice among SAs, with:

- 16 institutions always applying it in performance audits.
- 10 institutions frequently using it, demonstrating its widespread adoption.
- 3 institutions using occasionally. Graph 6.

6. How frequently does your institution use risk-based auditing in performance audits?



7. What are the key benefits of using a risk-based audit approach?



The benefits of risk-based auditing include: improved focus on high-risk areas, more efficient use of resources, enhanced ability to detect material misstatements, and greater alignment with the organisation's strategic objectives.

Better allocation of resources (25 responses) – Ensuring that audit efforts focus on areas of greatest risk and impact.

Improved efficiency (23 responses) – Reducing time spent on low-risk areas and increasing audit effectiveness.

- Enhanced risk mitigation (22 responses) – Helping institutions proactively address vulnerabilities.
- Increased accountability (13 responses) – Strengthening transparency and governance.
- Improved effectiveness to identify key issues of interest for parliament and the public (1 response). Graph 7.

This approach helps auditors prioritise where to position their efforts on, leading to more effective and targeted audits.

However, agile auditing remains underutilised, 23 SAs do not apply it yet. Whilst only 6 institutions implementing it are facing various challenges.

The primary barriers to adoption include:

Cultural resistance (6 responses) – Indicating institutional reluctance to change traditional audit workflows.

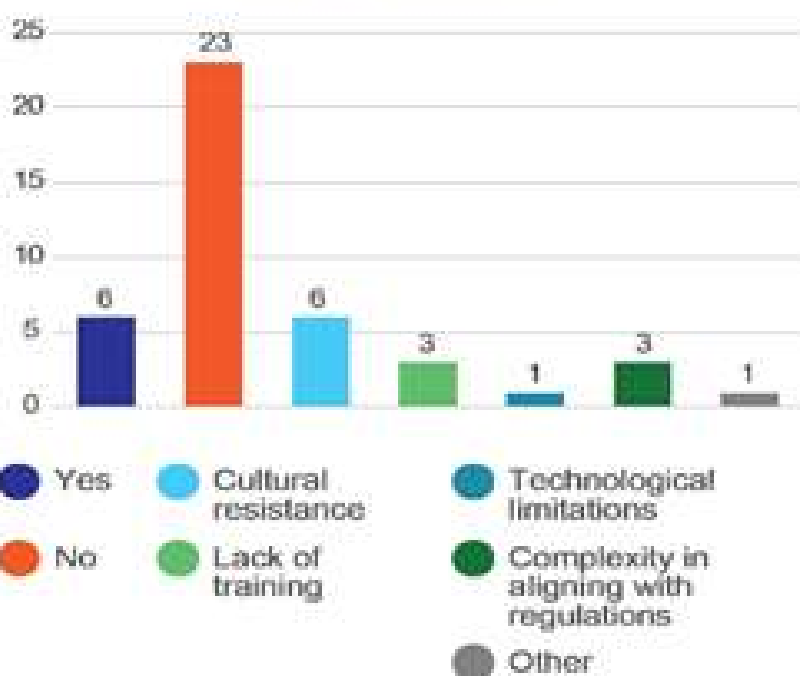
Lack of training (3 responses) – Suggesting a need for capacity-building initiatives.

Complexity in aligning with regulations (3 responses) – Highlighting the challenge of integrating agile methodologies into structured audit frameworks.

Technological limitation 1 and one SAI gave other response. Graph 8.

Risk-based auditing is well-integrated, with 16 institutions using it always and 10 using it frequently. Key benefits include better resource allocation (25 responses), improved efficiency (23 responses), and enhanced risk mitigation (22 responses). However, agile auditing is not widely implemented (only 6 out of 29 institutions use it), and barriers include cultural resistance (6 responses), lack of training and regulatory alignment (3 responses), technological limitations and other (5 responses). These challenges make it harder to implement agile auditing widely.

8. Has your institution implemented agile auditing frameworks?



Section 4: Resilience in Auditing

To assess how SAls adapted their auditing methodologies during the COVID-19 pandemic and evaluate the importance of resilience in auditing, the survey responses indicate several key adjustments.

25 institutions modified their audit methodologies during the pandemic and 4 does not make changes.

The most common changes included:

Remote auditing implementation (19 responses) – Allowing audits to continue despite physical restrictions.

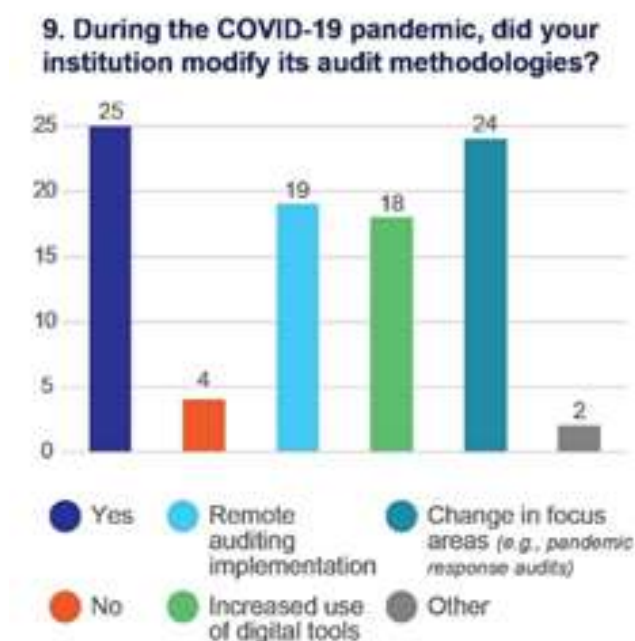
Increased use of digital tools (18 responses) – Highlighting the acceleration of technological adoption.

Change in audit focus (24 responses) – With institutions prioritizing pandemic response and crisis management audits.

Other, 2 responses. Graph 9

Regarding resilience in auditing methodology, the vast majority of respondents rated it as extremely or very important 16, whilst 8 very important, 5 moderately important and one (1) slightly important.

The COVID-19 pandemic significantly influenced audit methodologies, with 25 institutions modifying their approaches. The most common adaptations were remote auditing (19 responses), increased use of digital tools (18 responses), and a shift in focus to pandemic-related audits (24 responses). Furthermore, 24 out of 29 respondents consider resilience in audit methodologies as highly important.



Section 5: Future of Audit Methodologies

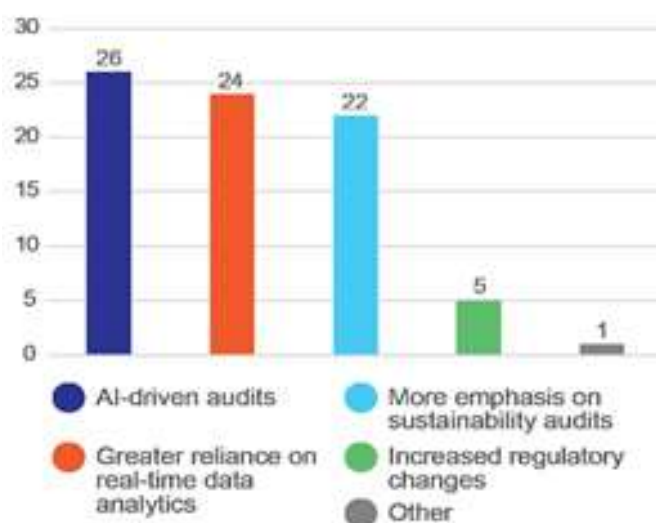
To identify key trends shaping the future of auditing and determine the priorities for SAs in enhancing audit resilience, our findings show a clear move toward digitalization, increased use of data analytics, and a strong focus on capacity building and adaptability.

Emerging trends identified include:

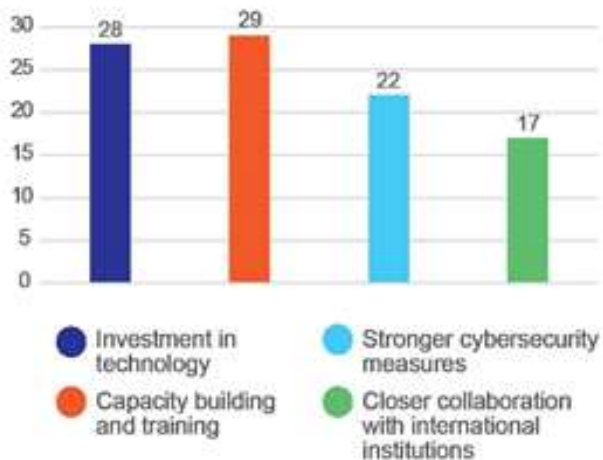
- AI-driven audits (26 responses) – Indicating strong interest in leveraging automation and predictive analytics.
- Greater reliance on real-time data analytics (24 responses) – Suggesting a shift toward continuous auditing.
- More emphasis on sustainability audits (22 responses) – Reflecting a growing focus on environmental and social governance.

Increased regulatory changes (5 responses) and other 1 response. Graph 10.

10. What emerging trends do you believe will shape the future of auditing?



11. In your opinion, what should SAIs prioritize to enhance audit resilience?



To enhance resilience, SAs must prioritise:

- Capacity building and training (29 responses) – Addressing the skills gap in digital auditing.
- Investment in technology (28 responses) – Ensuring institutions remain technologically equipped.
- Stronger cybersecurity measures (22 responses) – Protecting audit processes from digital threats.
- Closer collaboration with international institutions (17 responses). Graph 11.

The future of auditing is expected to be shaped by AI-driven audits (26 responses) and real-time data analytics (24 responses). Sustainability audits are also emerging as a priority (22 responses). To enhance audit resilience, respondents identified technology investment (28 responses) and capacity building/training (29 responses) as top priorities, followed by cybersecurity improvements (22 responses).

5. CONCLUSION AND RECOMMENDATIONS

The evolution of audit methodologies from traditional, periodic reviews to real-time, technology-driven approaches represents a fundamental shift in public sector auditing. This transformation has been shaped by the integration of AI, blockchain, and big data analytics, enabling Supreme Audit Institutions (SAIs) to move beyond compliance-based assessments toward predictive analytics, risk-based auditing, and enhanced governance oversight. These advancements allow auditors to proactively identify financial and operational risks, detect anomalies, and improve the efficiency and transparency of audits.

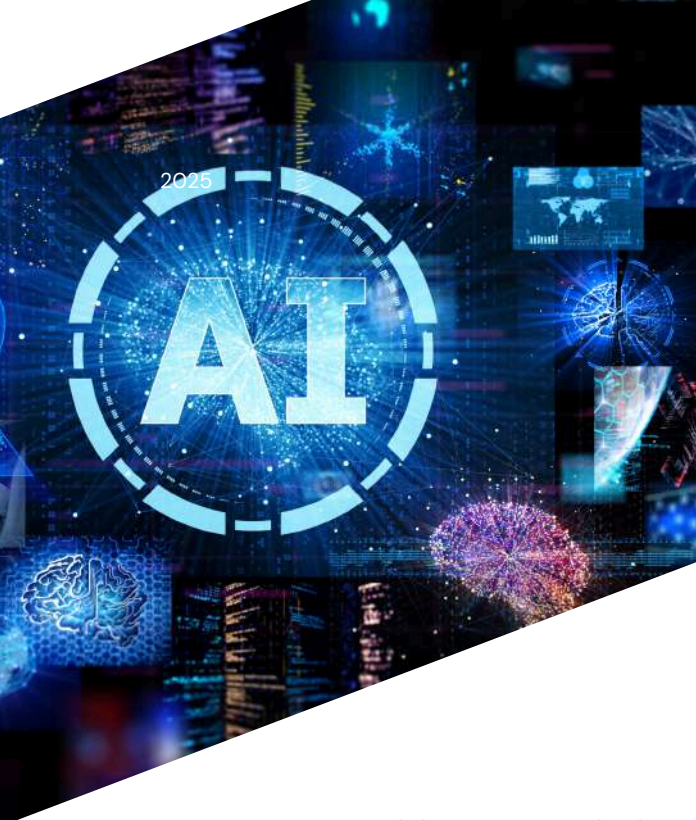
The impact of digital transformation on auditing has been particularly evident in recent years, with the COVID-19 pandemic acting as a catalyst for change. Many SAIs were forced to adopt remote auditing practices, leverage cloud-based platforms for data access, and utilise virtual collaboration tools to maintain audit continuity. This shift was not merely a temporary adaptation but a long-term transformation, as institutions now recognize the value of digital auditing infrastructure in ensuring audit resilience and adaptability to crises. However, despite these advancements, challenges remain in scaling and institutionalizing such digital audit practices, particularly in regions where technical expertise and cybersecurity measures are still developing.

While risk-based auditing has become a dominant practice, the adoption of agile auditing remains limited due to institutional resistance, lack of structured frameworks, and insufficient training programs. Risk-based methodologies have proven to be effective in optimising resource allocation, prioritizing high-risk areas, and improving audit efficiency. Yet, agile auditing—a more flexible and iterative approach—has not been widely adopted. Encouraging the use of more adaptable and dynamic audit methodologies could enhance SAIs' ability to respond to emerging risks and uncertainties in real time.

The future of auditing is poised to be shaped by AI-driven analytics, real-time auditing, and sustainability-focused assessment. AI and machine learning models hold the potential to automate complex audit processes, enhance fraud detection and improve financial risk assessments. However, the implementation of these technologies faces significant barriers, including institutional resistance, concerns over data security and the need for specialised technical expertise. Ensuring that SAIs have access to continuous training, digital skill development, and cybersecurity measures will be essential in maximising the benefits of modern audit methodologies.

Furthermore, sustainability audits are expected to play an increasingly important role in public sector oversight, particularly in relation to climate risk, environmental governance, and alignment with international sustainability frameworks such as the UN Sustainable Development Goals (SDGs). As governments globally place greater emphasis on sustainability and climate resilience, auditors will need to expand their scope to assess environmental and social governance (ESG) compliance, financial sustainability, and the long-term impact of public policies.

INTOSAI standards and guides provide a foundation for adaptability and risk-based auditing. The integration of real-time auditing, predictive analytics, and enhanced risk assessment models presents an opportunity to strengthen performance audits, improve responsiveness to emerging risks, and align SAIs with modern governance expectations. Moving forward, SAIs must invest in digital capabilities, enhance workforce training, and establish regulatory frameworks that support the adoption of innovative audit methodologies to ensure that audits remain robust, adaptable, and strategically valuable in an era of rapid technological change.



RECOMMENDATIONS:

1

SAIs should evolve their performance audit methodologies by integrating real-time data collection, predictive analytics and continuous monitoring tools to enable proactive risk identification and support timely crisis response.

2

SAIs should start preparing for the use of generative AI in auditing by upskilling their entire organisation and helping all auditors develop a better understanding of new technologies.

3

Structured training programs focused on AI, machine learning and big data analytics to equip auditors with technical expertise for digital auditing should be implemented.

4

Case studies and pilot programs demonstrating the effectiveness of real-time auditing in improving audit accuracy and efficiency should be provided.

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Section 1.2

ENHANCING INSTITUTIONAL CAPACITY AND FLEXIBILITY

Paper 5: Human Resources Management as a key factor for effective audits – National Audit Office of Kosovo



Dafina Strana Ujkani

Director of the
Department of Human
Resources Management

National Audit Office of
Kosovo



Myrvete Gashi Morina

Assistant Auditor
General

National Audit Office of
Kosovo

Abstract

Capacity management within an organization, along with the establishment of a cooperative institutional environment supported by professionally trained, valued, dedicated, and motivated staff, has a direct impact on institutional performance. Focusing on capacity development, supporting professional growth, creating conditions for maximum engagement, and promoting a culture of collaboration contribute to fulfilling legal obligations, achieving effective audit outcomes, and upholding institutional principles and values. Effective human resource management supports the development of a work environment that fosters continuous improvement and enhanced performance. Promoting support for professional development is a prerequisite for any organization aiming to maintain public trust and have a positive impact on the public sector and society at large.

Keywords:

human resources, effective management, SAI, NAO (National Audit Office), strategy, decision-making analysis, accountability, personal and professional development.

INTRODUCTION

Human resources constitute one of the fundamental pillars for the efficient functioning of any organisation, including Supreme Audit Institutions (SAIs). They comprise individuals and teams who contribute knowledge, experience, and dedication toward fulfilling the institutional mission. Their impact is essential in achieving strategic objectives and maintaining the professional integrity of public sector auditing.

Organisational culture is closely linked to the behaviours and values exhibited by human resources. A positive organisational culture has the potential to boost morale, trust, and a sense of belonging, thereby enhancing engagement, efficiency, and the overall performance of audit staff. Therefore, promoting an ethical, inclusive, and supportive work environment is a prerequisite for institutional growth.

Continuous professional and personal development of staff is a key component in building institutional capacities. Personal development involves the improvement of interpersonal skills, critical thinking, and emotional resilience, while professional development focuses on acquiring technical knowledge and competencies directly related to audit functions. These two aspects are intrinsically connected and work in synergy to empower employees to face emerging challenges.

In the context of rapid technological transformation and the digitalisation of public administration, SAIs are faced with the need to align human resources with contemporary developments. Investment in professional sustainability involves not only technical training but also the development of digital competencies and the effective use of technology. This requires a proactive and strategic approach to continuous professional education and an organisational culture that values innovation and adaptability. Staff motivation is another critical factor in improving institutional performance.

A work environment that fosters active engagement, recognises individual contributions, and supports career development helps retain talent and increases accountability. Motivation and the work environment create a mutually reinforcing cycle, where progress in one positively influences the other. Thus, institutions aiming for long-term sustainability must implement integrated human resource management strategies that include career planning, performance evaluation, fair compensation, and support for innovation.

In conclusion, human resources are not merely an operational element but a strategic asset for the reform and modernisation of SAIs—especially in times of complex challenges and rapid technological change. Strengthening their capacities should be a central component of any development plan for institutions seeking to be effective, trustworthy, and equipped for the challenges of the future.

Purpose of the Paper

This paper aims to emphasise the strategic role of Human Resource Management in strengthening institutional performance within Supreme Audit Institutions (SAIs). Given that HR management encompasses the development of organisational structures, resources, and procedures to support professional and transparent operations, the study focuses on the importance of investing in the human factor. Specifically, it explores the promotion of professional development, the maintenance of staff motivation, and the creation of a positive and enabling work environment.

By reviewing relevant literature, analysing the International Standards of Supreme Audit Institutions (ISSAIs), and comparing available data, this paper seeks to demonstrate how effective human resource strategies and capacity-building efforts contribute to delivering reliable, efficient, and impactful audits.

These documents are essential because they serve as the foundation for SAIs to ensure the quality of audits; create tailored competence frameworks; develop professional pathways; support professionalism and independence. Most importantly, they are harmonized with international audit standards, ensuring that SAIs operate according to the best global practices and contribute to strengthening transparency and accountability in the public sector. The SAI should create an environment where staff can integrate learning into their daily work, thus complementing existing knowledge and applying it in practice (INTOSAI, Human Resource Management, A Guide for Supreme Audit Institutions, 2012).

In a Supreme Audit Institution, employees must stay updated with evolving standards, auditing techniques, and regulatory changes. This approach will ensure that the SAI has a capable and prepared staff to face new challenges and conduct accurate and reliable audits. In addition to professional development, key factors that drive organizational well-being, according to researchers, include the work environment where staff feel motivated (INTOSAI, Human Resource Management, A Guide for Supreme Audit Institutions, 2012).

The National Audit Office of Kosovo was established in 2003, under the name Office of the Auditor General, under the supervision of the United Nations Interim Administration Mission in Kosovo. Since then, this office has played an important role in strengthening transparency and financial accountability in Kosovo's public sector. The Auditor General of the Republic of Kosovo is the highest institution for economic and financial control in the country. The National Audit Office is an independent institution that assists the Auditor General in carrying out his duties and responsibilities, ensuring reliable and effective audits to guarantee proper management of public resources. The National Audit Office of Kosovo (NAOK), in order to maintain its reputation, credibility, and integrity, places great importance

on the human factor as an asset to the organisation. Since its establishment, the KNAO has offered a collaborative and open environment for development. We consider the evaluation of individuals a responsibility of the organization to recognise their achievements and create fair, flexible, and supportive systems that help each person reach their full potential. To fulfil its mission and support its organisational culture, the National Audit Office, through recruitment processes based on merit principles, engages talented staff and continuously invests in each employee with the aim of embodying the following qualities (NAOK):

- Competent – Possesses the knowledge and skills necessary to fulfil their role with competence and professionalism.
- Committed – Dedicated to the organisation's goals, takes initiative for self-development, and contributes responsibly to achieving shared objectives.
- Communicative – Willing and effective in sharing information, both verbally and in writing, inside and outside the organisation.
- Empathetic – Shows empathy, sensitivity, and support to colleagues and the institutions being audited, understanding their challenges and context.
- Competitive – Driven to achieve success and foster a challenging culture where high performance is recognised and rewarded.
- Courageous – Has the courage to face challenges, think differently, and contribute to organisational improvement and innovation.
- Curious – Motivated to learn, seeks a deep understanding, and explores the root causes of problems to help build sustainable solutions.

Management's focus is oriented toward the development and promotion of staff capacities through the establishment of policies and procedures that promote shared governance based on our values: Independence, Professionalism, Integrity, and Transparency—key principles for building trust, improving communication, and ensuring organisational success.

Results

Training is a crucial tool for the development of the professional capacities of the institution. The National Audit Office of Kosovo (NAOK) has focused attention on all areas of strategic interest, aiming to build a more inclusive and professional approach. In this context, continuous professional development and the improvement of the skills of NAOK staff to meet the requirements and criteria set by INTOSAI form an important basis for performance evaluation and compliance with international auditing standards (ISAs).

To gain a deeper understanding of the experiences, perceptions, and attitudes of the staff regarding professional development and the work environment in the context of public auditing, the responses given to the closed and open-ended questions of the survey have been analysed. This analysis aims to highlight the qualitative dimensions of the employees' experience, beyond the statistical data, enabling the identification of new ideas as well as useful practices that can contribute to further institutional improvement. Below, we present the summarised results:

The summarised results from the survey responses will be presented next. In the following charts, the data collected from a sample of 30 individuals, representing different levels of organisation within the National Audit Office of Kosovo, will be shown. These results will provide a deeper insight into the staff's experience and opportunities for further development of professional capacities within the institution.



Chart 1: Relevance of NAO Internal Training Topics to Participants' Needs

These responses reflect the overall perception of the staff regarding the alignment of internal training topics with their professional needs and the demands of their roles. A majority of respondents (90 %) consider the training topics to be relevant, suggesting that the training initiatives are generally well-tailored to meet the professional development requirements of the staff. However, a small minority expressed the view that the topics do not adequately address their needs, highlighting an area for potential improvement in future training sessions.

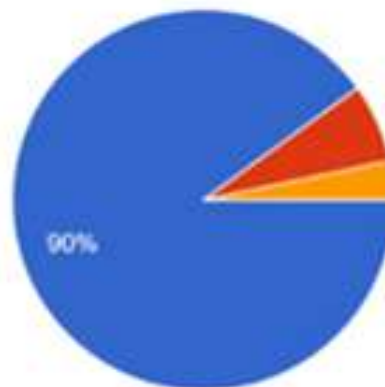


Chart 2: Perceived Impact of Training Attendance on Professional Development

The survey results indicate that training is a key factor in the professional development of staff at the National Audit Office of Kosovo (NAOK). The respondents (26.7%) believe that training contributes to strengthening professionalism and (66.7%) consider for updating the necessary knowledge for auditing. This shows that the NAOK has created a favorable environment for the development of professional capacities, enabling staff to stay in line with international requirements and meet the challenges in the field of auditing.

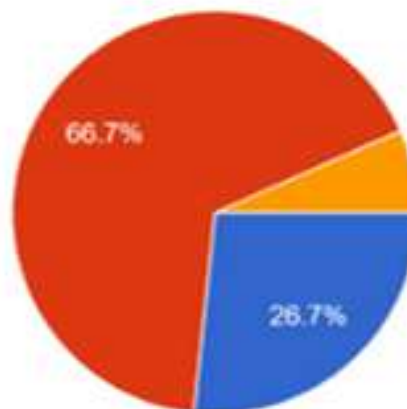


Chart 3 Perceptions of KNAO Financial Support for Certification Achievement

From the given results, the majority of respondents (63.3%) consider financial support for certifications is a significant motivation for achieving positive results while (30%) as an opportunity for promotion. These responses indicate that financial aspects and opportunities for professional development are important for staff and contribute to motivation and high performance.

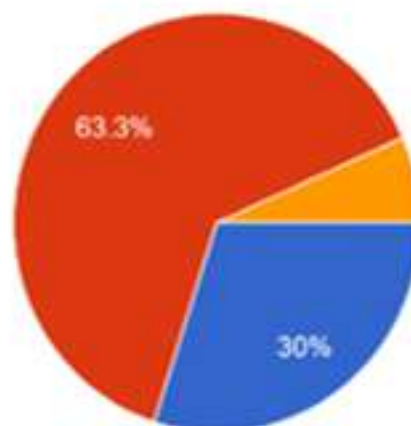


Chart 4 Consideration of Attending EVPs in Professional Associations to Supplement Knowledge

The majority of respondents, 80% of them, consider attending the training as an opportunity to develop their knowledge, while 16.7% others view it as the completion of the obligation to attend these trainings. One respondent did not provide an answer. This shows that attending the trainings is primarily seen as an opportunity for professional growth and continuous development, although there are also individuals who may be concerned about the obligations of the trainings.

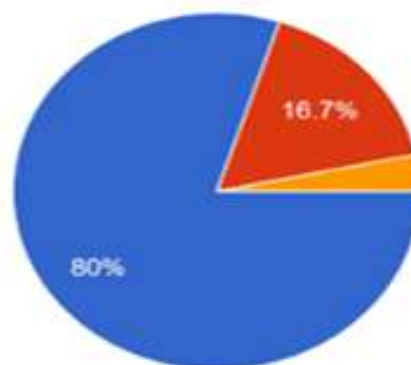


Chart 5 Perceptions of the Adequacy and Relevance of Professional Development Topics for NAO Staff

Based on the responses provided, it can be concluded that a significant majority of respondents (66.7%) consider the training topics to be appropriate and aligned with their learning needs. However, a small number of respondents (10%) believe the topics are not relevant, while another group (23.3%) did not provide a response. This result suggests a broad consensus on the importance and relevance of the training topics, but also indicates an opportunity for review and improvement if needed.

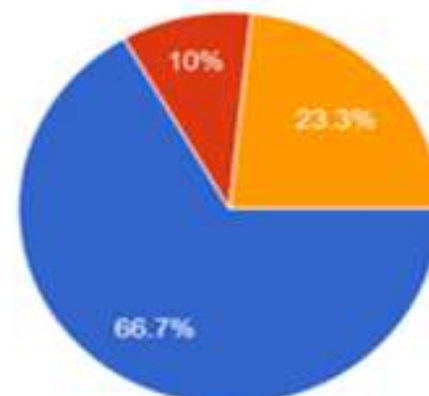


Chart 6 Importance of Using Modern Technology in Auditing

The majority of respondents (83.3%) consider the use of modern technology in the auditing process to be very important, while 16.7% respondents consider it important, but not to the same extent. This indicates a high appreciation of modern technology in improving and increasing the efficiency of auditing processes.

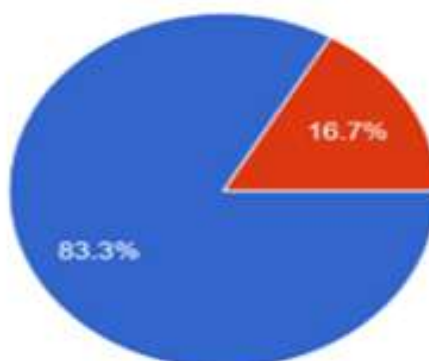


Chart 7 Perceptions of NAO Support and Training for the Use of New Technologies in Auditing

Majority of respondents (46.7%) agree with the question, providing positive answers, while 43.3% disagree. 10% respondents did not provide an answer, indicating a level of uncertainty or lack of information on the matter being addressed.

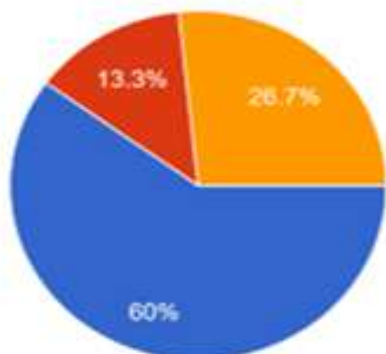
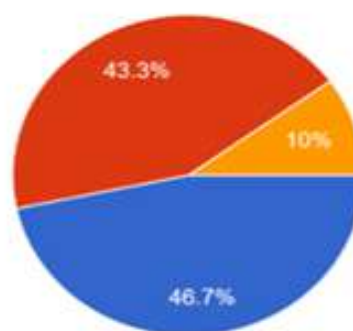


Chart 8 Motivation to Enhance Audit Effectiveness

The majority of respondents (60%) provided positive answers, indicating support for the issue being addressed. (13.3%) respondents gave negative answers, while (26.7%) did not provide any answers, which may indicate uncertainty or lack of information.

Based on the information provided in this questionnaire, the results are satisfactory and reflect a positive environment as well as the commitment of the National Audit Office (NAO) towards its employees. However, our ambitions remain focused on further development and continuous improvement.

Professional development is a primary and ongoing objective of the NAO, supporting and investing in both auditing and non-auditing personnel. This directly leads to the achievement of strategic objectives in a professional manner within auditing processes (NAO S. e.-2.). This approach aims to ensure that our staff possesses the necessary skills and capacities to fulfil the tasks outlined in achieving auditing objectives and the legal mandate. Recognising the importance of investing in this area, the NAO has reached agreements with professional associations to offer training sessions for all auditors, further strengthening workplace competencies. To fulfil the strategic objective of sustainable professional development and to ensure high standards of professional competence, these partnerships enable the NAO staff to access internationally accredited programs in line with INTOSAI professional standards and best international practices in public auditing.

Through collaboration with organizations such as national training institutions, professional accounting and auditing associations, and international partners, it is ensured that auditors follow the path to certification as public sector auditors, enhancing the integrity, credibility, and institutional ability to fulfill the NAO's mandate. Furthermore, these partnerships allow for the exchange of experiences, the adoption of innovative teaching practices, and the creation of networking opportunities both domestically and internationally. The NAO has invested in the certification of its auditing staff and continuous professional education, aligning with international developments in the fields of accounting and auditing. Under the public certification scheme, certified public sector auditors, public sector auditors, and assistant auditors in the public sector have been certified. For performance audits, certifications have been achieved under the Institutional Capacity Development program between the SNAO and NAO. Additionally, in the field of Information Technology Auditing, IDI.

The training plan has been developed with a combined system through online platforms, physical access, virtual seminars, and participation in conferences and various events. In addition to training programs, the staff of the National Audit Office regularly holds meetings and advisory sessions, gaining knowledge from the practices of experts with whom the NAO has Collaboration Agreements, such as: the National Audit Office of Sweden, IDI, PESA-P, the European Union, the Dutch Embassy, OSCE, USAID, the Ministry of Finance of the Republic of Kosovo, KRPP, the World Bank, the UK Embassy project in the Republic of Kosovo implemented by BDO (NAO, Annual Performance Report, 2023), etc.

Conclusions

The personal and professional development of staff is a key factor for the long-term success and sustainability of any public organisation, including the Supreme Audit Institutions (SAIs). Study and practical data, along with survey results, show a clear consensus among participants on the importance of continuous support for professional growth, staying updated with modern auditing practices, and creating opportunities for career advancement. These data indicate that investing in the development of human and organisational capacities is not just desirable but essential to ensure the quality, integrity, and credibility of public audits. An institution that invests in its people and creates a collaborative and supportive environment lays the foundation for high performance and effective fulfilment of its mandate. Effective management of capacities within the organization, along with the creation of a collaborative institutional environment, forms the basis for a trustworthy, effective, and successful supreme audit institution. In a fast-paced and continuously evolving technological environment, it is essential for professionals to be able to adapt to changes.

The ability to manage and develop human resources effectively enables institutions to remain resilient and capable of responding to challenges. Staff motivation and well-being in the workplace are two closely linked and significant factors for the success of an organisation. When staff members are motivated and have well-being, this directly impacts productivity, engagement, and organisational stability. While motivation helps foster engagement and performance, well-being is essential to keep employees ready to contribute effectively. When employees feel entrusted with responsibilities and opportunities to advance their careers, they are more motivated and engaged.

In conclusion, the collected data of KNAO confirms that professional development and well-being in the workplace are essential elements for performance, motivation, and organisational stability. Institutions that prioritise these dimensions are better prepared to face new challenges, integrate technology and innovative practices, and increase their impact on improving public governance. Institutions that focus on the well-being and motivation of staff, along with continuous professional development, are better equipped to meet growing demands, integrate technology, and improve the quality of their audits.

Living in the IT century reminds us that motivation, effective management, and a supportive work environment are essential to maintaining and strengthening both human and institutional capacities. Every SAI should place its trust in human capital—by fostering proper management practices, sustaining and enhancing motivation, and creating enabling conditions for continuous development. The focus must remain centred on people. citizens they serve.



RECOMMENDATIONS

1

Invest in the continuous professional and personal development of staff through regular training, mentoring, and career advancement opportunities to ensure that employees are prepared to face new challenges and contribute effectively to the mission of SAls.

2

Continue fostering a supportive and collaborative work environment that promotes well-being, motivation, and staff engagement through recognition of contributions and promoting a balance between professional and personal life.

3

SAls should prioritize the development of their human resources as they are better equipped to fulfill their mission of providing oversight, promoting good governance, and ultimately contributing to better public service.

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Paper 6: External Audits as Catalysts for Institutional Resilience: A Strategic Approach to Adapting to Environmental and Organizational Change – Albanian Supreme Audit Institution



Miranda Misini

Senior Auditor –
Performance Audit
Department

Albanian Supreme Audit
Institution

Abstract

In today's increasingly complex and uncertain world – shaped by global health crises, climate-related disasters, technological disruption, and geopolitical instability – public institutions must cultivate resilience as a strategic necessity. Traditionally, external audits have functioned as instruments of control and accountability. However, their role is increasingly focused on strengthening institutional capacity and promoting adaptability in a strategic manner. This paper examines how Supreme Audit Institutions (SAIs), through their external audit mandates, can contribute to building resilience within public governance systems. It investigates how Duchek's capability-based model of resilience can be meaningfully interpreted and applied to audit practices, particularly in assessing institutional readiness and adaptability. It argues that when SAIs embed foresight, systems thinking, and continuous learning into their audit processes, they go beyond protecting public resources by actively supporting institutional transformation and enhancing preparedness for future disruptions.

Keywords:

Resilience, External Audit, Duchek Model, Supreme Audit Institutions, Public Governance

1. Introduction

Public institutions today are facing a growing number of complex and overlapping challenges. Global pandemics, climate-related risks, rapid technological change, and geopolitical tensions have made it increasingly difficult for governments to ensure continuity and maintain effective service delivery. In this context, the concept of institutional resilience has become more prominent, as it relates to the ability of organisations not only to respond to crises but also to learn from them and improve over time.

As governments work to strengthen their ability to manage uncertainty, Supreme Audit Institutions (SAIs) are also reconsidering their roles. Traditionally focused on control, compliance, and accountability, SAIs are now expected to contribute more actively to improving how public institutions prepare for and respond to risks. Their position within the public sector allows them to offer insights that go beyond financial oversight and help institutions build stronger, more adaptive systems.

This paper aims to explore how SAIs can support institutional resilience through external audit work. It focuses on how Duchek's (2020) capability-based model of resilience—composed of anticipation, coping, and adaptation—can be interpreted and applied in the context of public sector auditing. The paper offers a conceptual reflection on how resilience thinking can enrich the audit process and expand the relevance of SAIs in an increasingly uncertain world.

2. Conceptualising Organisational Resilience

2.1 Definitions and evolution of resilience

The concept of resilience has evolved across time and disciplines, acquiring different meanings depending on the context in which it is applied. In the early 19th century, engineer Thomas Tredgold used the term to describe a material's ability to absorb energy when deformed and return to its original shape without breaking (Oksana & Dmitri, 2021).

Later, in psychology, the concept of resilience was adopted to describe an individual's capacity to recover from adversity, trauma, or significant stress (Folke, 2006). Over time, the concept expanded into ecology, disaster risk reduction, social systems, and more recently into organizational studies and public administration. In ecology and social-ecological systems thinking, resilience has been defined as the ability of a system to absorb disturbances without shifting into an alternative state. The Resilience Alliance, highlights three key dimensions of resilience: (a) the magnitude of shock a system can absorb without losing its core functions, (b) the system's capacity for self-organization, and (c) its capacity for learning and adaptation. These dimensions have influenced a wide range of policy areas, including environmental governance and sustainable development (Carpenter, Walker, Anderies, & Abel, 2014).

In the field of disaster risk reduction, the United Nations Office for Disaster Risk Reduction (UNDRR, 2015) defines resilience as "the ability of a system, community, or society exposed to hazards to resist, absorb, accommodate to, and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions." Similarly, the World Economic Forum (2024) refers to resilience as "the ability of a system and its component parts to anticipate, absorb, accommodate or recover from the effects of a dangerous event in a timely and efficient manner." These definitions emphasize a systems-oriented perspective, highlighting the importance of maintaining core functions, responding effectively, and adapting swiftly when confronted with external pressures.

A systems-based approach is also present in the OECD (2019) definition, which frames resilience as “the capacity of systems to absorb a disturbance, recover from disruptions and adapt to changing conditions while retaining essentially the same function as prior to the disruptive shock.” This perspective emphasises continuity of critical functions during crises and the institution’s ability to adjust without fundamental loss of purpose or identity.

As the concept moved into the domain of urban systems, resilience began to be viewed as a multidimensional process. Kapucu, Ge, Martín and Williamson (2021), define urban resilience as a process involving infrastructure, governance, and social capital, aimed at enabling cities to prepare for, absorb, and recover from various disruptions. The focus here shifts to complex and interdependent systems operating in dynamic environments.

More recently, resilience has become an important concept in organisational theory and public administration. In organisations, resilience is understood as a dynamic capability that develops over time and through uncertainty. Duchek (2020) argues that resilience in this context includes the anticipation of risks, real-time crisis management, and post-crisis adaptation through institutional learning and process reconfiguration.

In the public sector, resilience extends beyond technical capacity to include ethical governance, institutional legitimacy, and the ability to manage complexity and uncertainty. Lengnick-Hall, Beck and Lengnick-Hall (2011), argues that resilient organisations rely on decentralised decision-making, flexible structures, and a culture of learning and collaboration. Williams, Gruber, Sutcliffe, Shepherd and Zhao (2017), further highlight the importance of leadership, institutional memory, and inter-organisational networks in building and maintaining resilience within public institutions.

The COVID-19 pandemic provided a real-world test of institutional resilience, as governments faced simultaneous health and economic shocks. Institutions were evaluated not only on their response capabilities, but also on their agility in adapting service delivery, financial planning, and crisis governance. In this context, resilience has come to be seen as a strategic competence that combines both stability and transformation (OECD, 2023).

Despite varying definitions, a shared understanding emerges: resilience involves more than simply bouncing back—it requires learning from adversity, adapting to change, and growing stronger through the experience. For public institutions, this means maintaining the capacity to manage risks, engage stakeholders, and continuously adapt policies and practices to meet emerging societal needs.

2.2 Duchek’s capability-based model

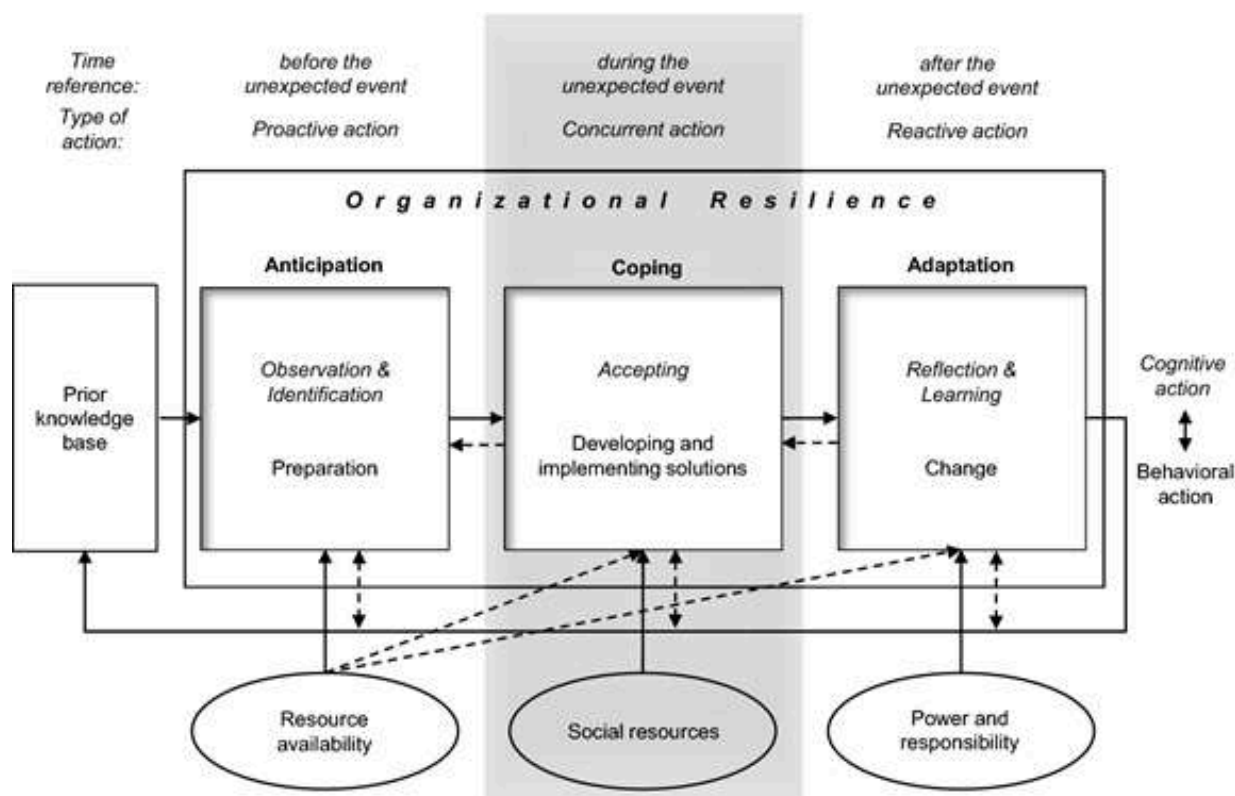
Duchek (2020) offers a comprehensive model that has increasing relevance for the public sector, particularly in the context of governance under uncertainty. Her capability-based framework has been referenced in studies examining how public organizations navigate crises by building institutional learning, fostering adaptive leadership, and enhancing inter-organizational collaboration (Williams, Gruber, Sutcliffe, Shepherd, & Zhao, 2017). For instance, during the COVID-19 pandemic, applications of Duchek’s model were evident in how Supreme Audit Institutions adjusted their audit processes to perform real-time oversight and support emergency governance mechanisms (World Bank, 2020). The model has proven particularly useful for conceptualizing how institutions such as SAls can evolve from static compliance functions to dynamic agents of change.

Duchek's model frames resilience as a dynamic organizational capability, not merely a fixed outcome. This model defines resilience through three mutually dependent stages:

- Anticipation: Developing cognitive alertness, scanning environments, identifying risks early, and engaging in scenario planning.
- Coping: Implementing rapid decision-making, improvisation, flexible resource use, and problem-solving during disruption.
- Adaptation: Learning from crises, institutionalising new processes, and embedding structural reforms.

Crucially, Duchek conceptualises resilience as an iterative, non-linear process. Organizations may move fluidly among the stages depending on the disruption's intensity and institutional maturity. This theoretical lens is particularly well-suited to analysing the evolving role of SAs in uncertain governance environments.

Infograph: A capability-based conceptualization of organizational resilience



Source: Duchek, 2020

3. The strategic evolution of SAIs: From compliance to resilience enablers

Traditionally, Supreme Audit Institutions (SAIs) have been seen as guardians of public accountability, primarily responsible for ensuring that governments use public funds in accordance with laws, efficiently manage resources, and operate transparently. While this compliance role remains essential, SAIs are increasingly being recognized as strategic actors in public governance, with the potential to enhance institutional resilience in the face of complex and evolving challenges (IDI, 2020).

3.1 Moving beyond traditional accountability

The traditional audit approach focus on checking whether public funds are spent according to rules and whether institutions comply with established procedures. However, this reactive model has limitations when institutions are exposed to rapid change, uncertainty, or systemic shocks—such as pandemics, climate disasters, or digital disruption. In such contexts, SAIs can shift from being passive observers to becoming active contributors to institutional learning, foresight, and preparedness (OECD(b), 2019). As Christensen, Lægreid, and Rykkja (2024) note, modern governance challenges require institutions not only to be accountable for past actions but also to demonstrate an ability to manage future uncertainties. In this context, SAIs are well placed to shift from a narrow control function to a more forward-looking, strategic role. This involves identifying emerging risks, institutional vulnerabilities, and gaps in preparedness—functions that contribute directly to building resilience in public organizations. For example, audits that assess the government's disaster response capabilities, infrastructure resilience, or digital preparedness are not only measuring performance, but also generating knowledge that helps public bodies prepare for future crises.

In doing so, SAIs foster a learning-oriented approach to governance, where accountability should be viewed not only as a tool for correction, but also as a catalyst for institutional learning and continuous improvement

3.2 Evolving functions of SAIs

SAIs are uniquely positioned within national governance systems. They operate independently, often with constitutional mandates, and have access to a wide range of data across sectors. This institutional independence and oversight capacity gives them the legitimacy to raise systemic concerns and make cross-cutting recommendations that can drive reform.

According to the INTOSAI Development Initiative (IDI, 2019), SAIs that embed strategic thinking into their audit planning can serve as enablers of change. This means aligning audit priorities not only with traditional risks (e.g., fraud or inefficiency), but also with broader societal challenges—such as environmental sustainability, public health, digital transformation, and inclusive service delivery.

The COVID-19 pandemic reinforced the need for SAIs to modernise their approaches and expand beyond the three traditional audit types—financial, compliance, and performance audits. As Lazăr, Popescu, and Pleșa (2022) argue, the pandemic context required new methods such as real-time auditing and systemic audits, which offered a more holistic view of public sector systems and allowed auditors to assess institutional dynamics as they evolved. These methods are particularly valuable when rapid policy shifts, emergency measures, or multi-sector coordination are involved.

SAIs can contribute directly to strengthening resilience by selecting and conducting audits on topics explicitly linked to institutional and societal resilience. As noted by the INTOSAI Working Group on Environmental Auditing (2022), SAIs can investigate resilience-related funding, assess compliance with relevant legislation, and evaluate the effectiveness of resilience policies and measures.

These audits not only hold governments accountable but also push them toward continuous improvement in building resilient systems.

In addition, SAls play a critical role beyond the immediate crisis phase. According to the World Bank (2020), SAls can support recovery efforts by reviewing and strengthening economic recovery plans, financial management systems, and institutional preparedness for future disasters. To be effective in such contexts, SAls need to maintain a comprehensive mandate covering all public funds and resources mobilised during and after the crisis. Furthermore, they should prioritise flexible, technology-enabled audit approaches (e.g., GovTech tools) and deliver faster, targeted audit products. The World Bank suggests that a series of short, timely reports may, in some cases, provide greater value to decision-makers than a single, delayed comprehensive report.

By adopting such innovative audit approaches, SAls can better capture the complexity of public governance in times of crisis and recovery. Systemic audits help to map out how various institutions interact, where bottlenecks exist, and how resilience could be enhanced through improved collaboration, resource allocation, and information systems.

3.3 SAls as Strategic Actors in Public Governance

As their functions continue to evolve, SAls are increasingly recognised as key actors in shaping institutions that are prepared for future challenges. This strategic role is grounded in their independence, cross-sectoral access to data, and the credibility to offer objective, systems-level insights. Unlike other public entities, SAls have the unique authority to audit performance across ministries and sectors, which allows them to uncover misalignment, assess coherence in policy execution, and recommend institutional reforms that enhance long-term resilience.

SAls contribute strategically by influencing how public institutions think about risk, plan for the future, and manage change. Their recommendations, when aligned with broader reform agendas and national development priorities, serve as levers for institutional transformation. INTOSAI (2023) has emphasized that SAls, by embedding resilience-thinking into audit criteria, can assess not just efficiency or compliance, but also the preparedness, adaptability, and sustainability of governance structures.

Moreover, SAls are increasingly involved in areas that were once mainly the responsibility of the executive, such as setting budget priorities, preparing for disasters, and guiding digital changes. Their forward-looking audits can support important reforms, improve coordination between agencies, and help make sure policy decisions are transparent and based on evidence. SAls do not replace government planning, but they strengthen it by adding accountability and valuable insights.

Thus, as strategic actors in governance, SAls are well-placed not only to monitor public systems but also to guide them toward greater resilience through informed assessments, forward-looking advice, and recommendations that build capacity.

4. Applying Duchek's Resilience Model to SAI External Audits

Organizational resilience, as conceptualized by Duchek (2020), is not a static trait but a dynamic capability that evolves through three interconnected stages: anticipation, coping, and adaptation. This capability-based approach provides a valuable framework for understanding how Supreme Audit Institutions (SAIs), through their audit work, can influence and support the resilience of public institutions. By mapping each capability onto core SAI functions, we can better understand the mechanisms through which audits contribute to robust, future-ready governance.

4.1 Anticipation

The first stage of Duchek's (2020) model, anticipation, refers to an organisation's ability to detect early warning signals and prepare effectively before disruptions occur. In the public sector, SAIs contribute to anticipatory resilience by identifying strategic weaknesses and assessing the adequacy of preparedness measures through forward-looking audits. By engaging in risk-based audit planning and environmental scanning, SAIs can surface vulnerabilities in critical sectors such as healthcare, infrastructure, cyber security, and climate resilience before they escalate into full-blown crises (OECD, 2016).

SAIs also play a vital role in evaluating governments' strategic and risk management plans, ensuring these are not only comprehensive and well-funded but also transparent, inclusive, and based on foresight. According to INTOSAI (2023), such audits help governments recognise strengths and weaknesses in their plans ahead of emergencies. These evaluations frequently examine the coherence of risk registers, contingency budgets, and emergency protocols, while also highlighting the need for clear communication and delegation of responsibilities across agencies and governance levels.

A whole-of-government approach to emergency preparedness is especially critical, and SAIs are uniquely positioned to assess coordination and policy alignment across ministries. Performance audits focused on resilience-related topics—such as disaster risk reduction, infrastructure sustainability, or social protection systems—are essential tools in this process. INTOSAI WGEA (2022) highlights that SAIs can play a proactive role in raising resilience by selecting audit topics that explore compliance with climate and risk-related regulations, evaluate the effectiveness of resilience policies, or review how funding is allocated for preventive measures.

Ultimately, SAIs help embed strategic awareness and long-term risk thinking into the public sector by integrating foresight and scenario planning into their audit methodologies. Their contribution during the anticipation phase lays the groundwork for better institutional response capacity when crises inevitably emerge.

4.2 Coping

The second stage in Duchek's (2020) model—coping—refers to how institutions respond in the face of disruption and maintain core operations while navigating uncertainty. For SAIs, this stage represents a critical opportunity to provide oversight, safeguard accountability, and guide effective resource management during emergencies.

When faced with crises like the COVID-19 pandemic, SAIs have shown agility by conducting real-time or rapid-response audits. These audits offer timely evaluations of emergency procurement procedures, healthcare expenditures, and stimulus distribution programs and coordination mechanisms across government agencies. By doing so, SAIs help ensure that emergency actions are both efficient and ethically executed, especially in the context of relaxed procurement regulations and the urgent need to serve vulnerable populations (Lazăr, Popescu, & Pleșa, 2022).

The World Bank (2020) reported that many SAIs adapted quickly during the pandemic by using digital tools and remote platforms to continue their audit work despite lockdowns and movement restrictions. These adaptations allowed SAIs to maintain oversight in dynamic conditions while ensuring that lessons learned were documented, shared with relevant stakeholders, and used to inform immediate response decisions.

The World Bank (2020) further emphasizes that SAIs must adapt their methods to include short, focused reports that offer actionable findings during fast-evolving situations. Rather than waiting for the end of the fiscal year, real-time reporting can enhance agility and responsiveness in both the legislature and executive arms of government.

INTOSAI WGEA (2022) emphasized that SAIs that had previously audited disaster risk preparedness were better equipped to evaluate COVID-19 responses. Their familiarity with emergency protocols enabled them to identify coordination failures, gaps in service delivery, and risks to fiscal discipline early in the crisis. Furthermore, SAIs issued flash reports and short-form findings that could be immediately used by governments and legislatures to make course corrections.

In this phase, SAIs also scale up agile audit methodologies, train audit teams in rapid data analysis, and integrate citizen feedback mechanisms and ensure findings are publicly communicated to increase transparency. These efforts reinforce public trust by showing that government actions are subject to scrutiny even under crisis conditions. As such, coping audits serve not only as tools of control but as instruments of responsive governance—ensuring that emergency measures are accountable, targeted, and equitable.

4.3 Adaptation

The final phase in Duchek's (2020) resilience model—adaptation—focuses on how institutions learn from disruptions and redesign systems, structures, and behaviors to better withstand future shocks. SAIs play a pivotal role in facilitating this transformation by promoting institutional learning, policy reform, and continuous improvement.

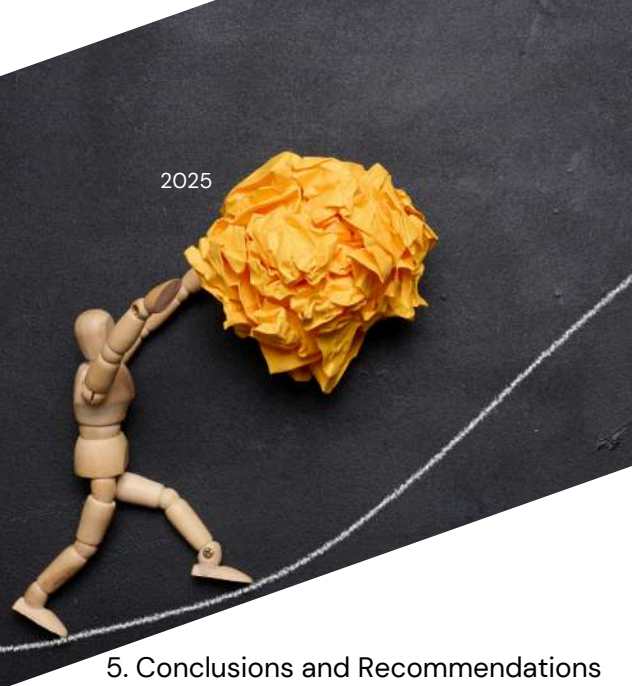
Post-crisis, SAIs conduct thematic audits assess how effectively governments managed emergencies and where weaknesses remain. These assessments help public institutions to critically reflect on their performance and avoid repeating the same mistakes. INTOSAI (2023) emphasizes that SAIs should not only generate such findings but also actively disseminate them through collaborative platforms involving parliaments, civil society, and policy think tanks.

To support lasting change, SAIs track the implementation of audit recommendations and evaluate whether reforms are being translated into organizational practice. This ongoing engagement transforms the audit function from a one-time assessment into a long-term governance tool. For example, SAIs may influence reforms to interagency collaboration protocols, budget processes, or digital infrastructure for audit trails.

Additionally, SAIs help build internal resilience within the public sector by supporting audits of technology readiness and remote work capabilities—issues highlighted during the COVID-19 pandemic. These audits examine, how well institutions maintained service continuity, protected data, and responded to citizen needs in a digital environment. INTOSAI (2023) notes that such evaluations are essential for embedding resilience into the digital transformation of governance.

SAIs also contribute to adaptive resilience by leveraging INTOSAI disaster-related guidance and international standards, ensuring that future audits address evolving risks with updated methodologies. As part of this process, SAIs facilitate workshops, develop guidance materials, and promote knowledge exchanges across the audit community. Their role extends beyond auditing into building the culture, systems, and capacities needed for public institutions to transform challenges into opportunities for renewal.

More broadly, SAIs help cultivate a culture of continuous improvement by emphasizing root-cause analysis, cross-sector learning, and feedback loops within and across institutions. As Duchek (2020) explains, truly resilient institutions go beyond recovery—they incorporate lessons learned from crises into their structures and strategies, enabling more effective responses to future challenges.



5. Conclusions and Recommendations

5.1 Conclusions

This paper has explored how Supreme Audit Institutions (SAIs), through their external audit mandates, can serve as strategic actors in strengthening the resilience of public institutions. By integrating Duchek's capability-based model of resilience—anticipation, coping, and adaptation—into the audit process, SAIs can go beyond traditional accountability functions and actively contribute to institutional transformation.

The analysis has shown that resilience is not a static condition, but a dynamic process that requires foresight, responsive capacity, and a commitment to continuous learning. SAIs, through their independence and access to cross-sectoral information, are uniquely positioned to influence how public institutions understand risk, manage change, and prepare for uncertainty. In times of crisis, such as the COVID-19 pandemic, many SAIs demonstrated that they could adapt audit practices in real-time, issue timely recommendations, and evaluate emergency measures with impact-oriented perspectives. These practices should not be seen as exceptions but as emerging standards for resilience-oriented auditing.

For resilience to be embedded as a long-term strategic objective, SAIs must adopt more flexible, future-oriented methodologies. This includes risk-based audit planning, the use of digital tools, greater engagement with stakeholders, and a focus on system-level interactions. Audits should also include an explicit emphasis on learning, so that institutions can not only identify weaknesses but also generate actionable insights and foster reform.

5.2 Recommendations

1. Institutionalize resilience in audit frameworks: SAIs should integrate resilience indicators and criteria into audit design, especially in areas related to climate risk, digital transformation, health systems, and critical infrastructure.

2. Promote forward-looking audits: Audit priorities should not only reflect past performance, but also assess readiness for future challenges. Scenario-based auditing and environmental scanning can be useful tools in this regard.

3. Enhance collaboration across sectors: SAIs can reinforce resilience by fostering dialogue between ministries, civil society, and other oversight bodies, ensuring that audit findings contribute to system-wide improvements.

4. Invest in audit innovation: Embracing real-time audits, technology-enabled methods (e.g., data analytics), and agile reporting formats will allow SAIs to remain relevant and responsive in dynamic environments.

5. Support capacity-building and knowledge exchange: Through training, guidance, and peer learning, SAIs can strengthen both their internal capacity and that of the institutions they audit, promoting resilience as a shared responsibility.

In conclusion, external audits are not only instruments of control—they are potential catalysts for institutional renewal. By embracing a resilience-oriented approach, SAIs can help shape governance systems that are not just compliant, but capable of evolving through adversity.

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Paper 7: Government Asset Management: the impact of auditing on the improvement of financial management with a special focus on public assets – A comparative approach – National Audit Office of Kosovo



Ramadan Gashi

Assistant Auditor
General

National Audit Office of
Kosovo



Blerina Krasniqi

Director of the Financial
and Compliance Audit
Department

National Audit Office of
Kosovo

Abstract

Auditing in the public sector represents an important mechanism for strengthening governance and improving financial management. Public assets constitute a very important category, where poor management can lead the organization to significant financial and operational losses. In this context, auditing helps to identify weaknesses, strengthen internal control and increase accountability in the administration of public assets.

The main purpose of this research is to assess the impact of auditing on improving financial management, with a particular focus on public asset management. This is done by assessing the level of implementation of recommendations related to asset management, identifying the main challenges and obstacles in improving asset management, and analysing the impact of auditing on increasing accountability and transparency in asset management.

The research will be based on an analytical and comparative approach, taking into account legal requirements, international auditing standards, audit reports, annual financial reports and progress reports on the implementation of recommendations. Comparative analysis methods over the years will be used to understand how audit practices have influenced the improvement of asset management in budget organizations.

The research is expected to highlight the direct impact of auditing on improving internal control mechanisms and strengthening accountability that have contributed to better management of public assets, taking into account the level of implementation of recommendations, which is a strong indicator of improved financial management in this area.

Keywords:

Asset audit, public asset management, implementation of recommendations, internal control, financial accountability, improvement of financial management.

1. INTRODUCTION

Asset management is one of the most important aspects of financial management in the public sector, as it is an essential process for ensuring the efficient administration of assets and resources belonging to the state.

Government asset management is crucial to ensure the optimized use of public resources, minimizing costs and increasing efficiency. The asset management process involves the administration of the life cycle of various assets, from acquisition and use to maintenance and disposal.

To achieve these objectives, a key role is played by auditing, which evaluates and monitors asset management activities to ensure that they comply with legal rules and norms and to identify opportunities for improvement.

The audit process helps identify weaknesses, non-compliance with regulations, and weaknesses in internal controls related to asset management. Implementing audit recommendations directly can lead to significant improvements in aspects of asset registration, inventory, and storage.

2. LITERATURE REVIEW

This paper elaborates on financial management in the public sector and the basics of financial reporting. In particular, it will discuss the management of public assets, what they represent and how they should be managed. It will further elaborate on their preservation through the establishment of internal controls, the internal audit instrument and also the final link of control, which is the external audit.

Financial management in the public sector is a very important aspect for the security and transparency of state spending. This management includes the process of planning, organizing, controlling and monitoring financial resources used by state institutions and public agencies. The main objective is to ensure that public funds are used efficiently and effectively to achieve goals and benefits for citizens.

"Public Financial Management (PFM) is the system by which financial resources are planned, directed and controlled to enable and influence the efficient and effective delivery of public service objectives." (CIPFA, Public Financial Management-Volume 1, 2010)

Financial management encompasses all components of a country's budget, both upstream (including strategic planning, medium-term expenditure framework, annual budgeting) and downstream (including revenue management, procurement, control, accounting, reporting, monitoring and evaluation, audit and oversight).

Public sector accounting is an umbrella term which, depending on the particular context, refers to different accounting systems used by many public sector entities – general government (central and local) as a whole and public enterprises (PEs). Two broad sets of accounting standards are applicable to public sectors worldwide, depending on the nature of the accounting entity – International Financial Reporting Standards (IFRS) and International Public Sector Accounting Standards Public (IPSAS). SOE-s, whose establishment and operations are very similar to those of companies in the private sector, are required to apply full accrual accounting methods under IFRS, while all other public sector entities are encouraged to apply IPSAS. (Mihaela Grubpiscic, 2009).

Public assets, including immovable and movable assets, represent important resources for public administration. Proper asset management is essential to ensure the efficiency and financial sustainability of public institutions. Good asset management practices require accurate recording, complete inventorying and good preservation of assets, to avoid losses and improve performance.

Studies highlight the importance of using modern asset management information systems, which can help improve management efficiency and asset monitoring. Research has also shown that poor asset management can lead to significant financial losses and violations of laws and regulations.

Public asset management is described as “the direction and supervision of an interest in property, with the aim of securing the optimum return. This return need not always be financial, but may be in terms of social benefits, status, prestige, political power or some other goal or set of goals.” (Thorncoft, 1965).

The need for recognition of public assets and efficient use of public assets in many countries, both at the level of central and local authorities, has been driven primarily by the idea that the government and the public should have a complete overview of the country's assets and that the Government is responsible for managing public resources on behalf of all its citizens.

A sound Financial Management and Control (FMCC) system encompasses the overall activity and includes the entire organizational structure of the public entity. However, the essence of FMCC is related to the management and control of income, expenses, assets, liabilities, tendering and contracting procedures, and the way the entity operates. By the term internal control, we mean the instruments that help managers be more effective and efficient, while managing to avoid major risks such as: cost overruns, operational failures, and legal violations (Ministry of Finance, 2020).

The internal control system is a process in an organization, carried out by its personnel at various levels of governance and management, and serves to support the achievement of its operational, reporting and compliance objectives.

There are five components of the internal control system: – control environment, risk assessment, control activities, information and communication, and monitoring.

They interact with the entity's objectives, its structural elements, and operating processes (COSO Integrated Internal Control Framework, 2013).

The basis of accounting and financial reporting of the Kosovo budget according to the LPFMA is the cash basis. Cash management is organized in the form of a single Treasury account. The single Treasury account is a system of bank accounts used for the collection of revenues and the realization of expenditures, which are managed and controlled by the Treasury. Budget organizations have delegated responsibilities for the collection of revenues and the realization of expenditures.

Also, based on the MF Regulation No. 01/2017, they are obliged to maintain separate accounting records on the basis of which they prepare their financial statements and report to the MFPT/Treasury. The annual financial report for the state budget consists of three main statements together with explanatory notes and other annexes, which are prepared by the Treasury, based on the SIMFK records (Ministry of Finance P. d., 2017).

The Ministry of Finance, Labor and Transfers/Treasury is responsible for preparing and fairly presenting the Annual Budget Financial Report on behalf of the Government in accordance with International Public Sector Accounting Standards (IPSAS) – Financial Reporting under the Cash Basis of Accounting, and is responsible for the application of internal controls.

2.1 Legal and reporting basis of assets in the Kosovo Government

The MoF Regulation No. 02/2013 on Asset Management in Budgetary Organizations obliges all organizations to maintain non-financial asset registers that are constantly renewed or updated, depending on new purchases/acquisitions or systematic review of their usage status.

Non-financial assets according to accounting classification are divided into:

Capital assets that have a useful life of more than one year, have a financial value of over €1,000 and ownership and control of the benefits remain with the OB;

Non-capital assets that have a useful life of more than one year, have a financial value of less than €1,000 and ownership and control of the benefits remain with the OB; and

Stocks or spare equipment and office supplies. (Finance, 2013).

Asset management is carried out through two centralized systems: the KFMIS accounting register as an integrated system within the MFPT, where capital assets worth over €1,000 are recorded, maintained, evaluated and reported, as well as the "E-asset" system/application, which is an integrated system within the MIA, where all budget organizations must record, manage and report on non-capital assets under €1,000 and stocks/spare equipment and office supplies.

3. METHODOLOGY

During the research, the comparative and quantitative data approach method was used, and statistical results were extracted from these data. The data were collected from official reports, and the Annual Audit Report on the execution of the Budget of the Republic of Kosovo (BRK) was analysed, presenting the figures of errors in the presentation and reporting of non-financial capital assets over 1,000, non-capital assets under 1,000 and stocks for the last three years.

Also, this paper will address the aspect of the main findings in the field of wealth for the last three years, presenting the trend of the number of institutions that have resulted in findings in the field of wealth over the years. It will be seen how the audit has influenced the reduction of errors over the years in terms of financial reporting of assets and findings in the area of assets, thus reflecting the ultimate impact on improving asset management processes.

4. The role of auditing in the efficient and effective management of government assets

4.1 Internal audit

In addition to ongoing monitoring, those charged with governance may use internal audit to assess the internal control that exists within a public entity. Internal audit is an activity that provides objective assurance or advice, designed to add value and improve the operations of a public entity. The internal audit function plays an important role in monitoring the implementation of internal controls within an entity. (ISSAI 2610) (INTOSAI).

"Internal audit" is an independent and objective advisory activity providing reasonable assurance that aims to increase the value and improve the functioning of the public sector entity, assisting the entity in meeting its objectives by providing systematic, disciplined approaches to assess and improve the effectiveness of risk management, control and governance processes (experts, 2020).

4.2 External audit

Auditing is an independent process that aims to evaluate the financial and operational data of an organisation to ensure that they are in accordance with established policies and procedures. Auditing contributes to strengthening internal control, enabling the identification of weaknesses and deficiencies in the management of assets, and ensuring that these assets are used efficiently and in compliance with the law. Many studies have identified the role of auditing in preventing corruption and misuse of public funds. In this context, auditing is a powerful mechanism that helps identify and correct deficiencies in asset management practices, especially in the public sector. Recognising the great importance of the proper use and preservation of public money and assets, various global societies have historically given special importance to the oversight and review of its management processes. Officials responsible for the administration of money must ensure that taxpayers' money is spent in compliance with the legal framework, efficiently, effectively and for the benefit of citizens.

Meanwhile, taxpayers have the right to be informed about where and how their financial contributions are being spent.

In this context, each country, in accordance with the constitution, mandates the relevant economic and financial control institution which provides assurance to the Assembly and citizens that public money is being spent properly.

The role of the Auditor General is to provide a basis for closing the accountability process between the Assembly and the Government for the implementation of the state budget during the year. This is achieved by applying the principles of managerial accountability at all levels of government, including ministries, municipalities, independent institutions and public enterprises.

In Kosovo, the Auditor General is the highest institution of economic and financial control in the country and the National Audit Office is an independent institution, which assists the Auditor General in carrying out his/her duties.

The reports of the National Audit Office directly promote accountability and provide a solid basis for holding managers of any budget organization to account. In this way, we increase confidence in the spending of public funds and play an active role in ensuring the interest of taxpayers and other stakeholders in increasing public responsibility.

The role of auditing in the management of government assets

Auditing plays a key role in the management of government assets, through:

Ensuring compliance with rules and standards: Regular audits ensure that asset management practices are in line with relevant laws and regulations, guaranteeing that they are being managed according to established guidelines.

Increasing transparency: Audit processes provide a high level of transparency by assessing how public funds have been used for asset management and ensuring that financial data is accurate and reliable.

Improving efficiency: The audit identifies opportunities for improving the use of resources, recommending measures that can reduce losses and increase the efficiency of asset management.

Improving public administration: The audit helps strengthen the capacity of public administration to manage assets more efficiently.

Identifying asset management weaknesses and risks: The audit reveals asset management weaknesses, including inadequate asset maintenance and excessive spending, which increase the financial risk to the government.

Reducing errors and corruption: Audit reports help identify and stop abuses and corruption in asset management, increasing accountability and preventing misuse of public funds.

Improving planning and budgeting: Audit findings help governments improve asset management planning and budgeting, enabling more efficient use of resources and reducing financial losses.

Supporting the creation of new policies: Audits provide recommendations to develop and review government asset management policies, enabling more structured and controlled management of resources.

Asset life cycle optimisation: Auditing helps identify opportunities for optimising the asset life cycle, including periods of use, their maintenance and the right moments to replace them, which has contributed to reducing harmful costs.

Improvement of maintenance processes: Through audits, cases have been identified when assets have not had proper maintenance, which has led to loss of their value. Auditing has contributed to assets remaining in optimal condition for a longer period.

Adaptation to international practices: Some audit practices used in different countries have been used to develop and improve asset management strategies and policies at the national level.

5. RESULTS

5.1 Asset reporting

Audit results regarding the reporting of non-financial capital and non-capital assets and inventories for the last three years (2021, 2022 and 2023) in the Budget of the Republic of Kosovo (BRK) Annual Financial Statements, presenting the value of errors or their overestimation/underestimation over the years.

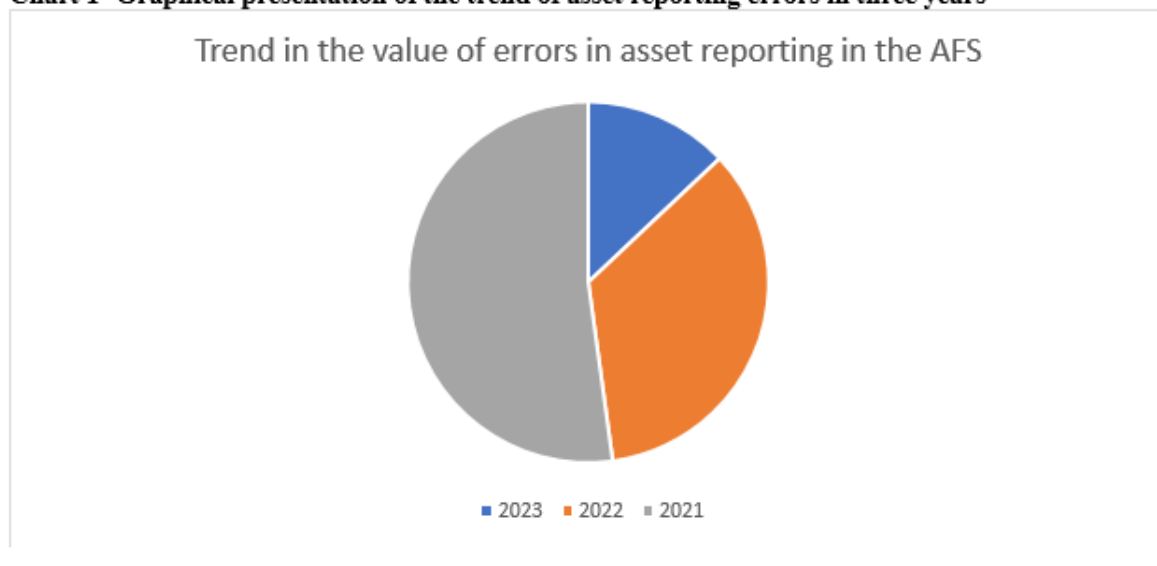
Table 1. Audit results for non-financial capital and non-capital assets and stocks over the years.

Year 2021			
Assets	The value of assets in the AFS-BRK	According to the Audit	Overvaluation / Undervaluation
Capital assets over 1,000€	9,130,085,941	9,044,466,976	85,618,965
Assets under 1,000€	54,800,072	56,911,631	(2,111,559)
Inventory	34,837,700	34,738,702	98,998
Total	9,219,723,713	9,136,117,309	83,606,404
Year 2022			
Assets	The value of assets in the AFS-BRK	According to the Audit	Overvaluation / Undervaluation
Capital assets over 1,000€	9,255,049,451	9,314,148,700	(59,099,249)
Assets under 1,000€	57,697,493	57,936,879	(239,386)
Inventory	44,423,541	40,949,935	3,473,606
Total	9,357,170,485	9,413,035,514	(55,865,029)
Year 2023			
Assets	The value of assets in the AFS-BRK	According to the Audit	Overvaluation / Undervaluation
Capital assets over 1,000€	9,795,923,304	9,814,700,320	(18,777,016)
Assets under 1,000€	60,143,428	61,640,342	(1,496,914)
Inventory	39,708,579	40,236,227	(527,648)
Total	9,895,775,311	9,916,576,889	(20,801,578)

From the table above, we note that, in 2021, non-financial assets in total were overvalued by €83,507,406 (assets over €1,000 were overvalued by €83,606,404, assets under €1,000 were undervalued by €2,111,559, while stocks were overvalued by €98,998). In 2022, non-financial assets in total were undervalued by €55,865,029 (assets over €1,000 were undervalued by €59,099,249, assets under €1,000 were undervalued by €239,386, and stocks were overvalued by €3,473,606). Compared to 2021, the value of the error in the presentation of assets in the 2022 PFV-s has a decrease of €27,741,375.

In 2023, non-financial assets in total were understated at a net value of €20,801,578, (assets over €1,000 were understated by €18,777,016, assets under €1,000 were understated by €1,496,914, while the understatement of stocks was €527,648).

In 2023, there was a significant decrease in the net value of the error at the level of non-financial capital and non-capital assets. Compared to the previous year, the value of the error has decreased by €35,063,451.

Chart 1- Graphical presentation of the trend of asset reporting errors in three years

If we analyse the trend in the level of errors in 2021, 2022 and 2023, also through graphical presentation, we notice significant improvements in the value of the error of assets presented in the government's annual financial statements, which indicates an improvement in the quality of financial reporting over the years.

5.2 Main findings

The audit results have shown that asset controls and management have been accompanied by several shortcomings over the years. Below, we have presented some of the most frequent findings over the years in the area of assets and we have analysed how the number of institutions that have resulted in these findings has evolved over the years.

Table 2. Most frequent asset findings by number of central level institutions in the last three years

Central Level Finding	Number of institutions		
	Year 2021	Year 2022	Year 2023
Overvaluation/Undervaluation of assets	24	17	13
Non-harmonization of the asset register with the inventory report	11	10	6
Non-functioning of the E-Asset system	10	16	4
Deficiencies in the inventory process	4	0	5

Chart 2 – Findings by number of institutions in three years at the Central Level

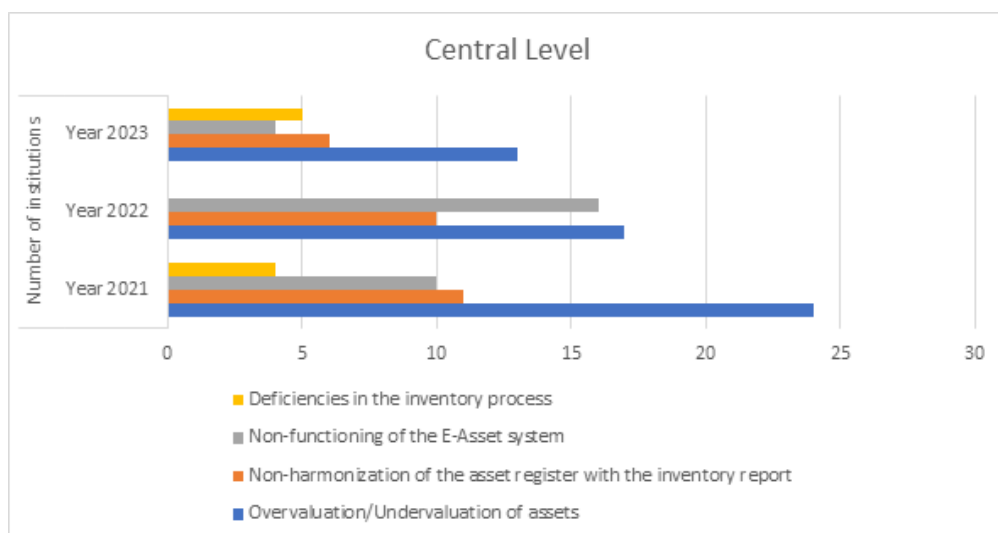
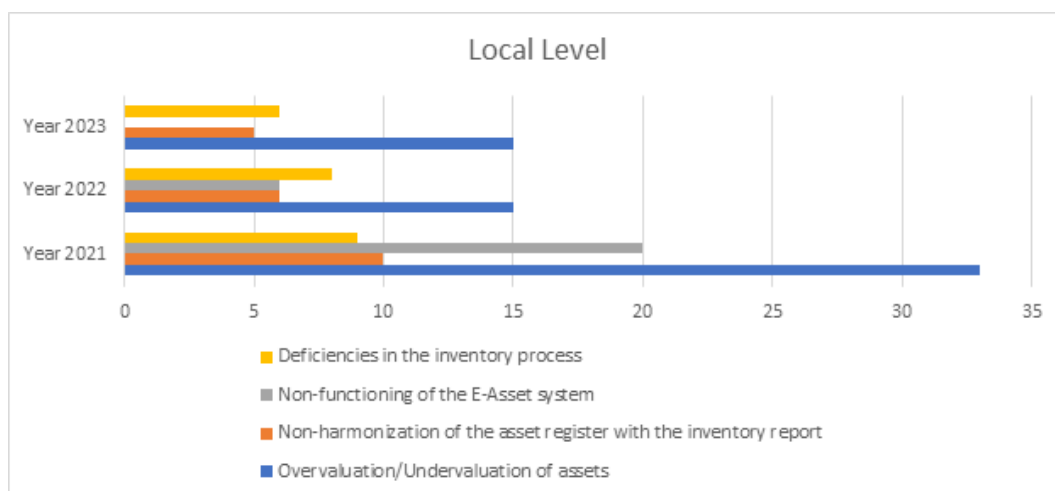


Table 3. Most frequent asset findings by number of local level institutions in the last three years

Local Level	Number of institutions		
Finding	Year 2021	Year 2022	Year 2023
Overvaluation/Undervaluation of assets	33	15	15
Non-harmonization of the asset register with the inventory report	10	6	5
Non-functioning of the E-Asset system	20	6	0
Deficiencies in the inventory process	9	8	6

Chart 3. Findings by number of institutions in three years at the Local Level



If we analyze the number of institutions that have resulted in major findings in the area of assets, both at the central and local level, we notice a significant decrease in the number of institutions with each finding over the years. This indicates a continuous improvement in asset management by public institutions, as a result of the recommendations given by the NAO.



6. CONCLUSIONS

Research shows that auditing has a significant impact on improving government asset management, both in terms of financial reporting and compliance with authorities. By ensuring transparency, increasing efficiency and helping to create better policies and procedures, auditing has an undeniable role in advancing asset management processes and increasing accountability in the public sector.

Based on the two analyses above, it is noted that the audit has had the following impact:

Reducing Errors in Assessment

In 2021, the amount of errors was overstated, with assets being reported higher than those identified after the audit.

In 2022, an improvement was observed, as the overall error was understated, but smaller compared to 2021. This change may indicate an increase in accuracy in asset reporting.

In 2023, the errors were mostly small and there was still understatement, but the difference was smaller compared to previous years. This indicates a more careful and accurate management of public assets.

Improving Accuracy and Transparency

Auditing has helped reduce errors, contributing to a more accurate and reliable picture of public assets. This process has increased accountability and transparency in asset management, reducing the possibility of major errors in asset valuation.

Improving the Legal Aspect

The reduction in findings at the institutional level over the years may reflect an effort to also improve the legal aspect related to asset management, ensuring that public asset management processes are in line with laws and bylaws.

Improving Management Practices

The reduction in reporting errors, the reduction in overestimation and underestimations, and the reduction in findings at the institution level over the years may reflect an effort to improve asset management practices and their valuation.

Impact on Resource Planning and Allocation

Improving the accuracy of public asset valuation can have a direct impact on resource planning and allocation processes. When assets are accurately valued, financial needs and opportunities for optimising resource use can become clearer.

We conclude that auditing has a significant impact on the management of public assets, helping to improve the accuracy and transparency of financial reports. Through regular audits and appropriate recommendations, sustainable improvements in asset management have been achieved and, consequently, in the provision of more efficient and reliable services to citizens.

This improvement is important for achieving responsible and sustainable management of public assets.

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Paper 8: Organizational resilience of SAI's – Albanian Supreme Audit Institution



Dr. Aulent Guri

Chief Auditor

Performance Audit Department

Albanian Supreme Audit Institution

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Persistence and resilience only come from having been given the chance to work through difficult problems.

Gever Tulley

Abstract

This paper apart the organizational resilience concept presents and focuses on the importance of the resilience of Supreme Audit Institutions in terms of increasing and developing capacities in order to face difficulties and to approach to an innovation culture. SAIs are fully responsible for their own capacity development. However, INTOSAI supports member SAIs through capacity development initiatives depending on their needs. Referring to ISSAI 150:16, the SAI can develop institutional strategies for the functioning of their audit mandate by sanctioning and ensuring that it has adequate resources and auditors. Strengthening SAIs is an ongoing process that often involves small steps that over time lead to significant changes. It is crucial that staff are actively involved in designing and implementing change. As changes are planned, consideration needs to be given to building resilience at organisational and professional levels to prevent and respond to risks, challenges and disruption of experienced auditors or management staff. A key aspect of resilience is that people with this quality are those who are able to land on their feet. They seem to be generalists in that they know something about nearly everything. Their constant curiosity allows them to be resilient in their quest to fit in the new norm and be able to be fluent in whichever role. Their tenacity enables them not to give up but continue until they succeed. Strengthening a SAI is more than just improving the technical skills of audit staff.

Keywords:

Supreme Audit Institution, strategy, audit, resilience, capacity.

The concept of organisational resilience

The term “resilience” comes from the Latin word “resilire” (which means to leap or jump back). In the academic community Resilience first produced in the field of ecology. Holling (1973) considered that Resilience determines the persistence of relationships within a system and is a measure of the ability of these systems to absorb changes of state variables, driving variables, and

parameters, and still persist. After then, resilience has been developed in many areas such as ecology, engineering, psychology as well as organisation management. At present, there has no an uniform definition of organisational resilience.^[1]

Anyway, Sutcliffe and Vogus (2003) argue that resilience refers to the maintenance of positive adjustment under challenging conditions. In organisation theory, resilience (sometimes resiliency) often has been used to refer to a characteristic or capacity of individuals or organisations, or more specifically (a) the ability to absorb strain and preserve (or improve) functioning despite the presence of adversity (both internal adversity—such as rapid change, lousy leadership, performance and production pressures—and external adversity—such as increasing competition and demands from stakeholders), or (b) an ability to recover or bounce back from untoward events.^[2]

Lengnick–Hall et al. (2011) defined organisational resilience as a firm's ability to effectively absorb, develop situation-specific responses to, and ultimately engage in transformative activities to capitalise on disruptive surprises that potentially threaten organisation survival. The organisational resilience is different from adaptability, agility, flexibility, improvisation, recovery, redundancy and robustness.

Resilience involves the reaction of the organisation under destruction, which emphasises the ability of recover and develops in a state of uncertainty, discontinuity, and emergency. In particular, organisational resilience has the following characteristics:

- Resilience is a capability under discontinuous, emergent internal and external environment. The organisational resilience is a potential capacity which cannot be perceived in operation activities of organisation. But when the environment becomes disruptive and emergent, organisational resilience can take advantage for organisation.
- Resilience emphasis on survival, adaptability, bounce back and development under disruptive situation. Organisational resilience is recovery ability after destruction rather than a resistance to unexpected event. Organisation with high resilience can adjust timely and shape a new capacity confronted with a variety of dramatic changes.
- Organizational resilience is a multi-level conception and related to the organisational resources, routines and process. Resilience across levels including individuals, groups and organisations and depends on the interactions among different levels. Meanwhile, resilience is a process which affected by resources and routine of organisation.^[3]

[3] Lei XIAO, Huan CAO, *Organizational Resilience: The Theoretical Model and Research Implication*, 2017, pg 2.

[1] Lei XIAO, Huan CAO, *Organizational Resilience: The Theoretical Model and Research Implication*, 2017, pg 1.

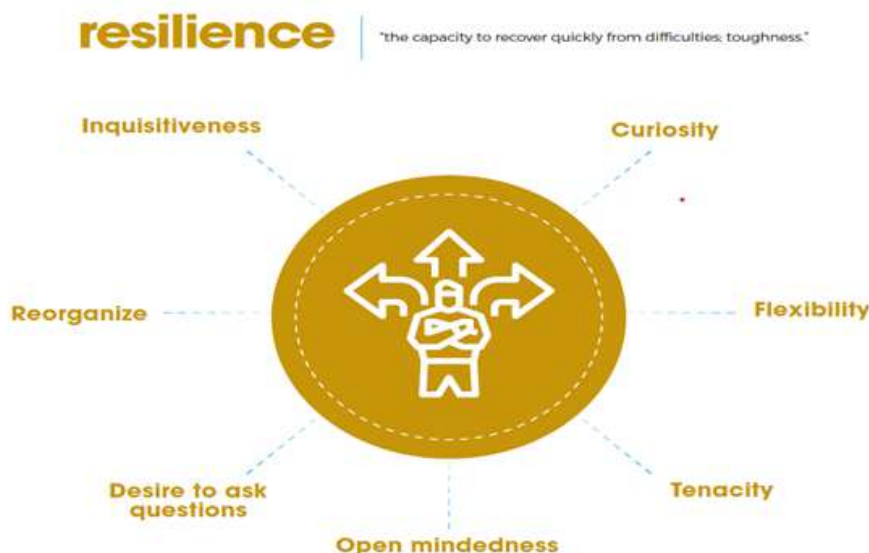
[2] Sutcliffe and Vogus, *Organizing For Resilience*, 2003, pg 3.

Resilience in our audit work

With all the uncertainties of the future, we need to be mindful of the unknown so that when the change happens, we would be able to transform and adapt to the new normal. A key aspect of resilience is that people with this quality are those who are able to land on their feet. They seem to be generalists in that they know something about nearly everything. Their constant curiosity allows them to be resilient in their quest to fit in the new norm and be able to be fluent in whichever role. Their tenacity enables them not to give up but continue until they succeed. Similar to resilience, adaptability and agility are also words often used in future auditor discussions but we noted there is limited definition especially from an auditor perspective. As an auditor, we found that it means we are required to understand that the way things have always been done may have best suited a certain era and so we need to deviate from those things and open our self and our mind to new ways of doing things – differently, better and faster., i.e. using data analytics tool to assess data sets as opposed to having staff manually performing similar task.^{4]}

[4] THE FUTURE-RELEVANT AND VALUE-ADDING AUDITOR, INTOSAI, Capacity Building Committee.

Figure 1. Resilience



Source: INTOSAI

Table 1

COMPETENCY	BRIEF DEFINITION
Tenacity	Demonstrating positivism throughout, being solution orientated in the face of difficult circumstances, refusing to give up, finding solutions, and being able to cope with stress and pressure.
Curiosity Inquisitiveness Desire to ask questions	Staying abreast of the changing business landscape remains critical. The skill is closely connected with visionary thinking and ability to look into future and think forward. Ability and desire to ask questions and to demonstrate open-
Flexibility Open mindedness Reorganize	Having the world changing and being uncertain of the changes, an auditor needs to be able to deviate from plans while remaining open to change so to achieve the desired result.

Why resilience matters for SAIS?

Resilience enables SAIs to withstand and recover from disruptions while maintaining operational effectiveness. For SAIs, resilience manifests in several ways:

- **Maintaining Independence Under Pressure:** Resilient SAIs can uphold their independence and integrity even when subjected to political or external pressures.
- **Continuity of Operations:** During crises, such as natural disasters or political upheavals, resilient SAIs can ensure their audits proceed uninterrupted.
- **Building Trust Amid Challenges:** By delivering timely and credible reports under difficult circumstances, resilient SAIs reinforce public trust and demonstrate their reliability.

For example, during the COVID-19 pandemic, many SAIs rapidly adapted their audit scopes to review emergency procurement processes, ensuring transparency and accountability in the use of public funds. While resilience helps SAIs withstand shocks, adaptability ensures they thrive amid change. Together, these qualities drive organisational agility and long-term relevance. A resilient and adaptable SAI can both defend its core principles during crises and evolve to meet the demands of a changing world.^[5]

[5] Dr. Sutthi Suntharanurak, Building Resilience and Adaptability in Supreme Audit Institutions: Essential for Modern Challenges

There are three levels of capacity building: institutional, organisational and professional.

Institutional development: involves understanding and responding to the wider context in which a SAI is operating, including the broader scope for reform, the potential for partnerships, the unwritten rules of the game, power relations, and cultural norms. It involves assessing the SAI's legal independence, its governance and the capability of its leadership to maintain an ethical position in the face of external threats and to strive for fundamental change.

Organisational development: involves strengthening the systems, procedures, and cultural norms the SAI uses to deliver its mandate and support its professional staff in the delivery of audits. It includes strengthening such functions as strategic planning, human resource management, information communications technology, and internal and external communications.

Professional development: involves understanding what are the skills and experience needed by a SAI's staff, what skills and experience these staff already have and what needs to be done to build on current capability and bridge any gaps. It includes professionalisation not just of audit staff but all staff in a SAI.^[7]

[7] INTOSAI, *Strengthening Supreme Audit Institutions A guide for improving performance*, pg 11.

Strengthening SAIS

Many SAIs are continually strengthening capacity, through internal or external staff development schemes, through regular review and refinement of audit practices and internal processes, and reorganisation of their operations. A programme of capacity strengthening goes further. It requires the SAI to:

- systematically assess its current level of capacity, challenge assumptions and identify strengths, weaknesses and evidence-based lessons learned;
- within the context of the organisational strategic goals, decide why it is seeking to strengthen capacity and what barriers, risks and constraints it might face;
- determine what additional capacity at the institutional, organisational and professional levels it seeks to build to achieve the expected organisational goals and the resources required for this;
- develop a strategy for delivery of this increased capacity, and related outcomes, without interfering with the delivery of its remit – identify the risks it faces in delivering this strategy and develop mitigating measures;
- implement this strategy – considering the inter-relations between the institutional, organisational and professional levels and paying careful attention to any organisational cultural changes needed to make this strategy work;
- evaluate the impact of the changes and the outputs and outcomes achieved; and
- sustain the changes and develop a new strategy to build on what has been achieved.^[6]
- Understand the gap between current and proposed competencies (gap analysis)

Competencies the knowledge, skills and personal attributes critical to successful job performance, where:

- a) Knowledge is the theoretical or practical understanding of a topic;
- b) Skills are the abilities to accomplish specific tasks; developed through learning or experience;
- c) Personal attributes are the mind-set; qualities; characteristics and traits of a person.^[8]

It will be important to gain an understanding of the current state of competencies in the target group for professional development within the SAI, with a view to determining the gap between the existing and new competency definitions. In this way, it will be possible to confirm the exact competencies that are being targeted for recruitment and for inclusion in the professional development pathway. Given the extent of recruitment and/or development that may be required, it may be necessary to create an initial split of competencies into a number of specific development pathways or learning programmes.^[9]

Collaboration

It's essential for auditors to collaborate with and influence those around them for mutual benefit, whether it be working together in audit teams or influencing or cooperating with all external stakeholders in the interest of effective governance and having an impact. With the constantly changing world, the audit environment is equally changing meaning that engagements are more complex and they would require the work and collaboration of multi-disciplinary teams to tackle the challenge. This means that future audit teams will not only include accountants, legal practitioners, forensic auditors, but will include more staff with background in sociology, education, medicine, data science, engineering or environmental management so they can cover the complex issues, bring in different perspectives and engagement on varied projects.

^[8] (ISSAI 150:12).

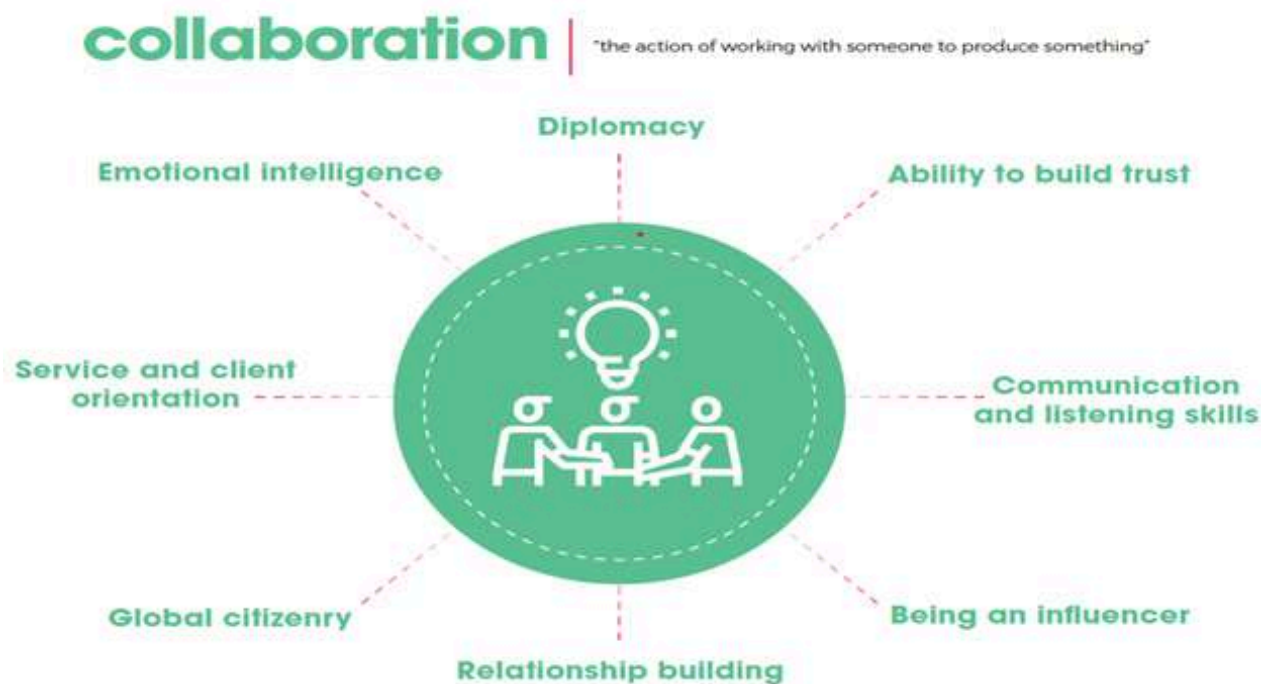
^[9] GUID 1951, *Guidance on the development of pathways for professional development of auditors*, paragraph 23&24.

^[6] INTOSAI, *Strengthening Supreme Audit Institutions A guide for improving performance*, pg 10

It is important for an auditor to be able to connect with all their external stakeholders to build credibility and relevance so to maintain their trust. This could mean tailoring our messages to be focused on citizens and it could also be bringing in our citizens closer to our audits whether it be through collaborating with CSOs or even consultation with the public to solicit issues/topics to include in the SAI's audit program. The key success of collaboration is willingness. All participants have to be willing to sacrifice parts of their own ideas and adopt others in order to respond appropriately to audit risks. That means understanding the idea of a "greater good".^[10]

[10] INTOSAI, Capacity Building Committee, *The future-relevant and value-adding auditor*, pg 17

Figure 2: Collaboration scheme



Source: INTOSAI

Table 2

COMPETENCY	BRIEF DEFINITION
Relationship building	Skill to build authentic and sustainable relationships with a diverse range of actors. Relationships should be based on trust and mutual respect, and they should feel personal. Besides managing relationships, the future auditor should also be able and willing to support team members, as the future audit will become more collaborative both with internal but also external stakeholders.
Communication and listening skills	Ability to listen, filter, and translate information across parties not used to working together. Communicating openly, clearly and constructively about points of tension or difference, including oral, written, report writing and presentation. Ability to present findings in a credible way is important to get the right balance of volume, technical content and types of products to engender trust and ensuring it is understandable and accessible to the public. For the work we undertake as SAIs, we need to ensure that we do not take a one size fits all approach to our output but instead tailor our outputs to the intended audiences to ensure our messages resonate and are trustworthy. This can include using different medium to engage audiences. Auditors need to be up to date with new developments and skills required to perform their task better. Sharing knowledge and practices among colleagues and stakeholders will improve the quality of audit work, and it will help SAIs to remain relevant.
Diplomacy	In future, auditors will increasingly need skills to mediate between different stakeholders; master negotiating skills. They need to be comfortable managing negotiations and conflicts, and managing and harnessing the “constructive friction” that emerges when actors from different sectors collaborate. Diplomacy skills will enable the auditor to be seen as a neutral and objective actor in any situation.
Ability to build trust	SAIs only deserve trust if they themselves are objectively judged as being credible, competent and independent and can be held accountable for their operations. In order to make this possible, they need to be model institutions, setting an example from which others in the public sector and the auditing profession at large can learn. Ability to successfully engage, communicate, listen and build trust.
Global citizenry	Public audit must address long-term global priorities, such as climate change and our ageing population, and other scientific realities that connect human activity and natural world. Auditors have a critical contribution to make to achieving the UN’s sustainable development goals and the need to understand the concept of sustainability (social, economic and environment)
Being an influencer	Capability of not being overwhelmed by outside influence. Focus on objectivity and independent critical thinking, emphasize to the public and media that auditing and audit reports are carried out according to internal procedures. Focusing on the quality of reports and channels of communication helps to be an influencer, rather than being influenced.
Service and client orientation	In performing our audits, our responsibility is to serve the public and there is a responsibility to actively look for ways to help citizens. We have a responsibility to users of audit reports – this creates an ethical responsibility.
Emotional Intelligence	Capability of understanding the feelings of others, understanding different viewpoints, and helping others involved to do the same. Those who have the skill to empathize are more likely to succeed in navigating point of difference or disagreement.

Source: INTOSAI

SAIS reporting on sustainability^[11]

Public sector organizations are interested in analysing their role in the wider context of sustainability. In some countries, sustainability information has been included in public sector national accounts, sustainable development strategies and impact assessments of policies or laws, for instance. Besides these, sustainability can be reported on an organizational level by focusing on the sustainability implications of a public entity's actions. For example, state-owned companies have adopted sustainability reporting principles and governments have produced guidance on the issue. In some cases, it has been local government organizations that have been forerunners in adopting sustainability reporting in the public sector. Some early examples also show how public sector organizations at the state level, such as ministries and agencies, are beginning to report on their sustainability performance.

Supreme Audit Institutions (SAIs) can make some important contributions to sustainability reporting. Firstly, SAIs may want to demonstrate best practice by paying attention to their impact on sustainability (for example, by making a strategic decision to include sustainability in their office policy and annual reporting). And secondly, an SAI, as an external government audit institution, might have a larger role in assessing sustainability reporting practices and thus extending the role that SAIs currently play in providing financial assurance services. Many sustainability reporting elements, such as the stakeholder perspective and employee participation, have a direct link to good governance and transparency. Furthermore, as sustainable development pays attention to inter-generational aspects and combines environmental, social and economic perspectives, reporting about these issues can improve governance problems identified in many audits and increase the efficiency and effectiveness of public sector finances.

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“Sustainability reporting means that sustainability data is presented in a systematic way so that it can be compared with the past and progress concerning the selected targets can be measured.”

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Sustainability information includes both financial and non-financial information. Financial information has a direct link with the financial accounting system and is expressed in monetary units. Non-financial information means that it is not presented in monetary terms and is not based on an accounting standard. Non-financial information can be both quantitative, such as tons or units, or qualitative, such as governance processes, the reputation of an organisation etc. Non-financial information is often more difficult to handle compared with financial information because there are generally no accepted reporting principles and the data can take many different forms. It is often the case that this information is qualitative and can be difficult to measure and access. These difficulties should not limit the use of non-financial information because this kind of information might be very relevant to information users, whether citizens, investors or society at large.

For sustainability to be measurable and reportable, performance indicators need to be chosen. For sustainability reporting to be meaningful, it needs to be connected to the strategy of an organisation. Therefore, the indicators need to be relevant for the organisation. There is a risk that the indicators chosen will not be the best possible ones with reference to sustainability. For example, the amount of recycled waste could be less important than whether the organisation was able to reduce the creation of waste in the first place. In addition, it is important to remember that sustainability information is not only about minimising negative effects (e.g. greenhouse gas emissions) and preventing negative issues (e.g. accidents having environmental or social implications). It is also about enhancing positive impacts, such as using more sustainable products or production methods, innovative new services, or increasing the well-being of employees.

[11] INTOSAI WGEA, *Sustainability Reporting: Concepts, Frameworks and the Role of Supreme Audit Institutions*, pg 9–10.



Conclusion

The success of our audit work relies on audit reports that are produced by employees capable of using their expertise and modern technology tools. Only by responding quickly to today's risks, the Supreme Audit Institutions will be able to identify problems and to increase impacts by having a significant impact on government revenues and expenditures as well as the public. In the context of adversity, individuals and organisations that forge more successful adaptations develop coping skills from which new capabilities arise and extant capabilities are refined, deepened, and strengthened.

Recommendations

- Foster a Psychologically Safe Culture – Encourage open dialogue, innovation, and collaboration within the organisation. This helps auditors feel confident in experimenting with new methods and addressing complex challenges.
- Develop Leadership Resilience and Adaptability – Leaders must exemplify resilience and adaptability by managing crises effectively, embracing lifelong learning, and staying attuned to emerging trends. Leadership programs should focus on emotional intelligence, situational awareness, and strategic foresight.

- Investing in Continuous Learning and Innovation – Equipping auditors with skills in data analytics, AI, and modern audit techniques through training programs. Encourage social learning environments where auditors share insights and best practices.
- Seeking for international cooperation – Participating through audit teams and auditors on different parallel audits with other SAIs as well as on training programs, workshops or seminars.
- Sharing knowledge within SAIs – Sometimes, only a few auditors can be trained in various programs, seminars or workshops for certain areas. Sometimes some auditors are constantly evolving more than others. SAIs should be interested in, enable and make sure that sharing of knowledge is made among all audit staff.

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Section 1.3

NAVIGATING REGULATORY AND TECHNOLOGICAL CHANGES

Paper 9: The Role of Supreme Audit Institutions in Fostering Resilience Through Innovation and Technology – Court of Accounts of Romania



Marin Dragomir

External public auditor

Court of Accounts of
Romania

Abstract

Supreme Audit Institutions (SAIs) play a key role in promoting accountability, transparency, and good governance in the public sector. In a rapidly changing global context marked by rapid technological advances, cyber risks, and complex crises (such as pandemics or climate changes), SAIs must adapt their approaches to strengthen the resilience of public institutions.

Resilience, defined as the ability of public entities to anticipate, respond, and adapt to challenges (Linkov, Trump and Hynes, 2019) posed by the external environment in which they operate, is essential to ensure the stability of the public system. This involves proactive measures to identify and assess risks, monitor them in real-time, and adaptive decision-making processes, all of which can be enhanced through the use of technology and innovation. With the rise of artificial intelligence (AI), big data analytics, blockchain, and cybersecurity audits, SAIs must use these technologies to improve their audit processes and contribute to a more resilient public sector.

This paper explores how SAIs contribute to the resilience of the public system through innovation and technology, considering the strategic objectives of the International Organisation of Supreme Audit Institutions (INTOSAI). Thus, the importance of adopting advanced technologies to increase the efficiency and effectiveness of public audits is emphasised. These technologies enable SAIs to go beyond traditional audits through data-driven analytics, anticipating risks and encouraging proactive governance practices.

It also presents the importance of institutional capacity building, digital readiness, and international knowledge sharing, initiatives that are essential to ensure the relevance and effectiveness of SAIs in the face of emerging challenges.

By adopting an interdisciplinary perspective that integrates governance, technology, and audit methodologies, that paper emphasises the transformative potential of SAIs in supporting resilient public institutions. The findings also provide clear recommendations for collaboratively addressing the complexity of modern governance.

Keywords:

resilience, public institutions, technology, innovation, Supreme Audit Institutions

The global context and evolution of SAIs

Global crises from the last decades have underlined the importance of SAIs in promoting and ensuring public financial stability. Under stress, any fragmentation, inflexibility, and lack of agility in the government mechanism becomes evident: fragile decision-making processes stop exactly when they need to be most efficient and adaptable (Bennet, H et al, 2023). During these crises, governments allocated significant public funds for economic stimulus, recovery, and social protection, which involved establishing robust monitoring measures to ensure that the funds were used efficiently and free from any suspicions of corruption. SAIs have been instrumental in ensuring the transparency of these large-scale interventions, playing an indispensable role in restoring public confidence in the measures taken by governments. Similarly, the global focus on climate change and sustainability has ushered in a new era of environmental audits. These audits focus on ensuring that public funds are allocated effectively to mitigate climate risks, promote sustainable developments, and meet environmental standards.

In this context, the role of SAIs has also expanded to address the risk associated with cyber security. As public systems become increasingly digitised, they face significant vulnerabilities to cyber-attacks, and possible disruptions in the delivery of public services. In response, SAIs have expanded their mandates to include cybersecurity audits to assess the resilience of public institutions to digital threats, and to provide reasonable assurance that governments have developed and implemented measures to protect public systems, data, and critical IT infrastructure. In addition to technological and economic changes, SAIs have increasingly aligned themselves with global audit frameworks that emphasize resilience, transparency, and accountability.

INTOSAI's strategic priorities and objectives, which emphasize support in building capacity and capabilities to adapt to change, respond to emergencies, develop opportunities, improve risk management practices, enhance governance, and ensure continuity of their operations (INTOSAI, 2022), have provided vital guidance for SAIs to respond to these challenges. The Organization for Economic Cooperation and Development (OECD) principles on public governance also emphasize the importance of risk-based auditing and adaptive policy assessment in the face of crises.

The evolution of SAIs is a demonstration of their adaptability and broadening the scope of their role in modern governance. From the traditional focus on financial and compliance audits, SAIs have a significant role in addressing the effectiveness of government programs, promoting sustainability, ensuring cybersecurity, and support global governance initiatives. For SAIs to remain effective and help foster resilience within public institutions and society, they need to embrace new technologies, expand their audit scope to include emerging risks, and continue to collaborate with international organisations to share knowledge and best practices.

The concept of resilience in public governance

Although there are many definitions available for resilience, the definition of resilience on which this paper was based is "the ability of systems to absorb a disruption, recover from disruptions, and adapt to changing conditions while essentially maintaining the same functions as before the disruptive shock" (Linkov, Trump and Hynes, 2019). This definition covers four important stages that organisations must go through when faced with unexpected, adverse events: planning and preparation, absorption, recovery, and adaptation.

It also takes into account the need to continue to perform organizations' key functions and the goal of improving performance over time (OECD, 2023). In this sense, the resilience of public institutions refers to their ability to deliver essential public services, sustain public trust, and maintain stability during crises. This concept emphasizes that resilience is not only about how public institutions react during crises, but also about their capacity to anticipate risks and their long-term institutional adaptability.

Since the pandemic crises caused a large portion of the world to go online, it became imperative to speed up the digitization of public sector organizations' activities while resolving issues with infrastructure, regulations, security, digital skills, and resources. Since it is impossible to predict how the next crisis will impact digital capabilities, organizations should also focus their innovation efforts beyond digitization. Creating an innovation ecosystem with resources, procedures, and rewards can support organizations' ongoing adaptation and resilience building (OECD, 2023). In this context, as public institutions face growing pressures, SAls are increasingly involved in fostering resilience by assessing vulnerabilities and issuing recommendations to strengthen governance frameworks, with government accountability, efficiency, and preparedness for future challenges as key objectives.

To contribute effectively to the resilience of public governance, SAls need to integrate resilience principles into their audit practices, particularly those that apply public financial management. Unlike traditional audit approaches, which often focus only on past financial transactions, modern audit methodologies are geared towards risk-based auditing that anticipates future risks. In addition, by utilizing big data analytics models and artificial intelligence, SAls can identify emerging risks and take proactive steps to address them.

On the other hand, the digital transformation of public institutions and governance systems offers significant opportunities for real-time audits. Technologies such as blockchain, cloud computing, and AI-driven data analytics can enable continuous monitoring of government activities. By using these modern practices, the gap between financial transactions' occurrence and the realization of audit assignments is reduced, transparency of public institutions' work is increased, fraud detection is improved, and the faster identification of misuse of public funds is ensured.

In this context, cybersecurity is a key area for resilience. Governments rely heavily on digital infrastructure to deliver public services, making them vulnerable to cyber-attacks that could disrupt essential public services. SAls should assess strategies for ensuring cybersecurity of critical infrastructures and public institutions, ensuring that governments implement and monitor the necessary safeguards to ensure the continuity of the public services delivery. Cybersecurity audits, which assess compliance with international security frameworks such as ISO 27001 and the NSIT Cybersecurity Framework, help to identify vulnerabilities and recommend improvements to implement efficient and effective measures to mitigate cybersecurity risks.

Adoption of innovation and technology within SAI
Digital transformation has significantly changed public service processes, public financial management, and, more importantly, external public auditing. In recent decades, governments have tended to use technology to pursue goals such as effectiveness and economic efficiency. Modern data-intensive technologies, such as data science and artificial intelligence, hold tremendous potential to rebuild the resilience of the public system (Bennet, H. et al, 2023).

As governments increasingly integrate digital systems, automation, and data-driven decision-making processes into their work, SAls must evolve to keep pace with these changes and ensure that transparency, accountability, and efficiency in the use of public funds are maintained.

Historically, external public auditing practices have utilized traditional procedures and work methods such as manual checks, sampling, and retrospective reviews of transactions and operations. However, as the digital infrastructure has become more widespread, these methods have proven insufficient in relation to the complexity and speed of change of modern public government processes. Technological advances now offer new opportunities for SAls to improve their audit practices and increase their efficiency and effectiveness. In this context, many SAls have demonstrated a strong commitment to adopting emerging technologies to improve their work. This early adoption of new technologies places SAls at the forefront of public sector innovation and provides them with an opportunity to shape the future of audit and governance (INTOSAI WGISTA, 2024). By integrating tools based on cutting-edge technologies, such as artificial intelligence (AI), robotic process automation (RPA), big data analytics, blockchain, and real-time monitoring, SAls can not only improve the efficiency of audit processes, but also provide predictive insights into public service delivery processes, which enable better preparedness and risk management in the public sector. The scientific and technological revolution has the potential to transform the audit paradigm, enhance audit procedures, and provide value and benefits to citizens. Public sector auditing can now be greatly impacted by AI, and SAls could integrate their operations by utilizing AI technologies like machine learning, speech recognition, and image recognition.

The basic concept and definition of artificial intelligence were mentioned by Professor John McCarthy, who originally coined the term "Artificial Intelligence or AI" in 1955. He explained how artificial intelligence (AI) is the science and engineering of creating intelligent devices, particularly intelligent computer programs, and how it is connected to the use of computers to mimic human intelligence (INTOSAI WGISTA, 2024). AI has the capacity to analyse large volumes of data at speeds that far exceed human capacity, making it an important tool for auditors to detect risks and prevent fraud in the use of public funds. AI-based algorithms can identify inconsistencies, unusual patterns, and potential fraud in financial and operational records in real-time, allowing auditors to address issues before they have a negative impact. Using AI, many of the repetitive tasks that auditors handle, such as verifying transactions and identifying anomalies in financial and accounting records, can be automated. Unlike retrospective sampling methods, machine learning models can analyse the entire population of transactions to identify unusual trends of potential fraud or inefficiency. AI-based systems can identify and assess future risks by analysing past data trends, allowing auditors to make proactive assessments of audited processes. Another notable example of AI application in auditing is the use of natural language processing (NLP) to review contracts, agreements, and other textual data. This technology allows auditors to quickly identify inconsistencies, potential compliance issues, or areas where public funds may have been misused. Integrating AI into audit practices has the potential to revolutionise the way audits are conducted, providing more accurate and timely assessments of government spending and financial management. The increasing availability of big data in the public sector presents new opportunities and challenges for auditors. By analysing big data, auditors can better detect fraud, waste, and abuse, and identify unusual trends and anomalies in financial data. In addition, big data can help auditors assess the effectiveness of public policies and programs.

However, managing and analyzing big data also requires advanced technical skills and robust data governance frameworks (INTOSAI WGISTA, 2024). Traditionally, audits have been limited to examining a small sample of transactions, often providing a snapshot of a larger, potentially more complex financial situation at a given point in time. With big data analytics tools, analyses can be conducted across the entire population, encompassing all available financial and operational data to identify discrepancies or patterns that could signal misuse or mismanagement of public funds. By visualizing large data sets and using advanced statistical models, auditors can more effectively assess the financial stability of multiple public institutions and develop forecasts regarding the potential impact of future public policy decisions.

Blockchain technology, widely known for its role in cryptocurrencies, is also beginning to be used in auditing. Essentially, blockchain is a decentralized, secure ledger that records transactions in a transparent and immutable way. The inherent transparency and security of this technology make it an ideal tool for improving accountability in public financial management. The potential of blockchain in auditing extends beyond financial transactions. Its decentralized nature allows for a high level of transparency in the awarding and management of government contracts, procurement processes, and asset management. By using this technology, auditors can ensure that government contracts are awarded fairly, assets are accounted for correctly, and public funds are used efficiently. Blockchain technology is transforming not only the way financial transactions and information are recorded, processed, and stored. This technology will allow auditors to save time and improve audit efficiency, conduct an audit that covers the entire population instead of an audit based on sampling techniques, focus the audit on testing controls rather than testing transactions, and establish a continuous audit process (INTOSAI WGISTA, 2024).

The main challenge in using blockchain in auditing is ensuring that all stakeholders, from auditors to government agencies and public institutions, are adequately trained in the technology and its applications. However, the potential benefits – increased transparency, greater trust in government operations, and fraud detection – make blockchain a promising tool for modernising public sector audits.

In parallel, the development of cloud computing technology has significantly changed the way audits are conducted. Cloud-based systems provide SAs with the ability to securely store and process large volumes of data, while providing the ability to access this data remotely. This eliminates the need to check physical documents and allows access to data in real-time, making audits timely and comprehensive.

Government agencies and critical infrastructures – such as energy, transportation systems, communications, and financial services – depend on IT systems and electronic data to perform operations and to process, maintain, and report essential information. The security of these systems and data is vital to public trust, security, prosperity, and well-being. It is therefore imperative to ensure the confidentiality, integrity, and availability of this information and to respond effectively to security incidents when they occur (INTOSAI WGITA, 2024). In this context, SAs play a critical role. Through cybersecurity audits, SAs ensure that governments have the necessary tools to protect their digital infrastructure and maintain public trust in government actions for the continued delivery of public services. Based on the mandate granted by law, SAs have the authority to assess the cyber resilience of government agencies. Their involvement in cybersecurity audits is now a critical component of their oversight responsibilities, particularly with regard to the measures implemented by public institutions to prevent, detect, and respond to cyber threats.

By conducting detailed audits in this area, SAls provide reasonable assurance that public institutions comply with cybersecurity regulations, protect sensitive data, and ensure their overall digital resilience (ECA, 2020). This task is more urgent than ever as cyberattacks become more sophisticated and pervasive, with the potential to disrupt everything from public health systems to national security.

Despite these advances, SAls must remain vigilant about the risks associated with technological transformation. Excessive use of automated audit processes, without human oversight, could undermine the auditor's qualitative judgment, which is fundamental to audit excellence. In this regard, a balance must be ensured between digital tools and professional expertise within the audit process. Moreover, the integration of technology into audit functions must not lead to an erosion of democratic accountability – public institutions should remain accessible, transparent, and subject to traditional principles of governance, even as they adopt advanced oversight mechanisms.

Integrating technology into SAls' work is not just a trend, but a critical step towards improving the transparency, efficiency, and effectiveness of public sector governance. By adopting innovation and emerging technologies, SAls can improve their ability to detect fraud, assess risks, and provide timely information on government and public institution operations. However, successful adoption requires strategic investment, continued institutional capacity building, and international cooperation. As the public sector continues its digital transformation, SAls must integrate innovation into audit processes to ensure accountability and resilience of the public system.

Key actions and challenges

To meet the expectations of international organizations and domestic stakeholders, SAls must ensure institutional resilience through capacity building.

The Rio Declaration 2022, adopted at the 24th Congress of the International Organization of Supreme Audit Institutions (INTOSAI) in Rio de Janeiro, Brazil, sets out principles guiding the evolution of supreme audit institutions towards more responsive, agile, and flexible entities. Integrating new technologies into audit practices requires a workforce equipped with digital expertise. INTOSAI has consistently stressed the importance of auditor training programs covering areas such as data science, cybersecurity, and emerging technologies. Without this foundational knowledge, SAls risk being unable to scrutinize complex digital transactions, assess the integrity of automated decision-making systems, or conduct meaningful evaluations of e-government initiatives. Establishing partnerships with academia, technology firms, and other SAls can help bridge the expertise gap and ensure ongoing professional development. At the same time, SAls need to strengthen their internal structures to support innovation and resilience, enabling them to operate in an ever-evolving digital environment. Furthermore, to ensure appropriate oversight, SAls should expand the scope of resilience audits to include climate change, economic stability, and cybersecurity.

Another critical dimension of SAI development concerns strengthening legal and ethical frameworks for technology audits. As SAls expand their use of artificial intelligence and big data, they must simultaneously establish protocols that address concerns about the bias of AI algorithms, data privacy, and the ethical implications of digital governance. The INTOSAI Digital Audit Framework highlights the need for clear guidance on the responsible use of technology in audit functions.

Similarly, OECD research highlights that legal frameworks need to evolve to accommodate technological oversight, ensuring that SAls have the mandate to audit digital services, cybersecurity preparedness, and AI-based decision-making processes. Without these legal reinforcements, SAls may face institutional constraints that limit their ability to conduct comprehensive digital audits.

International cooperation also plays a crucial role in developing institutional capacity. Through partnerships with organisations such as the INTOSAI or EUROSAl, national SAls can gain access to valuable resources and knowledge that enable them to stay abreast of global best practices and technological trends. Participation in international professional networks and discussion forums on the subject, such as those promoted by INTOSAI, facilitates the exchange of knowledge and experience, thus strengthening the global capacity to anticipate and respond to future challenges. (INTOSAI SCEI, 2024). Joint audits, cross-border knowledge sharing, and partnerships with organisations such as INTOSAI, OECD, and the European Court of Auditors can promote best practices in external public auditing and ensure that SAls have the institutional capacity to address global challenges.

However, despite their critical role, SAls face numerous challenges in responding to the rapid evolution of increasingly sophisticated IT tools and applications available to them for auditing public entities. There are three types of major barriers to the adoption of emerging digital technologies within public sector organisations: technical and practical challenges, resource and capacity constraints, and institutional, legal and cultural barriers (Ubaldi, B. et al., 2019).

One of the main obstacles is the lack of digital expertise within SAls.

As the demand for auditors with knowledge in areas such as data science, machine learning, and cybersecurity increases, there is a pressing need for institutional capacity-building programs that can train auditors in these emerging areas.

Also, many SAls, especially those in developing countries, face limited resources and budgets, which make it difficult to invest in the necessary digital infrastructure and technologies. The multitude of evolving risks and threats, including digital risks and geopolitical crises, require SAls to constantly update their audit methodologies to remain effective. From the perspective of audit effectiveness, public institutions may resist audit recommendations, especially when they relate to changing established governance structures, and the lack of coordination between different governing bodies negatively impacts the ability to effectively develop a resilient public system.

Beyond financial and technical barriers, there is also the challenge of institutional resistance to change. The transition from traditional, paper-based audits to digitalized audit processes requires a cultural shift within audit institutions and, in some cases, within the governments they oversee. Digital audits can also be negatively impacted by resistance from public institutions, which may express concerns about increased scrutiny or the transparency of their activities as a result of real-time monitoring of data and transactions.

In addition, the digitalization of audit processes must take into account regulations and legal requirements regarding data privacy and security. SAls must ensure that within audit processes, sensitive government data is protected from cyber threats and used in accordance with international privacy regulations, such as the European Union's GDPR. Managing and protecting audit data is essential, and finding a balance between accessibility and security is crucial as technology continues to evolve.

Conclusions and recommendations

As we look to the future, it is clear that the role of supreme audit institutions (SAIs) has never been more critical. In the digital age, the evolving landscape of public sector governance presents both unprecedented opportunities and significant challenges. Technology is reshaping the way public institutions operate, but these advances are also creating increased risks in the form of cyber threats, financial fraud, and the need for more transparent and accountable governance. In this context, SAIs are at the forefront of ensuring public accountability, financial transparency, and government efficiency. On the other hand, the traditional audit methods used by SAIs are no longer adequate to meet these new demands. To continue to fulfil their vital role, SAIs must undergo profound transformation processes to adopt new technologies, strengthen institutional frameworks, and operate efficiently and effectively in a strengthened legal and regulatory environment.

The digital transformation of SAIs is a complex process and requires not only the integration of advanced technologies but also a significant cultural change within these institutions. This process involves modernising audit methodologies, developing a workforce with digital expertise, and expanding their mandate to include emerging issues such as cybersecurity, data privacy, and oversight of digital infrastructure. Digital tools have the potential to improve the efficiency, effectiveness, and transparency of audits, allowing SAIs to conduct real-time audits, analyse large amounts of data to quickly identify irregularities, and detect fraud more proactively.

For SAIs to remain effective and relevant in the digital age, they need to modernise in several key areas. The first of these areas is their digital readiness, i.e. their ability to integrate emerging technologies into the audit process.

Although the importance of adopting emerging technologies in public audit processes is recognised globally, many SAIs are at the beginning of the digital transformation process, lacking the necessary infrastructure, resources, and qualified staff to fully implement these technologies. In addition to technological advances, it is equally important to allocate the necessary resources for continuous training and development of auditors. As SAIs adopt more sophisticated tools, the need for a digitally skilled workforce becomes paramount. Training programs should cover not only the technical aspects of AI, blockchain, and cybersecurity, but also the ethical considerations involved in auditing in a digital world. Partnerships with universities, private technology firms, and international organisations can help ensure that auditors have access to cutting-edge knowledge and certifications that will enable them to effectively perform their duties in this ever-evolving environment.

In addition, there is a pressing need to update the legal and regulatory frameworks governing auditing. Existing laws, created in an era when digital technologies were not a central concern, need to be reviewed to ensure they are fit for purpose in a world where digital audits, cybersecurity assessments, and data protection have become an integral part of the audit process. Policymakers need to take the necessary steps to ensure that the laws governing SAIs' work allow for the use of digital tools, such as artificial intelligence, big data, and blockchain. These legal frameworks should also empower SAIs to assess the cybersecurity capabilities of public institutions and the risks associated with digital infrastructures. Without such updates, SAIs' ability to effectively address the emerging risks of the digital age could be negatively impacted.



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Finally, international collaboration is essential. Many of the challenges facing SAls are global in nature, and solutions will often require cross-border cooperation. As the digital landscape becomes more interconnected, so must efforts to address issues such as cybercrime, financial irregularities, and the adoption of emerging technologies. By collaborating with international organisations such as INTOSAI, OECD, and the World Bank, SAls can share knowledge, best practices, and resources that will help them navigate a complex environment characterised by uncertainty and emerging risks.

As governments, international organisations, and SAls collaborate to implement these reforms, it is essential to recognise that the digital transformation of auditing is not a destination but a continuous journey. Today's tools, technologies, and strategies may not be sufficient for tomorrow's challenges. It is therefore imperative that SAls remain adaptable and continuously improve their capacity and expertise to meet the evolving needs of the public sector. This will not only ensure their relevance in the digital era, but will also contribute to a more transparent, efficient, and accountable public system for future generations.

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Paper 10: Digital transformation in auditing: Turkish Court of Accounts' Case. – Turkish Court of Accounts



Dr. Ahmet Kazan

Principal Auditor

Turkish Court of
Accounts

Abstract

The emergence of new technologies has attracted considerable global attention towards digital transformation. Over the past 50 years, technology or information technologies have profoundly influenced organizational structures, procedures, and business practices in both the public and private sectors. The incorporation of these technologies, however, remained predominantly discretionary until the 2020s in the public sector. Institutions and managers that are aware of the importance of such technologies have successfully transformed public administrations by integrating these technologies into their establishments and reaping substantial benefits.

On the other hand, the effects of the recent Covid-19 pandemic have further increased the necessity of all institutions to move towards digitalization. The necessity of utilizing advanced technologies has emerged as a fundamental requirement for all organisations, regardless of their scale or financial robustness. In this period, auditing has also stood out as a field that can benefit greatly from the comprehensive application of information technologies. Several auditing activities have undergone significant changes as a result of the use of digital transformation in auditing. These changes include the enhanced capacity to conduct continuous audits, the release of auditors from routine document acquisition and review procedures, and the increased ability to identify areas to concentrate on through business intelligence and analytical tools. Thus, this evolution has facilitated auditors in making informed decisions with improved flexibility, convenience, and overall quality.

An analysis of the case of Türkiye reveals that the Integrated Public Financial Management Information System has been adopted as part of the digital transformation efforts. Simultaneously, the Turkish Court of Accounts (TCA), the supreme audit institution and a crucial component of the public financial management system in Türkiye, has significantly invested in enhancing its technological infrastructure, and has started using data analysis in its audit practices through a dedicated Data Analysis Group. This study examines the practices of the TCA in relation to data analysis and the outcomes of these practices for the digital transformation for the TCA and for the Public Financial Management System of Türkiye.

Keywords:

digital transformation, technology, information technologies, public sector, private sector, Covid-19 pandemic, auditing, continuous audits, business intelligence, analytical tools, Public Financial Management System, Integrated Public Financial Management Information System, Turkish Court of Accounts (TCA), data analysis, Data Analysis Group.

1. Digital Transformation in Auditing Area

Digital transformation, which is described as a paradigm shift and a technological revolution, has led to profound changes in many industries. Emerging digital technologies such as artificial intelligence, big data, and blockchain offer significant opportunities and are considered among the most value-adding tools in the field of auditing. It is widely accepted that the adaptation of these new technologies will result in a redesign of all audit procedures, and increased efficiency and effectiveness will significantly enhance the value-added potential of auditing.

Theoretically, numerous studies are being conducted on how the auditing profession should evolve along with digitalization, how the new digital tools mentioned above can be utilised to enhance audit effectiveness, and what opportunities they offer. Significant efforts and substantial financial commitments directed towards the enhancement of digital infrastructure across diverse domains suggest that the forthcoming era will markedly deviate from the present. Institutions and organisations that fail to adapt to these innovations are less likely to secure a place in the future landscape. To avoid being unprepared in the face of this transformation, it is crucial for institutions to adopt a strategic vision that internalises these developments, prioritise innovation, and reshape their corporate culture and human resource profile accordingly. Indeed, the phenomenon of digital transformation constitutes not merely a choice for contemporary society but an imperative—especially within fields such as accounting and auditing, which are anticipated to experience a decline in relevance in case they neglect to embrace modernisation.

Therefore, the comprehensive transformation needed to ensure the functionality and legitimacy of auditing, as well as to increase its potential to add value to institutions and stakeholders can only be achieved by effectively integrating new technologies into audit processes.

In this article, first, the need for change in the field of auditing due to digitalization will be examined, followed by an analysis of big data and artificial intelligence—two key technologies that are increasingly being applied in the digitalized audit environment.

1.1. The Need for Transformation in Auditing

Examining the history of auditing reveals that financial and compliance audits, which entail assessing accounting transactions of organisations in accordance with standards and identifying regulatory violations, have historically served as the foundation for audit activities. With the global adoption of the new public management in the 1980s, performance audits—which focus on ensuring that institutional activities comply with predefined objectives and are economic and efficient, and in line with predetermined goals—have become increasingly important. Therefore, the opportunities for applying these technologies in the auditing industry have grown throughout the years as the goals and nature of auditing have changed to reflect changing requirements and awareness and to keep up with technical improvements.

Consequently, auditing is one of the areas where information technology can be most intensively utilised and has the potential to add the greatest value. Traditionally, it has been conducted primarily through document-based or physical inquiries. Since it is unfeasible to examine every single document and transaction, statistical methods are used to randomly select documents, or specific documents are reviewed in cases where irregularities are suspected. As a result, the use of digital transformation in auditing has resulted in significant changes to several auditing activities, including the ability to conduct continuous audits, the release of auditors from routine document acquisition and review procedures, and the ability to identify challenges through the analysis of historical data. A number of notable advances will occur when digital transformation is extensively applied in the auditing area.

First, sampling will be unnecessary, and a thorough audit of all papers will be feasible. Second, audit evidence will be collected automatically. Thanks to intelligent technology, auditors will have access to all relevant documents and supporting records of the organization being audited in a digital environment. The system will also alert auditors to any irregularities and analyze the data efficiently and comprehensively. The physical and mental workload of auditors will be considerably decreased by all of these advances.

1.2. Digitalization and Digital Transformation in the field of Auditing

Digital transformation represents a paradigm shift, going beyond simply improving business processes and models and requiring a fundamental transformation. Thus, by creating a new corporate culture, changing habits, learning dynamically, adapting continuously and innovating as the most important elements of corporate strategies, the audit profession can be transformed and continue to exist alongside digital transformation. Within this framework, digital transformation in auditing will have profound effects on both the auditing profession itself and the functional structure of audit processes.

1.2.1. Impact on the Profession of Auditing

i. Impact of Digital Transformation on Strategies of Auditees

Tiberius and Hirth (2019), Ramdi (2021), and Aksoy and Gürol (2021) indicated in their empirical studies that digital technology can improve the quality of audit, improve its results and impact, and continue to be a stronger player with new functions it will be called upon to perform. It is also claimed that digital technologies will significantly contribute to auditing in the future, such as by increasing the automation of audit processes and enabling high-added-value work, and by providing an increasingly global perspective to audit activities (Manita, et al., 2020).

ii. The Impact of Digital Technologies on the Scope of Audits

The advantages of digital technology, such as fast access to large amounts of data, the discovery of new data sources, and the possibility of processing non-structured data, including text and images, allow the audit scope to be expanded to cover a wider range of data and to examine whole data sets rather than samples. The inclusion of data from different systems or third parties in the scope of the audit is likely to provide more extensive and deeper information (Köse & Polat, 2021).

iii. Impact of Digital Technologies on Auditor Profile

The increasingly fast digital transformation process and the technological developments in auditing are also affecting the role of auditors and raising their expectations. Although there have been no fundamental changes in auditors' working methods, the increasing use of new technologies will clarify that auditors need to be more technically knowledgeable and skilled. In this constantly evolving and changing environment, it is significant that auditors develop their thinking methods and have the necessary skills in terms of tools for data acquisition, analysis and interpretation, and that these skills are constantly being developed (Köse & Polat, 2021).

1.2.2. Impact of Digitalization on Functional Transformation of Auditing

New digital technologies will allow a comprehensive overhaul of audit processes, methodologies and functions.

i. Focusing on the Future of Design with Real-Time Analytics

Real-time audit has the potential to meet the expectations of investors and other stakeholders that auditors should go beyond traditional audit functions and produce more meaningful recommendations and more in-depth analysis; and to allow auditors to be more efficient, proactive, flexible and forward-looking (Hoelscher, 2018).

Accordingly, digitalization of audit processes enables auditors to analyse data easily through algorithms and generate results in a short time without the need for specific audit procedures, and thus to focus their increased time on more in-depth analysis.

ii. Increased Efficiency and Effectiveness in Auditing

Digitalization optimises the basic activities of carrying out an audit, such as data collection and analysis, obtaining and analysing audit evidence, and arriving at findings and conclusions, thus saving time and money (Kurt, 2023). In general, the use of digital technology and increasing automation of audit processes will enable auditors to focus on more strategic and complex issues. As the share of faster and more efficient activities increases, as does automation, auditors will no longer have to spend a significant proportion of their time on repetitive tasks, allowing them to concentrate on more important tasks such as the analysis of the results of data.

iii. Quality Increase in Auditing

From a technical point of view, the most important impact of digitalization on the actual audit process is its ability to provide tools that improve the quality of the audit by increasing its speed and reliability (Köse & Polat, 2021). Improving audit quality will in turn improve the quality of financial information, support the development of management skills, and allow for better audit. Digital technology will also improve the quality, speed, and efficiency of audits by enabling audit teams to work together in real-time.

iv. Increased Assurance Level

New digital technologies provide a higher level of assurance at lower cost, and allow all transactions to be tested, irrespective of the amount of data (Batchai, 2022). The efficient use of digital technology will reduce the risk of errors when analyzing large data sets and allow for more accurate assessments.

v. Facilitating Detection of Fraud and Corruption

Although traditional audit techniques can detect fraud and counterfeiting by examining standard or unusual transactions and practices, the use of data analytics or artificial intelligence helps to detect the signs of fraud and deception and to identify the underlying causes (Srinivas, 2024). In consequence, new digital techniques will make it easier to detect unusual relationships and related records or transactions; and fraud detection and control efforts will be more effective thanks to advanced risk analysis.

Table 1: The Effects of Digital Transformation on Auditing Practices

Audit Processes and Elements	Impact of Digital Transformation
Audit Methods and Approaches	• Continuous auditing, real-time examination and reporting • Automation of audit processes • Saving time and resources • Expansion of audit scope • Transition to a proactive audit approach • Ensuring a high-quality audit trail with automatic documentation • Making continuous monitoring possible
Audit Planning	• Reduction in the scope of substantive and control tests due to process automation and dynamic risk assessment • Identification of trends and correlations • Design of more focused and effective audit procedures
Evidence Collection	• Collecting evidence from the entire population instead of a sample • Real-time access to large amounts of data • Increased accuracy and reliability of evidence • Reduced need for on-site inspections • Easier analysis and detection with big data management
Compliance Assessment	• Automation of regulatory compliance checks • Digital monitoring of new regulations • Instant detection of violations
Transaction Reconciliation	• Automating reconciliation (blockchain) • Flexibility of information communication and instant reconciliation • Radical change in communication methods
Findings and Recommendations	• Achieving accurate predictions through reliable and timely information provision and analysis • Future projections and modelling opportunities based on trends • Increased objectivity • Enriching insights with non-accounting information obtained from big data • Enabling new perspectives and deeper understanding through increased data
Reporting and Impact	• Real-time, fast and flexible reporting • Detection of all errors in documents and records • More effective prevention of fraud • Strengthening of governance systems • Increase in transparency and accountability • Increase in assurance level
Audit Data	• Remote access to data • Ensuring data security and preventing unauthorized access • Storing data in secure central systems or in the cloud • Processing and analysis of unstructured data
General Impact on Audit	• Increased efficiency and effectiveness in auditing • Holistic evaluation of the audited organization • Increased audit quality and trust in auditing • Increased compliance with standards

Source: Köse & Polat (2021)

1.3. Big Data Analysis in Digitalized Auditing

In this period of dizzying digitalization, data is one of the most important parts of digitization and one of the most visible issues of the last few years. It is used as an important reference source from scientific research to financial studies, from medical research to management consultancy. Available studies on this subject focus mainly on the definition of conceptual limits (Desouza & Jacob, 2014). Although there is no agreed definition of big data (Fredriksson, et al., 2017), the Laney framework, which links big data to the increase in volume, speed and variety of data, is used as a reference to draw conceptual boundaries (Laney, 2001). The Laney definition known as 3V (volume, velocity, variety), referring to the initials of the criteria on which it is based. Over time, veracity (Schroeck, et al., 2012) and value (Dijcks, 2012) have been added to these V's.

In recent years, in particular, auditing has become one of the areas where the positive externalities of digitalization in public administration have been observed. For auditing purposes, big data comprises financial and non-financial data, accounting and non-accounting data, and quantitative and qualitative data that are available in a large quantity, in a variety of formats, and in real-time (Krieger, et al., 2021). In other words, the use of big data in auditing involves financial and non-financial data in various formats, such as figures, text, pictures, and video, produced in a high volume, high speed, and real-time manner. This situation highlights the difficulty in processing large amounts of data in an audit, identifying anomalous situations and visualizing data (Daidj, 2023). Examining the possible results of using big data analysis to address these challenges reveals that it plays a significant role in ensuring optimal performance, particularly during the decision-making process. Using big data analytics will allow auditors to view data more effectively by easily finding out about relationships, structures and models.

They will also be able to contribute more to the structured audit process and risk assessment by learning from them. Using big data analysis, auditors can find information on structures, relationships and models more easily, visualize data and contribute to a structured audit process and risk assessment by learning from the data (INTOSAI, 2022). This will lead to a more transparent and accountable audit approach in public finance management through more efficient decision-making mechanisms.

Considered as part of the audit evidence collection, data supports the audit standard, which is made up of three components, as being sufficient, relevant and reliable at an affordable cost (INTOSAI, 2022). Big data analysis supports this process by providing improved analysis in public auditing through automated software tools and algorithms, increasing the efficiency and effectiveness of public auditing and ensuring greater transparency and accountability in public administration (Lazarevska, et al., 2022). Compared to traditional audits, big data audits offer significant advantages, particularly in terms of technique and methodology (e.g. full data analysis, big data platforms), implementation (e.g. not limited to performance audits, covering the whole process from distribution to management), and organization (e.g. process standard, capacity, network support, multiple oversights). The audit objective of ensuring the economic, effective and efficient use of resources has remained unchanged in this respect; however, the methodology and the relevant legal framework have become more important in terms of how this objective is to be achieved (Pilos, 2020). The digital transformation in public administration is not only a technical evolution, but also a transformation of the way auditing is organized, and decisions are taken and implemented (Otia & Bracci, 2020).

1.4. Artificial Intelligence in Auditing

In its broadest sense, Artificial Intelligence (AI) can be defined as the ability of a computer or computer-controlled machine to perform different levels of activities by imitating and mimicking the behaviour of an intelligent being (Srinivas, 2024). AI describes the process of studying how the human brain behaves in learning, decision-making and problem-solving processes and using the resulting data for the development of intelligent software and computer systems (Vidya, 2024).

As a result of globalisation and digitization, audited institutions are acquiring an ever-increasing volume of data. Accordingly, institutions need scalable infrastructure to cope with such data. With its speed, scalability and numerical capabilities, AI technologies can solve these problems and help institutions manage large data sets more efficiently (Srinivas, 2024).

Besides, the effective audit and analysis of such large amounts of data may be a difficult process using traditional methods. AI, therefore, plays an important role in the management and auditing of big data. Algorithms in AI can quickly analyse complex data sets in any format, such as data, text, images, audio, numerical data, or other formats, identify patterns and relationships, and detect anomalies (Fedyk, et al., 2022). This can be achieved much more quickly and efficiently than a human audit. In addition, thanks to AI, the amount and quality of data analysis increases, and the auditor can focus on higher-risk areas within big data (Rose, et al., 2017).

Indeed, the use of artificial intelligence technology in auditing is primarily a result of the "responsible management" approach (Köse & Polat, 2021). Auditing is one of the areas where AI techniques can be utilised most successfully. In traditional audit processes, which involve labour-intensive and routine work, the use of technology applications in each process enables auditors to take simple, quick, and high-quality decisions.

In the public sector, audits are usually carried out by randomly selecting documents and examining them. As not all documents and transactions are examined at the same time, there may be a margin of error or oversight in statistical methods audits (Avundukluoğlu, 2024). Algorithms developed using text-based or data-mining techniques or machine learning techniques using artificial intelligence will be able to scan all transactions quickly, detect abuses and report them (Kindzeka, 2023). To put differently, AI-based audit systems can offer a dynamic and flexible structure by being capable of continuous data access and analysis. In this way, traditional audits, which are performed at regular and time-bound intervals, are being replaced by continuous audits, which provide continuous oversight of the activities and business processes of institutions and focus on providing real-time assurance through the use of AI (Srinivas, 2024).

Therefore, as routine tasks are automated, according to Davenport and Raphael (2017), auditors will focus less on routine tasks and more on high-risk areas (Davenport & Raphael, 2017). In addition, as they are free from repetitive manual tasks, they can improve audit quality by monitoring the results of automated tasks, reviewing advanced analysis and assessing the impact of findings.

2. Digital Transformation in Turkish Public Financial Management System: An Overview of Integrated Public Financial Management Information System

2.1. Integrated Public Financial Management Information System: Conceptual Framework

Principles to underpin sound budgetary and financial management are identified as clarity, legality, flexibility, predictability, transparency, accountability, and integrity. It is clear that the achievement of these principles requires a well-functioning accounting and financial system in the area of financial management (Dener, et al., 2011).

processes which ensure efficient, economic and effective use of public funds in accordance with established standards, can be considered as an essential element of modern financial management. Many countries are currently developing their financial management information systems on the basis of standards in international government accounting, statistics, to be able to communicate in a common financial language. In this context, it is noted that countries are implementing Integrated Public Financial Management System (IPFMIS) in their public financial management structures. It can be concluded that there is no single universally accepted definition of IPFMIS. However, many authors and researchers refer extensively to the definition given in the World Bank study. According to this study, IPFMIS is defined as “a set of automation solutions that enable governments to plan, execute and monitor the budget, by assisting in the prioritization, execution, and reporting of expenditures, as well as the custodianship and reporting of revenues” (Dener, et al., 2011). The same study also points out that IPFMIS solutions facilitate the exchange of information within the government, as different departments interact on budget execution, financial messaging and management of budget processes. These solutions are essential to streamline these interactions and to increase the overall effectiveness of financial management systems.

It may be stated that IPFMIS pursues common and similar objectives. In this perspective, IPFMIS is an integrated software solution system which supports the different operational processes of public financial management, working in synergy and facilitating the exchange of information where necessary. IPFMIS provides for the exchange of both financial and non-financial data in the various operational processes. In terms of its benefits and importance, three key aspects of IPFMIS can be highlighted as follows (Diamond & Khemani, 2005):

- i. Financial transparency and accountability: IPFMIS is essential to record financial transactions and to provide rapid and effective access to financial information. The possibility of obtaining data immediately increases the accountability of the government to Parliament, auditees and the public.
- ii. Strengthening financial controls: IPFMIS provides a real-time view of commitments and expenditure. The system allows monitoring from the allocation of funds to the procurement, the payment requests by the institutions, the execution of payments and the transfer of funds through the bank channels to the accounts concerned. This function introduces a process monitoring mechanism within financial management, which allows stakeholders to monitor the state of each financial transaction at any given stage by means of integrated systems.
- iii. Effectiveness of financial management in public administration: This is achieved by ensuring that tasks are carried out accurately and on time and by providing the relevant persons or institutions with the necessary information.

2.2. Integrated Public Financial Management Information System in Türkiye

In Türkiye, budget preparation, execution, accounting and reporting of financial transactions are performed using IT. However, these transactions are carried out through various information applications used by financial system actors, and the lack of integration between the processes and the systems used to perform them requires public finance management reforms. Türkiye aims to manage the public financial management information system on a process-based basis and to ensure integration between the financial information systems used by each actor. In this context, the IPFMIS project, which set high objectives for public finance management, was launched in 2016 with a local and national focus on reducing external dependence on software technologies and creating more dynamic and technology-based infrastructures, building on the experience of the financial management information systems initiated in the 2000s and the existing organizational culture.

Completion and implementation of the system is covered by national policy and strategy papers, such as the Medium-Term Program and the Development Plan. The Ministry of Treasury and Finance is responsible for implementing the system and implementing financial management together with their stakeholders. Although the concept and preparatory phases of the IPFMIS project date back many years, the first official and concrete step in defining the project scope, content and plan was taken by the Prime Minister's circular No. 2017-7 and its annex, the Policy Document and the Action Plan, published in May 2017.

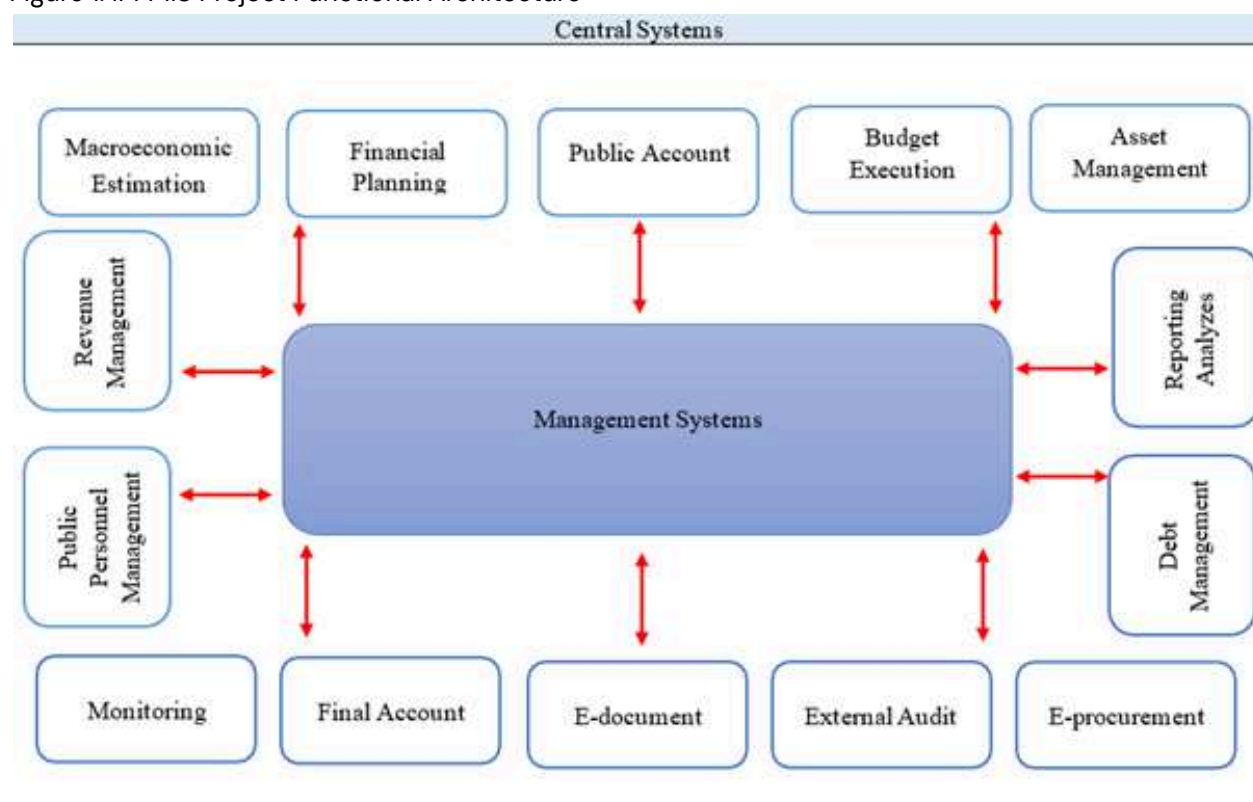
One of the important building foundations of this project is the amendment of Law on Public Financial Management and Control No. 5018, which is known as the "financial constitution", and secondary legislation. According to the additional Article 4 of the Law No. 5018, the Ministry of Treasury and Finance was authorised to carry out all works and transactions within the scope of the Act by electronic means, subject to the opinion of the Turkish Court of Accounts. Furthermore, "the Bylaw on Implementing Procedures and Principles for the Integrated Public Financial Management Information System" was issued on the basis of Supplementary Article 4 of Law No. 5018 contains procedures and principles for establishing interoperability standards for information systems used in various operational processes in the area of public financial management. This Regulation also emphasises that any joint work necessary for the establishment and operation of the IPFMIS will be coordinated with the authorised institution.

The accounting system is the backbone of IPFMIS. The proposed technical architecture provides an information flow for the accounting system from each process. While the former accounting system, due to its structure, contained a single accounting chart and accounted for one accounting unit, the new accounting system allows the accounts of an entire institution to be accounted for, with the function of managing several accounting charts (Pirçekli, 2023).

Moreover, the new accounting system has a predefined automatic accounting recording function for each of the transaction operations. Another important difference between the new accounting system and the previous one is the fact that it allows for the flow of documents electronically. When viewed from the perspective of the expenditure system, it is no longer necessary for those in charge of the expenditure process to be familiar with accounting, as was the case under the previous expenditure system (Ağdeniz & Küçükaycan, 2021). Considering both the accounting and expenditure systems, the different institutions can now speak the same language systematically on different issues due to the advanced integration opportunities introduced by the IPFMIS accounting and expenditure systems.

When examining the work completed or ongoing under the IPFMIS project, it is clear that there is significant progress in particular on accounting, expenditure, revenue and collection. It can be argued that all these activities are of added value as they facilitate the business processes of the institutions within the current technological possibilities, enabling the processes to be performed in an electronic environment and reducing paper-based business processes (Pirçekli, 2023). Given the current work and the objectives, it can be said that IPFMIS has had and will have significant outputs. These outputs basically include the following: efficient use of public resources, improving the level of control in financial processes, advancing financial reporting at different levels, efficient and widespread use of analytical methods in decision-making, reducing red tape and red tape in financial processes and speeding up business processes, increasing the use of electronic documents, using human resources in more efficient areas, providing the necessary data for e-transformation.

Figure 1: IPFMIS Project Functional Architecture



Source: Integrated Public Financial Management Information System Policy Document and Action Plan (The Ministry of Treasury and Finance of Türkiye, 2017)

As shown in the figure, IPFMIS comprised of integrated systems, consisting of software which interact with each other for certain operational processes. These systems are as follows: Macroeconomic estimation, financial planning, Budget execution, Asset and Cash management, Debt management, Revenue management, public personnel management, Asset management, Expenditure management, Accounting and financial reporting, Monitoring and evaluation, and Auditing.

For the automation of the functional processes given above, the following applications have also been integrated into IPFMIS:

- Information systems developed by the Central Regulatory and Supervisory Authorities and the Turkish Court of Accounts;
- Financial management-related applications of the information systems developed by the other public entities; and
- Reference applications drawn up for the joint financial operations of public bodies and made available to them on request.

Consequently, it can be argued that the project aims at implementing all financial processes, and in line with this aim, one of the key elements of the project can be considered to be the creation of the necessary layers of integration between central and administrative systems.

3. Digital Transformation of the TCA: Practices and Outputs

As noted previously, the Turkish administration has achieved its digital transformation with a focus on improving service delivery. This section analyses how this transformation has changed the organization and activities of the TCA as supreme audit institution of Türkiye through using the power of big data.

3.1. TCA Audit in the Turkish Public Financial Management

As per the power of the purse of the Grand National Assembly of Türkiye (GNAT), the Constitution of the Republic of Türkiye regulates that "The Court of Accounts shall be charged with auditing, on behalf of the Grand National Assembly of Türkiye, revenues, expenditures, and assets of the public administrations financed by central government budget and social security institutions, with taking final decisions on the accounts and acts of the responsible officials, and with exercising the functions prescribed in laws in matters of inquiry, auditing and judgment."

Pursuant to Article 4 of the Law on TCA No. 6085, the TCA audits:

- a) Public administrations within the scope of the central government budget and social security institutions, local governments, joint stock companies, which are established by special laws or Presidential decrees and have a share of its capital directly or indirectly owned by the public sector and other public administrations (with the exception of professional organizations having a public status);
- b) All types of administrations, organizations, institutions, associations, enterprises and companies, which are affiliated to or founded by the administrations listed in point (a) or which they are directly or indirectly partners with;

c) All types of domestic and foreign borrowing, lending, repayments, utilization of foreign grants received, giving grants, Treasury guarantees, Treasury receivables, cash management and other matters related to these, all transfers of resources and their utilization

and the utilization of domestic and foreign resources and funds, including European Union funds;

d) All public accounts, including private accounts, funds, resources and activities regardless of whether these are in the public administrations budget.

Furthermore, according to Article 5 titled "Duties of the TCA" of the Law no.6085, The TCA;

- a) Audit the financial activities, decisions and transactions of public administrations within the framework of accountability and submit accurate, sufficient, timely information and reports to the Turkish Grand National Assembly on the results of these audits;
- b) Audit whether or not accounts and transactions of public administrations within the scope of the general government with respect to their revenues, expenses and assets are in compliance with laws and other legal arrangements, and take final decision on matters related to public loss arising from the accounts and transactions of those responsible,
- c) Submit the Statement of General Conformity to the Turkish Grand National Assembly,
- d) Perform the duties of examining, auditing and taking final decision prescribed by laws.

According to these constitutional and legal provisions, the TCA has two types of duties: administrative and judicial (Akçay, 2018). Setting aside its judicial functions—such as determining public losses resulting from unlawful activities, issuing final judgments on the accounts and transactions of those responsible, and providing opinions (on regulations issued under the TCA Law and legislative proposals concerning the institution), its administrative role consists of auditing public administrations and reporting audit findings to the GNAT.

In accordance with Article 36 of the TCA Law, the TCA audit comprises a regularity audit and performance audit. The TCA carries out its audits independently of the accounting or operational periods, either within a given year or over a number of years. In addition, it conducts audits on sectors, programs, projects and specific themes.

Regularity audits are ex-post audits and consist of financial audit and compliance audit. Financial audit is defined in Article 2 of the TCA Law as: "Means the audit on reliability and accuracy of financial reports and statements in accordance with results of the assessment of accounts and transactions of public administrations as well as their financial activities, financial management and control system". The same article also defines compliance audit as: "Means the audit pertaining to the examination of the compliance of accounts and transactions related to the revenues, expenditures and assets of public administrations with laws and other legal arrangements". Article 36/2 of the same law states that the regularity audit is carried out through;

- a) Determining whether revenues, expenditures and assets of public administrations, as well as accounts and transactions pertaining to those are in compliance with laws and other legal arrangements,
- b) Giving opinion on the reliability and accuracy of financial reports and statements of public administrations, by evaluating all kinds of supporting and necessary documents,
- c) Assessing financial management and internal control systems.

Considering performance audit, the TCA Law defines performance audit as: "Means measurement of results of activities with respect to objectives and indicators determined by public administrations within the framework of accountability". In this regard, entities subject to performance audits prepare accountability reports in accordance with Article 41 of the Public Financial Management and Control Law No 5018. The accountability report is structured to include general information about the relevant

administration, as well as financial data encompassing the resources used, budget targets and actual expenditures, reasons for any deviations, assets and liabilities, and details on the activities of unions, institutions, organisations receiving financial assistance, as well as the information on activities carried out in accordance with the strategic plan and performance program, as well as performance data.

3.2. TCA Data Analysis System: VERA

The digitalization of audit procedures was accelerated by the need for more efficient and effective monitoring, given the continuous expansion and expansion of the Turkish public administration system. In this context, the TCA has set itself the objective of increasing efficiency and effectiveness in its auditing, reducing resource use and workload, developing analyses to detect errors and risks in time, and achieving automation of continuous audit and monitoring (Turkish Court of Accounts, 2022). In this context, a Data Analysis Group was set up in 2017 to improve the use of IT systems and, following computer-assisted audit scenarios prepared, the VERA application was developed in 2018 as the most specific initiative in the work on the integration of big data and audit (Turkish Court of Accounts, 2018).

VERA is a large-scale system which is being developed as an integrated audit platform covering all financial transactions of entities subject to the audit of the TCA, and is designed to perform cross-checking by aggregating data from a variety of sources in a variety of formats. By collecting public administration data electronically from various sources, VERA processes this information in a data warehouse and big data analytics-based modelling framework, with dozens of modules and hundreds of analytical tools, which allows auditors to identify errors and risks more efficiently. In summary, VERA is a computerized audit system developed by the TCA to improve the use of IT in audits and to analyze large amounts of data.

Used for the analysis of financial data underlying audits, VERA offers auditors pre- designed static analyses in accordance with different scenarios and allows them to analyse the results of these analyses in detail if they consider it necessary. Furthermore, auditors may conduct analyses of issues not covered by static analysis scenarios at their discretion and do not require knowledge of coding. The development of VERA, including scenarios covering the whole audit process from macro planning to reporting, is progressing, with new analyses and preventive and investigative controls being defined with the new data sets included in the system (Turkish Court of Accounts, 2023). Using accounting regulations and accounting theory as basic criteria, analysis scenarios were developed for data validation, journal entries, financial tables and books, risk analysis, personnel payments, joint working accounts, sampling and standardization of areas of accounts.

Through VERA, auditors who audit public institutions remotely can access the financial data and analysis results of the institutions. Auditors can review the analyses they access through VERA, use them as a basis for preparing other analyses, take the initiative to perform analyses not previously analysed or develop new baseline scenarios (Turkish Court of Accounts, 2022). VERA enables early detection of potential errors and risks through analyses that can be used at any stage of the audit process.

In this context, computer-assisted audit scenarios were developed for the first time in 2017 to analyse data available in the electronic payroll system of public administrations issuing payrolls through the IPFMIS (Turkish Court of Accounts, 2018). Consequently, it is clear that the objective is to increase the efficiency of the audit by identifying errors and risks before the audit work is carried out.

In VERA, various programs have been designed to provide the information needed for the analysis of big data within predefined rules and in a structured way. Data relating to public administration accounting information are defined by the IT Department of the TCA for local governments and central government institutions in the integrated data transfer system (called as BVAS in Turkish). It was reported that BVAS^[1] has been developed to transmit the data required by public administrations to the TCA in an electronic format, following the revision of the Procedures and Principles for the Submission of Public Accounts to the TCA and the notification of accounting units and accounting authorities in 2020 (Turkish Court of Accounts, 2020). The information concerning tables, documents and data sent by public authorities to the TCA shall be tested for accuracy and completeness and then cross-checked and analysed in detail. This will allow regular or immediate checks of errors and risks in public administration data, and to set up audit automation and standardisation (Turkish Court of Accounts, 2022).

[1] Although it first started as a municipal data collection system, BVAS has since evolved into a structure used by all public entities audited by the TCA. Both local governments and central government institutions use the same program.



Table 2: Works Conducted on Big Data Analysis in the TCA

2018						
VERA System	Analysis of Personnel Expenditures	Analysis of Municipalities Accounting				
2019 - 2020						
VERA System	Analysis of Personnel Expenditures	Analysis of Municipalities Accounting Data	Municipalities Risk Analysis	Sampling Modules Developed on VERA		
2021 - 2024						
VERA System	Analysis of Personnel Expenditures	Analysis of Municipalities Accounting Data	Municipalities Risk Analysis	Sampling Modules Developed on VERA	Analysis of Accounting Data of Central Government Institutions	Sampling Modules Developed on VERA / Other Analysis

Source: Integrated Public Financial Management Information System Policy Document and Action Plan (The Ministry of Treasury and Finance of Türkiye, 2017)

The institutionalization efforts of the TCA on data-driven audit approach, which started in 2017, gained momentum in the latter part of the year. Table 2 shows the strategies implemented by the TCA for the period 2018-2024 for integrating the analysis of big data with audit.

While integrating auditing and IT in its data-driven approach, TCA has offered another program to the use of auditors, that is, the TCA Audit Management System (called as DYS in Turkish). DYS has been built on a flexible architecture which is compatible with open standards for the development of open-source software and allows for development according to needs.

Although it first started as a municipal data collection system, BVAS has since evolved into a structure used by all public entities audited by the TCA. Both local governments and central government institutions use the same program.

DYS ensures that audit procedures are planned, carried out, documented and managed in accordance with international standards and auditing manuals. Used by all audit teams, the DYS includes functions such as reporting, guidance, communication, quality control, archiving, access to information sources, authorization, documentation, planning based on risk assessments and reporting on audit practices (Turkish Court of Accounts, 2022). The TCA reported that the communication between VERA and DYS was reinforced in 2022 and the compatibility between the two systems has been improved (Turkish Court of Accounts, 2023). In addition, it was reported that analytical studies on the use of big data in auditing were carried out in 2021 and 2022. Accordingly, a new scenario was added to the analysis of data verification and personnel expenditure, and discrepancies between the data received from the public authorities at different dates were started to be detected by using differential analysis.

3.3. Big Data Analytics in Data Life-cycle Framework

Within the data life-cycle, which includes the stages of collection, preparation, analysis, visualisation and maintenance of data availability, the following sections attempt to explain the steps taken by the TCA over the years in the context of the big data analytics process, with particular emphasis on the transformation of the audit process.

3.3.1. Collecting Data and Preparing for Analysis

The process of extracting information from raw data, known as the data life-cycle, starts with collecting the data and preparing it for analysis. All public bodies audited have therefore started transmitting their data, which form the basis of the tables and documents in their accounts, to the TCA in electronic form. Moreover, thanks to the flexibility of the system, auditors can also transfer data obtained during the audit process to the system, in addition to data from the accounts and payroll (Turkish Court of Accounts, 2022). As data are received through the system, standardisation is ensured from the outset and no further work is needed to prepare the data for analysis. This will significantly reduce the workload of audit teams in these areas.

Furthermore, from the fiscal year 2023 onwards, expenditure documents which are the basis for the accounting records of public administrations within the central government shall be added to the accounting records as electronic documents or in scanned form. It is certain that these documents will, in time, also evolve into structures that can be read, interpreted, and analysed by AI.

3.3.2. Data Analysis and Reporting of Results

After the data have been collected and prepared for analysis, the analysis process is performed and at this stage each element of the mass data is an input to the audit. A transformation process is performed in order to obtain first the audit evidence and then the audit opinion by processing the data converted into data in the light of the legislation.

In order to analyse the records collected from the institutions and converted into data that can be processed in the context of the legislation, it is necessary to compare the existing data with the data that should be there, namely the legislation.

Under the guidance of the auditor's knowledge and judgement, the analytical tools learn how to perform this assessment and, using the algorithms developed, analyse the data first by means of commands such as filtering, formula-writing and relationship-building, and then deliver the results of the analysis to the auditor. While some of the results obtained at this stage are of audit nature, some are at the level of information that needs to be further developed to achieve audit evidence.

3.3.3. Decision-Making for Audit Opinion

The last stage in the data life cycle is decision making, which involves assessing the results achieved by the data processing in the light of a holistic perspective. As the type and amount of data included in the analysis process in the previous stages increases, so do the results informing users and the decisions to be taken on the basis of that information.

At the end of the audit process, an audit opinion shall be drawn up on the reliability and regularity of the financial statements of the audited entity. As this audit opinion is based on audit evidence, it is clear that the objective of the auditor is to obtain sufficient and appropriate audit evidence throughout the audit process. Although the information obtained at the end of the analysis provides audit evidence of certain audit practices, some may require further work. The extent to which the information gathered at this stage contributes to the audit evidence and the objective of the audit opinion depends on the assessment of the auditors in accordance with their professional judgement.

3.4. Implementation Examples

In order to adapt to changing technologies, the TCA supports the professional development of its staff through training programs. It attaches great importance to ensuring that staff maximise the benefits of activities carried out with information and communication technology tools. In addition, INTOSAI assessed that the training programs carried out by the TCA for technological adaptation could serve as examples of good practice at global level. Based on the information received from VERA and the research carried out, some examples of public bodies identified in the TCA reports are as follows:

Following the introduction of the computerized audit system in 2018, the first analysis of the big data on personnel expenditure in the public administration covered by the central government budget was carried out through IPFMIS.

The audit findings on personnel expenditure showed that standardization of the audit had been achieved, payments could be audited with significant time and labor savings, compliance could be measured on the basis of the results and recommendations were made to improve financial supervision (Turkish Court of Accounts, 2018).

According to the 2018 audit report on the General Directorate of Land Registry and Cadaster, the internal control environment of the administration was considered insufficient on the basis of the following audit findings: cadaster tenders not in line with the legal deadlines, child support paid to two different persons, and marriage support for employees whose spouses are civil servants (Turkish Court of Accounts, 2019).

According to the audit report on the Ministry of Family, Labor and Social Affairs for the year 2020, the amounts in the bank statement were significantly higher than the amounts in the accounts, as the accounting officers of the expenditure units did not check the bank accounts balances at regular intervals, the accounting directorates did not prepare the accounts and the statements relating to bank transfers were not sent regularly (Turkish Court of Accounts, 2019).

According to the audit report on the Ministry of Health for the year 2021, the payroll of the Ministry's staff covered by the Public Servants Act No. 657 were examined and it was found that incorrect payments were made because the information on which the family support and foreign language compensation payments was not up-to-date and was not followed properly (Turkish Court of Accounts, 2022).



Conclusion

It is clear that auditing has passed through different stages of digital maturity, in line with technological developments and auditing approaches, processes and techniques. In addition to saving time and labour, audits that take into account emerging technologies such as blockchains, artificial intelligence, the internet of things and big data analytics will yield high quality and efficient audit outputs. Examining the entire population covered in the audit scope – instead of examining a limited population through sampling, the level of assurance provided, as well as the confidence in audit evidence and reports will be increased, and improvements will be experienced quickly through early detection of errors and fraud. Audits conducted with a proactive approach to fostering institutional development will also help institutions to define future strategies and policies and to take solid action by assessing opportunities and threats based on concrete data.

In view of this, the TCA has begun to redesign its audit work and has introduced VERA, a system which was developed to integrate audit methodologies with big data and data analytics, for the use of auditors. VERA can process large amounts of data from different sources and in different formats according to different analysis scenarios, and by doing so, it enables errors and fraud to be detected early, risk assessment to be performed in a detailed manner, and audit evidence to be provided in a high quality and timely manner. Furthermore, it supports continuous auditing and reduces reliance on physical documents, thus contributing the goal of performing more effective, proactive and forward-looking audits.

In today's world, where the transformative impact of technological changes on the auditing field is felt and understood, it is essential that auditors acquire knowledge and skills of the technologies they will be using or auditing to produce high quality and reliable results. In this context, the key to success will be for auditors and supreme audit institutions to take the necessary steps to adapt to the digital age, internalise digital transformation and view it as a development opportunity.

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Paper 11: AI and Machine Learning in Public Sector Auditing: Insights from the Hellenic Court of Audit, a Jurisdictional SAI. – Hellenic Court of Audit



**Anna
Papapanagiotou**

Judge Counsellor

Hellenic Court of Audit



Charikleia Zachou

Appeal Judge

Hellenic Court of Audit

“ *Where is the wisdom we have lost in knowledge?
Where is the knowledge we have lost in information?*
T.S. Elliot in “Choruses from the Rock”

Abstract

Artificial Intelligence (AI) and Machine Learning (ML) have revolutionised numerous sectors, including public sector auditing, by offering unprecedented opportunities to modernise methodologies, enhance efficiency, and strengthen accountability. This article explores the transformative integration of AI and ML within the Hellenic Court of Audit (HCA), which is both the Supreme Audit Institution (SAI) and the Supreme Financial Court in Greece. It highlights the strategic adoption of these technologies to streamline processes such as document analysis, risk assessment, and fraud detection, while also supporting data-driven decision-making through advanced analytics.

Central to the HCA's innovation is the development of an Integrated Information System (IIS), designed to digitise audit and judicial workflows, facilitate interoperability with external systems, and integrate AI-powered capabilities. These include tools for predictive modelling, automated classification of procedural documents, and the detection of anomalies, enabling auditors and judges to execute their responsibilities with improved accuracy and efficiency.

Despite the vast potential of AI and ML, their implementation is not without challenges. The article addresses critical issues such as data bias, compliance with European and national regulatory standards, ethical dilemmas, and the technical and resource demands of integrating advanced technologies. It also emphasises the irreplaceable role of human judgement in navigating the complex social, economic, and ethical dimensions of audit and judicial work.

By leveraging international best practices, the HCA is developing a comprehensive AI strategy, investing in staff training, and fostering collaboration with peer institutions. These efforts underline the HCA's commitment to harnessing the benefits of AI and ML while upholding transparency, accountability, and public trust. This article contributes valuable insights into the evolving discourse on the role of AI in public sector auditing and its broader implications for governance and justice.

Keywords:

Artificial Intelligence (AI), Machine Learning (ML), public sector auditing, accountability, Supreme Audit Institution (SAI), Hellenic Court of Audit (HCA), risk assessment, fraud detection, predictive modelling, anomaly detection, ethical dilemmas, regulatory compliance, transparency, governance, public trust.

1. Introduction

Artificial Intelligence (AI) has become synonymous with technological advancement and is one of the most significant applications of the data-driven economy[1]. At its core, AI is defined[2] as “a technology that enables computers to perform tasks requiring intelligence when performed by humans”[3].

This technology comes with a promise to transform economies, boost growth, and address societal challenges, but it also carries significant potential for economic and societal disruption. Correlatively, the creation of a strong AI ecosystem through strategic investments is needed[4]. Undeniably, Artificial Intelligence (AI) and Machine Learning (ML) have emerged as transformative forces in various sectors, revolutionising processes and enhancing efficiency. More precisely in the field of justice, digital advancements facilitated by AI can be categorised into three key areas: a) Improving information accessibility: AI tools provide parties with information on judicial procedures and available options related thereto. They also provide support for the judicial system in general[5] through case management and automated classification systems,

b) Reshaping traditional methods of interpersonal communications: Videoconferencing and electronic messaging are now common in the judicial process, and c) Redefining judicial workflows: Judges rely on electronic[6] and legal databases[7]. In the future, AI may further enhance judicial efficiency by predicting case outcomes. Public sector auditing, a domain traditionally reliant on rigorous analysis and detailed oversight, is now poised to reap the benefits of these advanced technologies. For the Hellenic Court of Audit (HCA), which is both the Supreme Financial Court and the Supreme Audit Institution in Greece, the integration of AI and ML offers opportunities to modernise auditing methodologies, improve efficiency, and strengthen accountability. However, it also presents challenges, particularly in ethics and accountability, legal and regulatory barriers, as well as technical and resource limitations.

2. Opportunities for the Hellenic Court of Audit (HCA). AI inherently has the potential to transform public sector auditing by automating time-consuming tasks and analysing complex datasets with unparalleled speed and precision. These capabilities are particularly valuable for: a) Document analysis: Natural language processing (NLP) can assist in reviewing extensive documents, extracting critical information, and highlighting inconsistencies[8], b) Risk assessment[9]: AI systems can rapidly identify anomalies, patterns, and trends, enabling auditors to focus on high-risk areas, and c) Fraud detection[10]: AI algorithms can flag suspicious transactions or activities, reducing the likelihood of undetected fraud.

[1] JTC Resource Bulletin Introduction to AI to Courts, Version 1.0 Adopted 27 March 2020, p.1.

[2] The exact definition of AI has been the subject of numerous discussions.

[3] Mitrou L., Tassis S., Kosti I., Vorras A., Karakatzounis V., Can the algorithm be moral, fair, transparent, able to judge and administer? (University Publications of Crete, Heraklion 2023, p. 15). For the definition of ‘AI system’ see Article 3(1) of the Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence and amending Regulations (EC) No 300/2008, (EU) No 167/2013, (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1139 and (EU) 2019/2144 and Directives 2014/90/EU, (EU) 2016/797 and (EU) 2020/1828 (Artificial Intelligence Act) (Text with EEA relevance) PE/24/2024/REV/1 OJ L, 2024/1689, 12.7.2024, ELI: <http://data.europa.eu/eli/reg/2024/1689/oj>. This Regulation is the first-ever legal framework on AI, which addresses the risks of AI and positions Europe to play a leading role globally.

[4] European Court of Auditors Special Report 8/2024 EU Artificial intelligence ambition- Stronger governance and increased, more focused investment essential going forward available at <https://www.eca.europa.eu/en/publications?ref=SR-2024-08>

[5] This is the USA “e-Discovery” system which, through machine learning, extracts the most relevant parts of the file documents, on the basis of a parties’ agreement on the search terms and coding used, certified by the Judge.

[6] For example, in Estonia, in 2005, the so called “e-file system” was developed, consisting of an electronic platform with safeguards, to which citizens enter and register their case. The data are shared among the competent services and the documents are processed by the Court, which uses the platform for the relevant notifications. See Numa A., Artificial Intelligence as the new reality of e-justice, *Artificial intelligence as the new reality of e-justice — e-Estonia (e-estonia.com)*, Niieler E., Can AI be a Fair Judge in Court? Estonia Thinks So, *Wired Magazine*, 25.03.2019, <https://www.wired.com/story/can-ai-be-fair-judge-court-estonia-thinks-so/>

[7] Contini F., *Artificial Intelligence and the Transformation of Humans, law and Technology, Interaction in Judicial Proceedings, Law, Technology and Humans*, Vol 2 (1) 2020, p. 2.

[8] Mahadevkar, S.V., Patil, S., Kotecha, K. et al. Exploring AI-driven approaches for unstructured document analysis and future horizons, *J Big Data* 11, pp 92 (2024). <https://doi.org/10.1186/s40537-024-00948-z>

[9] Onwubuariri E., Adelakun B., Olaiya P-O, Ziorklui J. (2024), AI-Driven risk assessment: Revolutionizing audit planning and execution, *Finance & Accounting Research Journal* 6, pp 1069-1090. https://www.researchgate.net/publication/381466171_AI-driven_risk_assessment_Revolutionizing_audit_planning_and_execution

[10] Artificial Intelligence in the Public Sector: Summary Note (English). Equitable Growth, Finance and Institutions Note Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/746721616045333426/Artificial-Intelligence-in-the-Public-Sector-Summary-Note>

Moreover, as the adoption of AI aligns with global trends in public administration, where digital transformation has become essential, AI tools can be used to monitor the reliability of auditees' information systems, develop predictive models for financial and operational risks, and automate routine tasks, so as to enhance the overall effectiveness of the HCA audit procedures[11].

Finally, AI-powered analytics, by offering data-driven insights, can contribute to identifying patterns in financial and administrative processes, as well as linking findings to the relevant legal framework, with the view to strengthening decision-making.

In the light of the above, the HCA can leverage AI wisely to enhance the efficiency and accuracy of public audit, modernise auditing practices and support strategic decision-making.

3. Innovations implemented by a SAI with jurisdictional competences

The integration of AI into judicial systems is a growing area of interest, particularly regarding the balance between automation and human oversight. Courts worldwide are increasingly considering AI as a tool for improving efficiency, accuracy, and accessibility.

It is acknowledged that the primary argument in favour of the AI adoption in courts is its ability to support legal professionals in their tasks rather than replace them. AI can assist in legal research by rapidly analysing vast amounts of case law, precedents, and statutes to provide relevant legal insights including the understanding of complex legal jargon and procedural steps. As already mentioned, it can also be used for case management, automating document processing, and organising case files in a structured manner[12]. Already nearly a decade ago, the HCA developed an early form of AI to address the backlog of approximately 30,000 lawsuits filed by military pensioners, claiming compensation for delayed pension adjustment.

As this kind of claim was held, in principle, legitimate by decision of the Court's Plenary, the primary challenge became the determination of compensation in each case. This calculation required intricate mathematical computations, contingent upon multiple legal and factual parameters. In response to this challenge and to address the prolonged delays from within, a specialised software application was developed in collaboration with the Court's IT department. The application enabled judges to input specific data points extracted from case files into designated fields, after which the software automatically calculated the exact compensation owed, displaying the final amount in a designated output section.

To ensure compliance with the principle of user responsibility, rigorous testing and verification were conducted before the software application was implemented. Judges retained the ability to verify calculations on a sample basis at any time, ensuring both procedural integrity and legal certainty. The introduction of this software significantly accelerated the process by reducing the backlog of cases while enhancing the accuracy and consistency of judicial calculations. This initiative exemplified the potential of technology in judicial proceedings, demonstrating how digital solutions can improve efficiency and fairness in complex legal disputes.

Subsequently, the COVID-19 pandemic highlighted the resilience of justice systems and the urgency of digitalisation. Amendments across legal frameworks accelerated the adoption of digital and AI-driven solutions, as exemplified by Greece's judicial reforms. In this context, recognising the importance of integrating digital tools into the judicial sector, Greece has embarked on its most extensive programme of digital reforms to date, funded by national resources, the EU, and the Recovery and Resilience Facility (RRF). This initiative aligns with the national digital strategy outlined by Law No 4727/2020 and the Digital Transformation Bible[13].

[11] Olubusola Odeyemi, Kehinde Feranmi Awonuga, Noluthando Zamanjomane Mhlongo, Ndubuisi Leonard Ndubuisi, Funmilola Olatundun Olatoye and Andrew Ifesinachi Daraojimba, *The role of AI in transforming auditing practices: A global perspective review*, DOI link: <https://doi.org/10.30574/wjarr.2024.21.2.0460> Published Online: 2023-02-28

[12] Rabihah Butler, *The role of humans: Integrating human judgment in court systems in the AI era*, available at *The role of humans: Integrating human judgment in court systems in the AI era - Thomson Reuters Institute*.

[13] <https://digitalstrategy.gov.gr/en/>

The legal background of this transformative process lies in the HCA Organic Law No 4820/2021, which, among others, amended the Court's Code of procedure. Under the new legal provisions judicial decisions, reports, summonses, and other court documents are, in principle, electronically notified to the parties' email addresses^[14]. Such notification shall be deemed complete once the addressee returns the electronic acknowledgement of receipt to the sender. If the electronic acknowledgement is not returned within 5 days, it shall be presumed, for all intents and purposes, that the notification occurred 10 days following the date of transmission. Furthermore, special provision is made^[15] for the mandatory electronic filing of case file documents, provided that they are authenticated with a qualified electronic signature, while all associated court fees are paid electronically. Remote access to electronic case file is granted to the parties and the State Prosecutor General at the HCA through secure connection and credentials^[16]. In the same vein, provision is made for participation in court hearings through remote connection technologies, such as telematics applications^[17]. Moreover, a specific provision was introduced^[18] for the development of ML software related to procedural documents with a view to their thematic classification and the identification of relevant case law and legislation^[19], so as to form the legal reasoning of the final judgment. At a later stage, the software will be capable of identifying all the critical data so as to form the factual basis of the judgment. To facilitate these capabilities, a standardised technical format for procedural documents' formatting will be adopted by the Court's Plenum, while automatic judgement annonymity is supported.

Correlatively, within the aforementioned HCA Integrated Information System (IIS) an interoperability software is specifically developed to e judicial efficiency by enabling direct access to the databases of public bodies, such as the National Organisation for Social Security. Such seamless access to official records is of critical importance, given that in administrative litigation the subject-matter of the proceedings is not delimited by the parties, but the judge is tasked with examining the case on its merits beyond the allegations put forward by the parties.

In this context, the impact of interoperability is particularly evident in pension disputes, where administrative authorities frequently fail to submit complete pension files to the Court, despite their legal obligation to do so, causing significant delays and procedural complications. Thanks to the abovementioned interoperability between the HCA and the competent bodies' systems, the case file is completed with the relevant administrative acts and Court's proceedings are expedited.

In addition to pension-related disputes, the modernisation of the HCA's Integrated Information System includes the development of an interface that will connect the Court system with those of civil, criminal, and administrative courts, enabling the extraction of case law data and access to information on related cases. A particularly pressing necessity arises in financial imputation cases, where the same underlying acts may have already been examined by criminal courts. Direct access to developments in criminal proceedings is essential, as their outcomes may influence or even bind the HCA, particularly with respect to the presumption of innocence. Further advancing digital transformation efforts, plans are underway to develop a virtual AI assistant judge in the form of a chatbot. This assistant will be trained on the HCA's case law database and, utilising advanced machine learning techniques, will process the case-related data input by the judge, retrieve relevant judicial precedents through semantic decision analysis, and ultimately propose a draft decision.

^[14] Law No 4700/2020 art. 340, as amended by Law No 4820/2021 art. 170.

^[15] Ibid art. 342 of the same Law, as replaced by Law No 4820/2021 art. 172.

^[16] Ibid art. 343 par. 1, as replaced by Law No 4820/2021 art. 173.

^[17] Ibid art. 343 par. 2 as inserted by Law No 4963/2022 art. 48.

^[18] Ibid art. 346, as replaced by Law No 4820/2021 art. 176.

^[19] Page 122 of the explanatory memorandum to Law No 4820/2021, according to which the established AI tools will quickly and more easily categorise cases, identify applicable laws and precedents, and assist judges by integrating relevant materials into case files.

Unlike conventional case law search engines, which return results based on keyword matches without contextual evaluation, the system to be designed will generate a structured and legally coherent draft that directly corresponds to the data provided by the user.

In addition to the above, which primarily concern the exercise of the HCA's jurisdictional powers, reform initiatives have been launched regarding audit procedures. These include legal provisions for equal digital technology both for checking the reliability of the auditees' information systems and for carrying out audits by the HCA, by developing or procuring AI software capable of detecting problematic accounts, transactions, or actions[20]. For this purpose, new audit procedures, including AI-based technologies, are introduced, staff upgrades, including the creation of specialised posts, are established, and the possibility to engage external contractors, when necessary, is provided for[21].

Undeniably, however, in the field of audit, the big step taken is the introduction of the aforementioned new Integrated Information System of the HCA. The system's key features include: a) Automated case management: Centralised monitoring of audit –as well as judicial– cases, b) Digital workflows: Full digitalisation of audit, administrative, and judicial procedures, c) Data insights: Tools for generating statistical reports and specialised analytics, and d) Videoconferencing: Advanced support for remote hearings and deliberations. In brief, the new system is designed to support the various types of audits conducted by the HCA, in accordance with its constitutional mandate as specified by law, by monitoring, managing, and documenting audit cases. The system aims to facilitate the standardisation and organisation of audits, record the procedures for each audit type, track progress, promptly evaluate audit results, and oversee the timely and accurate execution of the HCA Annual Audit Programme.

Through interoperability with external judicial and administrative information systems, it will enable seamless digital submission and review of documents and accounts, while secure access will be granted to authorised parties. Additionally, it will allow auditors to use standardised digital tools, such as questionnaires, planning memorandum, audit programmes, reports, and manuals, alongside technical tools for data analysis. The system will also ensure the supervision and quality assessment of audits at every stage, allow the extraction of specific reports and indicators, and manage digital audit files and a centralised digital audit data repository.

In detail, the new system, insofar as it pertains to audits, offers a structured framework for standardising and organising audit procedures, ensuring the meticulous documentation of methodologies, and generating dynamic reports that facilitate the extraction of critical information from audit files. By enabling real-time monitoring of audit progress and the immediate evaluation of results, the system significantly strengthens oversight and accountability.

In addition to procedural standardisation, the system supports the design, implementation, and supervision of Multiannual and Annual Audit Programs. It also incorporates advanced financial analysis techniques, enabling the development of key performance indicators to assess the efficiency of audited entities, as well as the effectiveness of the programs and initiatives they implement. A fundamental feature of this system is its capacity to retrieve digital data, documents, and financial records from audited entities through interoperability mechanisms. These records are securely stored in temporary databases, analysed, and subsequently deleted upon completion of the audit process, ensuring both data protection and compliance with digital audit protocols.

[20] Law No 4820/2021 art. 89 (3).

[21] Law No 4820/2021 art. 16 (2) and page 92 of the explanatory memorandum.

The system further streamlines audit workflows by equipping auditors with standardized digital tools, including questionnaires, planning memoranda, audit programs, reports, and manuals. The integration of Audit Data Analytics (ADA) techniques enhances the accuracy and depth of audits, while continuous monitoring of internal control systems within audited entities strengthens compliance and governance. Additionally, dedicated mechanisms for evaluating, recording, tracking, and overseeing the quality of audits contribute to a more structured and effective audit process.

To support comprehensive audit management, the system enables the generation and dissemination of specialized reports and audit monitoring indicators while maintaining a secure digital repository for audit-related documentation and resources. Furthermore, it incorporates structured mechanisms for managing complaints, thereby reinforcing accountability and responsiveness within the audit framework.

It is understood from the above that the use of digital and AI means, in both judicial and audit fields, is, and will prove to be, a valuable administrative support for the HCA and its environment, by ensuring transparency, efficiency, reduction of bureaucratic procedures, and faster handling of judicial and audit cases as machines work indefinitely^[22]. The potential that the use of AI offers to the HCA, through techniques of natural language processing, machine learning, and neural networks, ensures effectiveness, accountability and equality, and, thus, contributes to the successful fulfilment of its institutional role.

[22] Sourdin T., *supra*, p. 1120.

4. Challenges in AI integration and ML implementation at the HCA

While the benefits are clear, implementing AI and ML in public sector auditing comes with significant challenges. It should not be forgotten that the use of AI poses serious risks, related to fundamental rights, discrimination, quality and security, transparency, impartiality and fairness, and uncontrolled use^[23]. Undeniably, the success of AI in auditing relies heavily on the quality and integrity of the data it processes, as their lack can lead to Bias and discrimination^[24] and raise Accountability Issues^{[25], [26], [27]}.

[24] Cf. European Commission for the Efficiency of Justice (CEPEJ), *European Charter of Ethics on the use of artificial intelligence in judicial systems and their environment*, 3-4 December 2018, available at <https://www.coe.int/en/web/cepej/cepej-european-ethical-charter-on-the-use-of-artificial-intelligence-ai-in-judicial-systems-and-their-environment>.

[25] Varona, D., Suárez, J. (2022) *Discrimination, Bias, Fairness, and Trustworthy AI* Applied Sciences

[26] Sacramed, M., T. (2024) *Reviewing the Philippines Legal Landscape of Artificial Intelligence (AI) in Business: Addressing Bias, Explainability, and Algorithmic Accountability*, International Journal of Research and Innovation in Social Science

[27] Islam, M. (2024) *Ethical Considerations in AI: Navigating the Complexities of Bias and Accountability*, Journal of Artificial Intelligence General science (JAIGS) ISSN:3006-4023

[28] Kim, Dae-Eun & Lee, Healyim & Lee, Sue-Kyeong & Eom, Seok-Jin. (2024). Conditions for AI systems adoption in public sector: From an accountability perspective. 42-51, available at <https://doi.org/10.1145/3657054.3657060>



HCA can thoroughly address these issues, by correspondingly eliminating any algorithms trained on biased datasets and determining responsibility for errors or potentially unethical decisions. Correlative, to guarantee transparency and thereby avoid the commonly referred to as the "black box" problem, clear explanations for the outputs of AI models must be available[29].

As to the challenge of Legal and Regulatory barriers, the HCA must ensure continuous compliance with stringent European and national data protection[30] and AI ethics laws[31], to ultimately safeguard the responsible use of the newly introduced digital tools.[32]

Furthermore, it is common knowledge that implementing AI technologies requires significant investments in infrastructure[33], skilled personnel, and ongoing maintenance. To address the challenge of Technical and Resource limitations, the HCA must bridge gaps in expertise and eventual future budget constraints, potentially through partnerships with academic and other public entities.

Last but not least, another major concern is the potential for AI to be given too much autonomy in judicial decision-making. AI can augment but not replace human judgement. The opposite would lead to a dehumanised legal process that lacks the empathy and discretionary judgement necessary for fair rulings. Judicial and audit reasoning often require contextual understanding involving not only economic but also social considerations that AI cannot replicate.

5. Identifying and following best practices

The HCA can draw valuable insights from international practices given that Supreme Audit Institutions (SAIs) worldwide are exploring AI-driven solutions to improve the efficiency and accuracy of audits.

For instance, Norway's Public Sector AI Strategy emphasises a coordinated, ethical approach to AI adoption, focusing on transparency and accountability in public expenditure to improve financial oversight and detect fraud [33]. The European Court of Auditors (ECA) has integrated AI to enhance audit processes and develop methodologies for auditing AI systems themselves[34]. The ECA's focus on training, inter-institutional collaboration, and ethical AI use can serve as a blueprint for the HCA for realising its vision in the areas of justice and audit. Taking advantage of established good practices and experiences, such as the above-mentioned ones, and in order to enhance the integration of AI and ML into its auditing framework, the HCA should first and foremost consider the following steps[35]: a) Develop a clear and comprehensive AI Strategy with a view to enhancing public trust in the HCA's function, b) Invest in ongoing specialized training and capacity building by offering interested and qualified staff the opportunities to upskill, c) Foster collaboration with peer Supreme Audit Institutions (SAIs) and academia to share resources, knowledge, and best practices, and d) Enhance cybersecurity by strengthening defences against cyber threats to protect sensitive data and, thus, safeguard data integrity or security.[36]

[29] Cf *STATE of Wisconsin v. Eric L. LOOMIS*, No. 2015AP157–CR. Decided: July 13, 2016, available at <https://caselaw.findlaw.com/wi-supreme-court/1742124.html>

[30] Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (Text with EEA relevance), OJ L 119, 4.5.2016, p. 1–88 <https://eur-lex.europa.eu/eli/reg/2016/679/oj>

[31] See Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 laying down harmonised rules on artificial intelligence, *supra* footnote 3. For more information see Kouroupis, K. (2023) *The AI Act in light of the EU Digital Agenda: A critical approach* Journal of Data Protection & Privacy, Pehlivan, C., N. (2024) *The EU Artificial Intelligence (AI) Act: An Introduction* Global Privacy Law Review.

[32] Ortega, E., Tran, M., Bandeen, G. (2023) *AI Digital Tool Product Lifecycle Governance Framework through Ethics and Compliance by Design*, 2023 IEEE Conference on Artificial Intelligence (CAI), 353–356

[5] Onwubuariri, Ebere & Adelakun, Beatrice & Olaiya, Omolara & Ziorkluj, Joseph. (2024), *supra*, p. 364

[33] OECD (2024), *Artificial intelligence in the public sector*, in *The Digital Transformation of Norway's Public Sector*, OECD Publishing, Paris, available at <https://doi.org/10.1787/869f83c1-en>

[34] European Court of Auditors, *Artificial Intelligence initial strategy and deployment roadmap – 2024–2025*, Publications Office of the European Union, 2024, available at <https://data.europa.eu/doi/10.2865/317443>

[35] Dr. Sutthi Suntharunurak, *Leveraging AI in Performance Auditing: A Feasibility Study for the State Audit Office of Thailand*, available at <https://intosajournal.org/journal-entry/leveraging-ai-in-performance-auditing-a-feasibility-study-for-the-state-audit-office-of-thailand/>

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6. Conclusion

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For the HCA, embracing AI and ML represents an opportunity to modernize its practices and reinforce its role in ensuring proper administration of justice, accountability, and good governance. By addressing the challenges thoughtfully and learning from international best practices and experiences, the HCA can optimize its work. The digital, under human oversight, transformation of judicial and audit processes represents a pivotal advancement in enhancing efficiency, transparency, and public trust. This modernization will undoubtedly consolidate the institutional role of the HCA, in both fields of justice and audit, while fostering greater responsiveness to the State's and citizens' needs.

Paper 12: Are institutions ready for digital transformation? Auditing challenges in the "big data" era^[1] – Court of Accounts of Romania

[1] ORCID 0000-0002-3138-871X



Sebastian Mezei

External public auditor

Court of Accounts of
Romania

Abstract

Today's world is marked by profound changes, in which digital transformation and complex regulations represent significant challenges for institutions, and their ability to adapt quickly and efficiently to new requirements ensures that the resilience of their operations is maintained, while shaping their operating framework.

Constantly evolving legal requirements and regulations require the implementation of effective compliance monitoring systems, in order to identify them and adapt to new requirements, the lack of uniform and predictable standards being a continuous challenge.

According to the European Commission's "2030 Digital Decade" report (2023), at the European Union level, targets have been set for the digitization of infrastructure, public services, respectively the skills and digital transformations of the business environment. Thus, it is expected that, by 2030, 5G networks will provide 100% coverage, public services for citizens, the business environment and medical records will be available in digital format at 100%, and 80% of the population will have basic digital skills.

But what do all these transformations mean? The exponential growth in the volume of data transmitted and stored in electronic format represents "Big Data", in which huge and complex volumes of data are generated and stored continuously, and their management and analysis exceeds the capabilities of traditional applications and equipment.

The major challenges for institutions are represented by storing, analyzing, processing and most importantly ensuring cybersecurity and data protection. The proactive approach by institutions, through the implementation of security controls, periodic cyber risk assessment and continuous training of staff, can reduce risks in the field.

Digital transformation has a direct impact on audit processes, adapting and making standards more flexible is necessary to respond to changes and new realities, and the adoption of advanced and automated data analysis technologies, including through artificial intelligence, can make a difference in the field.

Keywords:

digital transformation; cybersecurity; regulation and compliance

JEL classification:

D83; G34; K2; L86; M15; O33

Introduction

The future is digital and mobile, and we can see this in almost all areas, the digitization of entities and activities being already defined as modern standards around the world. Continuous evolution, driven by increasingly rapid technological advances, have transformed the way we interact and the way we carry out our work or daily activities in our personal lives. The transition to digital and mobile solutions is taking place continuously and has become essential for increasing the efficiency, competitiveness and accessibility of any entity that wants to remain relevant.

We can talk about digitalization as an irreversible process, being a necessity for entities that want better resource management, process optimisation and high-performance management.

The advanced technological evolution ensures the development of digitalization, respectively the increase in the level of mobility, the expansion of 5G networks and the creation of smart mobile devices with a high level of connectivity makes them become true management centres for the management of professional or personal activity.

It is observed that digitalization has a substantial impact on all areas of life, some of which were accelerated by the SARS-CoV-2 pandemic period, when advanced communication applications were developed. E-learning platforms and mobile applications have enabled students to continue their studies, with some becoming easy-to-access online learning tools with multiple advantages. In the health system, the development of dedicated telemedicine solutions was accelerated, which allowed the assessment of patients' health status in real time, without the need, in certain cases, to travel to medical units. Another area where digitalization has had a major impact is that of the financial sector, with mobile payments and blockchain technology completely transforming the way transactions take place, banks provide customers with advanced and affordable solutions that ensure fast and secure online transactions.

Society and the labour market are changing as a result of digitalization and the mobility it offers, jobs are becoming more flexible, and teleworking is used in many industries, being supported by cloud platforms, videoconferencing applications or artificial intelligence.

At the level of the public sector, governments around the world are making sustained efforts to adapt to the new realities, with e-government solutions being implemented, through digital platforms, which provide citizens with easy access to administrative services and improve the interaction between citizens and institutions. It is found that the pace of institutional adaptation differs significantly from one country to another, and the challenges for institutions are related to the legislative framework, the existing infrastructure or the digital skills of employees. Digital transformation, at the institutional level, includes elements related to the automation of public services by creating accessible interfaces for citizens, which reduce bureaucracy, which have implications regarding data security, employee training, respectively the adaptability and flexibility of digital solutions to cope with changes in the digital environment.

It should not be ignored that there is a certain resistance in some institutions regarding digitalization, caused by the reluctance to change traditional systems, the level of training of employees or the lack of investment in the field.

The growth of digital services created through digitization generates challenges, not only in terms of interaction and accessibility, but also in terms of the exponential multiplication of the amount of data in electronic format, being able to speak of "Big Data" in more and more fields, health, industry, environment, transport, public sector, being just a few of them.

On the other hand, there are ongoing risks regarding data security and protection, cyber threats being on the rise in all sectors, the lack of procedures and investments necessary for data protection leading to the increase of these risks.

In this highly dynamic environment, audit processes and standards must be designed in such a way as to ensure the necessary flexibility for institutional adaptation to new realities, respectively to be pro-active, and the solutions adopted to face the new challenges.

It is more than obvious that when we talk about "Big Data", the volume of data and its complexity make it impossible to analyse and process it without the help of equipment with increasing computing power and specialised solutions that include advanced applications, including artificial intelligence. The higher the volume of data and its complexity, the more inefficient the processing and analysis of data becomes without advanced technology, in the more or less near future, quantum computers and artificial intelligence are emerging as possible adopted solutions.

Literature

Continuous regulatory changes and technological progress have profoundly transformed the operational environment of public institutions, with the strategies adopted by public administrations to remain compliant with evolving legal requirements, protect data and capitalise on digital transformation being different.

Recent studies emphasise that public institutions need to develop proactive strategies to comply with ever-changing regulations. According to Meijer & Grimmelikhuijsen (2021), public administrations need to adopt flexible policies to meet regulatory requirements and ensure the transparency and efficiency of government processes. The literature also highlights that rapid adaptation to new regulations is facilitated by the implementation of robust digital governance and automated compliance systems (OECD, 2022).

The study conducted by Roberts and Allen (2022), shows that public institutions that develop flexible compliance mechanisms and quickly adapt their IT infrastructure to legislative requirements are more resilient to external changes. At the same time, according to Chen and Williams (2023), regulatory processes must be integrated into government strategies to prevent administrative bottlenecks and ensure continuity of public service delivery.

According to the European Commission's "Digital Decade 2030" report (2023), targets have been set at the European Union level for the digitisation of public infrastructure, public services and digital transformations in administration. Thus, it is expected that, by 2030, 5G networks will ensure 100% coverage, public services and access to citizens' health records will be fully available in digital format, and 80% of the population will have basic digital skills.

Against the backdrop of increasing cybersecurity risks, the literature highlights the importance of adopting an adaptable security framework in the public sector. The ISO/IEC 27001 standards and the European Union's NIS2 directives (2022) emphasise the need to implement data protection strategies to prevent cyber attacks on government critical infrastructures. According to the study by Brown and Williams (2022), administrations that invest in cybersecurity not only reduce the risks of attacks, but also improve citizens' trust in digital services. Moreover, regulations such as GDPR (2018) have led public institutions to redefine their data management processes and compliance mechanisms (European Data Protection Board, 2021).

Research by Singh and Patel (2023) shows that investments in advanced cybersecurity technologies, such as data encryption and biometric authentication, have become essential for the protection of critical digital infrastructures of public administrations. Also, according to Garcia and Huang (2022), public institutions that apply pro-active defence strategies against cyberattacks significantly reduce their exposure to operational and administrative risks.

The digital transformation has significantly influenced public administration processes, including auditing and management of public resources. According to the OECD report (2021), the use of artificial intelligence and advanced data analysis has allowed public institutions to identify risks and irregularities with greater accuracy. Recent literature discusses the adoption of blockchain technologies in administration, facilitating transaction traceability and reducing fraud risks in the public sector (Deloitte, 2022). According to Martin and Lopez (2023), emerging technologies in government auditing reduce administrative errors, but also raise ethical challenges regarding algorithmic transparency.

Jones and Richardson (2023) point out that the digitization of audit in public administration not only improves the efficiency of processes, but also fundamentally changes the skills needed by public officials, requiring advanced training in the technological field. In addition, according to Carter and Nguyen (2023), the integration of artificial intelligence in public administration has led to a significant reduction in costs and an increased capacity for budgetary risk analysis.

Regarding external public audit, the study by Hernandez and Schmidt (2023) highlights that the use of advanced digital tools allows auditors to analyze large data sets in real time, thus improving the identification of deviations and financial risks. According to Williams and Zhao (2022), the implementation of audit systems based on artificial intelligence and automation increases the ability to detect errors and ensures greater transparency in the verification of public spending.

In addition, according to the study by Fischer and Novak (2023), the use of continuous audit technologies based on data analysis contributes to streamlining financial controls and allows for a faster reaction to possible irregularities. Also, according to Silva and Thompson (2023), digitized auditing improves the compliance of public institutions with current regulations and reduces vulnerabilities related to human error or fraud.

The exponential increase in the volume of data transmitted and stored in electronic format in public administration represents the "Big Data" phenomenon, characterized by the continuous generation of huge and complex volumes of data. They exceed the ability of traditional applications and equipment to manage and analyze them. According to Zhang, Kim and Patel (2023), the success of a public institution in the use of Big Data depends on the implementation of advanced data analysis solutions, such as artificial intelligence and machine learning, which allow the extraction of valuable information for strategic decision-making in the administration.

According to research by Edwards and Thompson (2023), public administrations that use Big Data for predictive analytics and operational optimization experience a significant increase in efficiency and transparency. Also, according to Fernandez and Silva (2023), the application of Big Data in public governance contributes to improving fraud detection and the management of public resources.

On the other hand, it should be noted that digitalization, along with increased transparency, can create problems related to security, privacy and excessive surveillance (Bannister, 2020) and creates difficulties for institutions in the transition from traditional systems, including high costs and resistance to change (Dunleavy, 2021), with situations where digitization efforts have been a failure, the results being unsatisfactory (Heeks, 2022).

Another very important aspect is related to the difficulties regarding the interconnection of systems, data interoperability and the impact on bureaucratic structures in institutions (Mergel, 2022), the lack of digital skills being major barriers to the adoption of digital technologies in public institutions (Janssen, 2021), Wirtz and Weyerer (2020) even discussing the lack of equity in accessing digital services.

In the relatively near future, we will be able to witness the development of quantum computers, which, thanks to their extraordinary computing power and advanced quantum algorithms, will be able to perform analyses and simulations on complex databases and will be able to provide real-time results or advanced forecasts useful in establishing the strategies to be followed (Mezei, 2024).

The literature indicates that the success of public institutions in navigating regulatory and technological changes depends on their ability to adopt an integrated approach, including regulatory compliance, cyberprotection, digital transformation and the application of international standards.

Research methodology

This study conducts qualitative and quantitative research, based on the review of scientific literature and case studies, consulting academic papers, reports and electronic databases of international organizations (e.g. OECD, European Commission) and relevant research articles on regulatory compliance, cybersecurity, digitization of public administration and external public audit (analyzing the "Web of Science" (Clarivate) and Google Scholar databases and using individual search terms "digital transformation, e-governance, big data, data analytics in external public auditing", or combinations of them. The comparative method was also used by analyzing the perspectives of different authors on the digitization of public institutions and the impact of technological transformation on administrative processes.

By analysing public regulations and policies, international directives and standards such as GDPR, NIS2 and the "2030 Digital Decade" strategy were highlighted, this approach allowing a broad and documented understanding of how public institutions navigate technological and regulatory changes, respectively their impact on audit processes.

The findings of this research show that public institutions need to adopt flexible policies and adaptable mechanisms to cope with regulatory and technological changes, with digitization and automation of processes being essential for maintaining transparency and efficiency. At the same time, with the increase in digitalization, it is necessary to implement advanced data protection solutions by implementing international standards.

Analysing the impact of digitalization on audit processes, improvements are expected in terms of the ability to analyse risks or detect financial irregularities, and the use of Big Data and artificial intelligence allows real-time monitoring and increased transparency in the management of public funds.



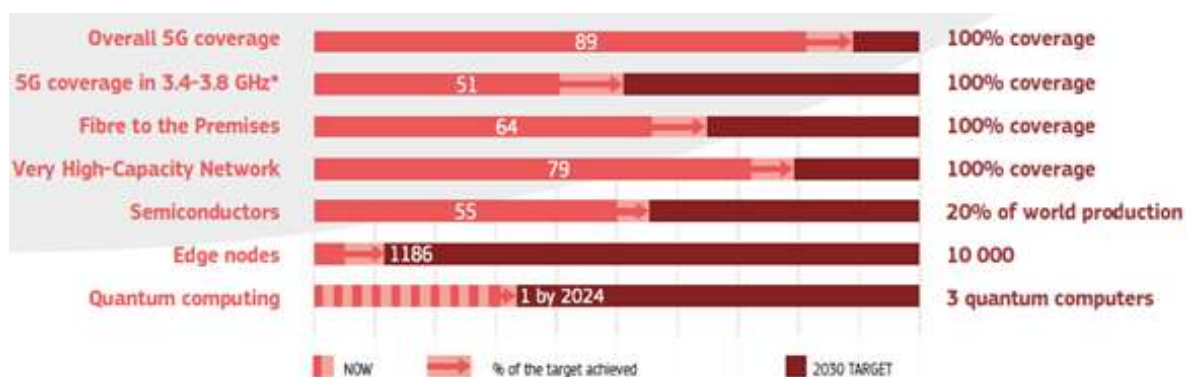
Resilience of public institutions to digital and regulatory change

Given the evolution of digital technologies, public institutions are obliged to adapt to new technological and regulatory requirements, which is a necessity for ensuring stability, efficiency and transparency in public administration. Regulations on the digitalisation of public services, data protection or cybersecurity are constantly evolving, and public institutions need to develop flexible mechanisms that allow them to quickly adapt to new requirements, without affecting the work carried out. A relevant example is the implementation of the General Data Protection Regulation (GDPR) in the European Union, when many public institutions encountered difficulties in applying the new data protection requirements due to outdated IT infrastructure and the lack of clear compliance procedures.

It is important for public institutions to adapt as easily as possible to regulatory, legislative and technological changes, so that their activity is not deficient and, at the same time, can offer citizens services adapted to the new requirements.

At the European Union level, targets have been set for 2030, known as the "Digital Decade of Europe", which aim for 100% 5G coverage in the European Union, with 75% of EU companies adopting technologies such as cloud computing, artificial intelligence and big data, respectively the operationalisation of three quantum computers (Figure 1).

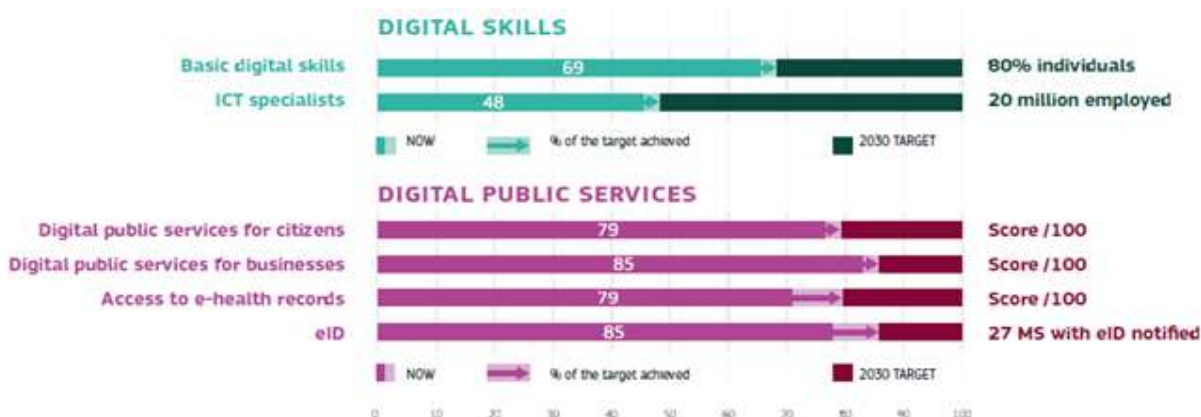
Figure 1. Europe's 'Digital Decade' targets for 2030



Source: Report on the State of the Digital Decade 2024, European Commission

It is also expected that, by 2030, the number of information and communications technology (ICT) specialists will reach 20 million, public services for citizens and businesses will be 100% digitalized, and health records will be digitalized and accessible to all citizens through e-health platforms (Figure 2).

Figure 2. Europe's 'Digital Decade' targets for 2030

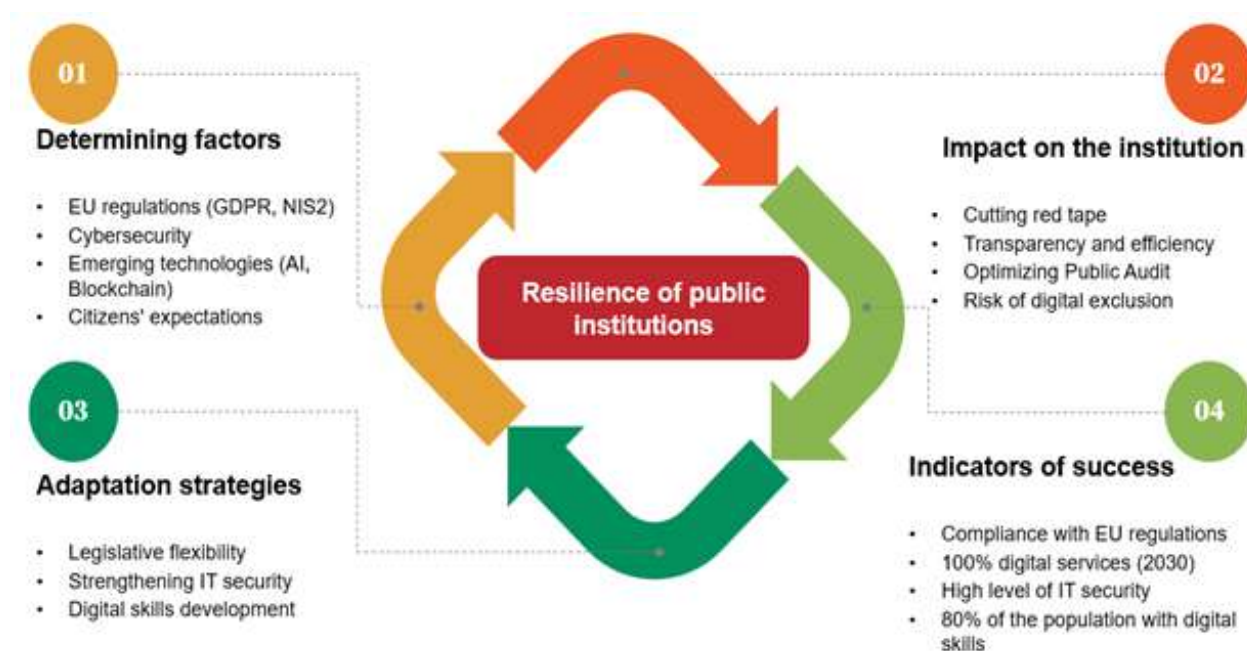


Source: Report on the State of the Digital Decade 2024, European Commission

A resilient institution must integrate regulations into its internal processes, ensuring both the protection of citizens' data and the continuity of administrative activities; International cybersecurity directives and standards impose strict requirements on digital risk management, with institutions that fail to adapt their security infrastructure and strategies risking severe penalties and operational vulnerabilities.

The digital transformation of public administration involves more than the adoption of new technologies, it requires a profound restructuring of processes to ensure the efficiency and accessibility of public services, taking into account a series of important elements related to determining factors, the impact on the institution, adaptation strategies, respectively the indicators that measure the implementation of processes (Figure 3).

Figure 3. Resilience of public institutions



Source: Author processing

Within public institutions, several main directions regarding digitization can be outlined: (i) automation of administrative processes, which lead to reducing errors and increasing the speed of processing citizens' requests, (ii) integrating artificial intelligence into the data analysis process for decision-making, (iii) interoperability of databases to facilitate data exchange between institutions. A successful example is the implementation of the e-government system in Estonia, where almost all public services are available online, which has led to a significant reduction in bureaucracy and increased citizen satisfaction.

The digitization of institutions also comes with a series of challenges related to the fragmentation of the IT infrastructure, the resistance to change on the part of employees and the investments necessary to ensure cybersecurity.

Increasingly sophisticated cyberattacks require the implementation of advanced security strategies to protect databases from ransomware attacks or leaks of confidential data, such as: (i) data encryption to prevent unauthorised access, (ii) multi-factor authentication (2FA) to protect accounts, (iii) constant monitoring and analysis of threats, including through the use of artificial intelligence, respectively blocking cyber threats before they affect the digital infrastructure.

Relevant examples of the effects of ransomware attacks are those on health systems in Ireland (2021), which blocked access to essential medical services for several weeks, or in Romania (2024), in which 25 hospitals were attacked, with more than 100 health service providers disconnected from the internet. With regard to cybersecurity, at the level of the European Union, Directive (EU) 1148/2016 was adopted, which establishes a series of measures to ensure a high common level of security of networks and information systems in the Union, applicable to public administrations identified as operators of essential services, but Member States are responsible for ensuring the security of networks and information systems of public administrations that do not enter into the EU scope of the Directive.

In order to increase the efficiency of digitization in public institutions, employees must have advanced digital skills, the lack of specialized personnel being a common problem in several countries, which leads to a slowdown in the adoption of new digital solutions, and the solutions to solve this problem can be: (i) continuous training programs, (ii) recruitment of specialists, (iii) collaboration with the private sector for the implementation of digital solutions.

All these aspects can be fulfilled only if the institutions benefit from an adaptable regulatory framework, which allows the implementation of new technologies, without the existence of excessive constraints that limit the efficiency of public institutions, combined with continuous funding in the modernisation of the IT infrastructure and employee education, respectively the adoption of an organisational culture focused on innovation and technology.

The resilience of public institutions in the face of digital and regulatory changes is a complex process, which involves adaptability, strategic investments and the development of robust security mechanisms that must be carefully managed to ensure the stability and efficiency of public administration.

In an ever-changing technological and legislative environment, institutions that manage to adapt quickly and implement innovative solutions will be the most resilient and able to respond to citizens' needs.

External public audit in the "Big Data" era

A huge amount of data is produced every second, which makes the term Big Data in the audit field extremely relevant. Managing this vast volume of information raises multiple challenges, including aspects related to efficient data storage, application of advanced analysis methods, correct interpretation of the results and their optimal use for decision-making.

The accelerated digitization that we are witnessing, in all areas, actually means an increase in the total amount of data that is created, copied, processed or stored and that begins to exceed the available storage capacity. The objectives set by the European Commission, regarding the digitization of the public services offered by the institutions, will lead to the accelerated multiplication of data stored in electronic format, especially if we take into account the fact that these data must be multiplied to ensure their security in the back-up necessary for rapid replication in case of disasters.

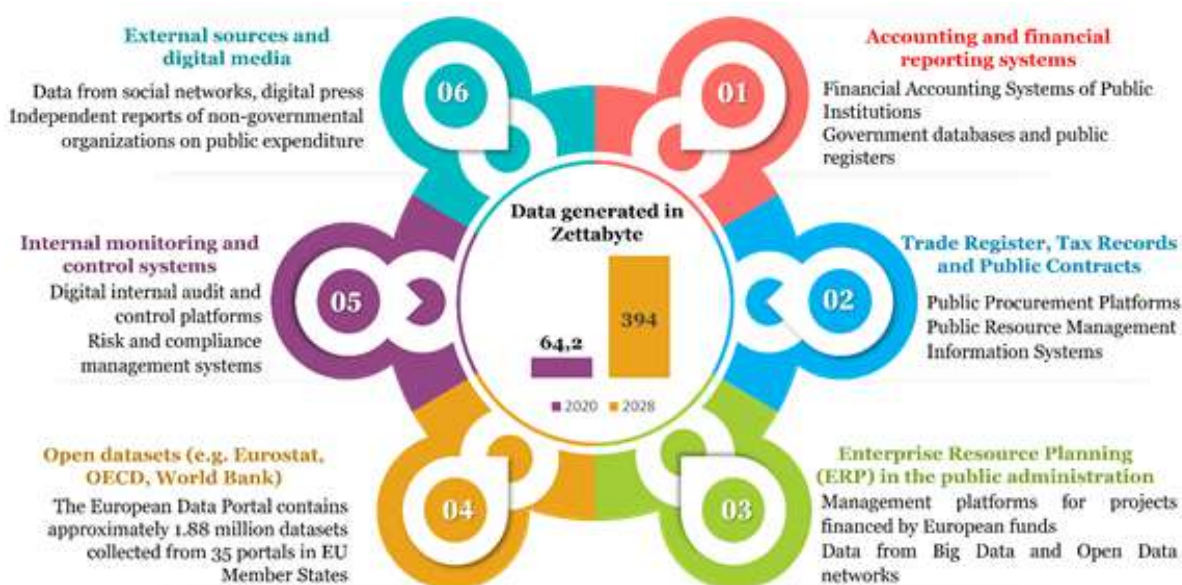
In 2020, the amount of data created and replicated reached a new high, registering a higher growth than previously expected, caused by the SARS-CoV-2 pandemic, when many of the activities moved online.

According to a report by the International Data Corporation (IDC), from 2021, it was estimated that in 2020 the total amount of data in electronic format was 64.2 zettabytes, while the storage capacity amounted to only 6.7 zettabytes, and Statista (2024) estimated for 2024 an amount of 149 zettabytes, the trend for 2028 being over 394 zettabytes.

The advancement of emerging technologies and the digital revolution have profoundly transformed audit processes, the "Big Data" era offering opportunities to improve their efficiency and transparency, while also generating challenges related to the management of large volumes of data, its security and the adaptation of traditional audit methodologies.

For external public audit, digital databases are extremely important, as they are processed and analysed for documentation, and they can include multiple sources, including: (i) accounting and financial reporting systems, (ii) commercial registers, tax records and public contracts, (iii) open datasets of national or international bodies, (iv) internal monitoring and control systems, (v) external sources and digital media (Figure 4).

Figure 4. Digital data sources in auditing



Source: Author processing

Supreme Audit Institutions (SAIs) have the ability to analyze huge volumes of information to detect irregularities and fraud, as well as anomalies and financial risks in a faster and more accurate way with the help of artificial intelligence and machine learning technologies. The implementation of digital technologies also has a substantial impact on audit processes, and new digital data analysis technologies offer opportunities for auditors to perform tasks as efficiently as possible, respectively they can provide tools that, through automation, can save auditors from manually performing time-consuming operations. At the same time, we can also talk about an increase in accountability and improved transparency within public institutions, with digital technologies providing detailed analysis and extensive checks of the activity carried out. The application of external public audit procedures on "Big Data" databases offers a number of advantages related to increasing efficiency and reducing costs through automatic data analysis, early detection of fraud using data analysis algorithms to identify abnormal behaviours, real-time data analysis that allows quick decisions to be made, and improved access to information. In this regard, aspects related to the quality of the data on which the automatic analysis algorithms are applied are extremely important, and less to their quantity, there is a risk of issuing erroneous opinions.

It is important to note that, in order to take full advantage of the opportunities offered by digitalization, auditors must have the necessary digital skills and capabilities to use new technologies, which means their continuous training in the field of data analysis and cybersecurity. In addition to the challenges related to the skills of external public auditors, the management of large data sets requires robust infrastructures capable of processing complex data, increasing the dependence on digital data exposing the audit to cyber or privacy risks. Supreme Audit Institutions (SAIs), respectively auditors, are both beneficiaries of digital data and data producers who must ensure their quality and security, and it is extremely important

that cybersecurity is ensured at the highest possible level, especially since we have access to the data of the audited institutions.

The use of Artificial Intelligence (AI) in auditing can have an impact both on the audit work, by increasing the efficiency and effectiveness of audit processes, and on the way auditors think about their audit strategy to entities that also use such technology.

A number of areas of external public audit are already outlined in which AI can be applied to improve the efficiency, accuracy and transparency of processes, including: (i) fraud detection and prevention by analyzing large volumes of data and identifying anomalous patterns, (ii) financial auditing and regulatory compliance by automating the verification of compliance with current regulations, (iii) risk analysis and prediction of anomalies by assessing the history of entities and providing information on risk areas, (iv) auditing the performance and efficiency of programs through which algorithms identify inefficiently used resources and propose optimizations, (v) auditing in IT and cybersecurity and providing real-time alerts on cyber-attacks, respectively protection measures, (vi) real-time auditing and continuous monitoring by verifying transactions as they are carried out, deviations being detected instantaneously, (vii) the verification of public procurement for the detection of conflicts of interest or unjustified expenses by comparing the prices of the offers with the market standards.

Audit processes can adapt to the "Big Data" era only by adopting measures and solutions related to investments in digital infrastructure (hardware and software), the development of advanced IT systems for data analysis and storage, inter-institutional collaboration between audit institutions and technology experts, clear regulations on the use of data that ensure transparency and ethics in use, and the adoption of emerging technologies such as artificial intelligence or blockchain to improve audit processes and ensure the traceability of information.

Conclusions

The digital transformation of external public audit in the era of "Big Data" redefines the way public institutions manage and control financial resources. Digitalization brings an increased level of transparency, efficiency and accuracy to audit processes, facilitating the analysis of large volumes of data and the rapid identification of irregularities. However, this transition requires increased institutional resilience given the accelerated pace of technological and regulatory change. Public institutions need to adopt flexible adaptation strategies, including the implementation of dynamic legal frameworks, the development of digital skills and the creation of a robust IT infrastructure.

On the other hand, the challenges of auditing in the era of Big Data are multiple. The volume and complexity of data are increasing exponentially, which requires new methods and advanced analysis tools. In addition, cybersecurity becomes a critical issue, as digital vulnerabilities can compromise the integrity and confidentiality of audited data. Other major challenges include the integration of disparate data sources, the lack of transparency regarding the AI algorithms used in the audit process, and the need to harmonise data protection regulations.

Thus, strengthening institutional resilience requires a strategic approach, combining technological innovation with strict governance and control measures. External public audit must become a continuous process, based on predictive analysis and automatic risk detection tools. With the right infrastructure, adaptable legislative frameworks and a well-trained workforce, public institutions can turn digitalization from a challenge into a competitive advantage for a more transparent and efficient administration.

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Paper 13: Resilience in Action: How External Audits Drive Institutional Adaptation? – Albanian Supreme Audit Institution



Xhuljeta Çelaj

Senior Auditor/Head of
Methodology and Professional
Development Unit

Albanian Supreme Audit Institution

“ *No matter how difficult circumstances may be, there is always the possibility of overcoming challenges.* ”

Abstract

Supreme Audit Institutions (SAIs) are crucial in reinforcing institutional resilience and adaptation by providing independent evaluations of governance performance. External audits act as catalysts for institutional change, identifying inefficiencies, promoting transparency, and recommending reforms that enhance accountability. This paper explores how SAIs influence resilience through audit-based oversight, accountability mechanisms, and governance innovation. It examines challenges such as political resistance, bureaucratic inertia, and resource limitations that hinder audit-driven adaptation. Additionally, the study highlights emerging trends in auditing, including AI-driven evaluations, digital governance, and international audit collaborations. By integrating audit-driven insights into governance strategies, institutions can strengthen their ability to navigate evolving challenges and reinforce long-term resilience.

Keywords:

Supreme Audit Institutions (SAIs), institutional resilience, governance performance, external audits, transparency, accountability, institutional change, audit-based oversight, governance innovation, political resistance, bureaucratic inertia, resource limitations, AI-driven evaluations, digital governance, international audit collaborations.

1. Introduction

Supreme Audit Institutions (SAIs) are the cornerstone of audit – based oversight, providing independent evaluations of government operations, financial management, and policy implementation. By conducting systematic audits, SAIs influence institutional decision-making, ensuring compliance with regulations and fostering transparency. Beyond compliance, SAIs drive resilience by recommending structural reforms and operational enhancements that institutions can adopt in response to audit findings.^[1]

SAIs not only assess financial accuracy but also evaluate governance efficiency, risk management approaches, and long – term sustainability efforts. As institutions grapple with shifting governance priorities, the role of SAIs becomes even more critical in shaping adaptive frameworks for public administration. External audits act as catalysts for institutional adaptation by identifying vulnerabilities, recommending reforms, and reinforcing accountability. They uncover inefficiencies that might otherwise go unnoticed and compel institutions to address structural weaknesses. This process of continuous evaluation fosters a culture of responsiveness, where institutions proactively refine policies, financial management strategies, and operational frameworks to align with audit findings.

The effectiveness of external audits extends beyond compliance—institutions that embrace audit – driven insights can strengthen resilience by optimizing resources, implementing best practices, and enhancing governance mechanisms. In essence, external audits serve not only as evaluative tools but also as engines for long-term institutional evolution.

2. Foundations of Institutional Resilience and Adaptation

The term “resilience” comes from the Latin word “resilire”, which means to leap or jump back^[2]

In today’s world, where pandemics, wars, shocks and uncertainties are becoming the new normal, resilience cannot comprise only the ability for organizations to leap or jump back and restore their status quo ante. In this sense, resilience appears to orient organizations towards recovery efforts. Nowadays more than ever, resilience means more than just recovery. It includes an ability to dampen the effects of a crisis so as to recover more quickly^[3], steadily and to adapt accordingly. In such a volatile world, shocks, crises and disasters are inevitable and likely to continue, for this reason resilience is not a luxury but a necessity.

Resilience as a concept, or as a strategy to follow at an organizational level in order to counterbalance challenges and ever changing environments is based on four pillar abilities that permit an organization to perform resiliently: responding, monitoring, learning, and anticipating.

Responding, i.e., knowing what to do, is concerned with the ability to take prompt and appropriate action in response to a given situation. This pertains to an organization’s ability to discern the optimal response to circumstances of change or disruption, whether through the implementation of pre – established actions, the adaptation of existing operations, or the invention of novel operational methods. It is of the utmost importance for organizations to be able to react to both anticipated and unexpected events in a timely and effective manner. This enables them to maintain readiness and adaptability, thereby avoiding or effectively dealing with crises.

Monitoring, i.e., knowing what to look for, is the process of observing and assessing the status of a system or process over time to identify potential issues or changes that may require attention. Monitoring entails monitoring one’s own performance and external operating conditions, thereby enabling the identification of potential threats or opportunities in the near term.

[1] Brown, Michael. “Supreme Audit Institutions and Their Impact on Governance.”, *International Journal of Auditing*, 32, no. 1 (2022): 67–89.

[2] Moonen, Gaston, “What’s in a name? – Resilience as key concept in the RRF”, *ECA Journal “The EU Recovery and Resilience Facility: a jump to a resilient Europe?”*, No. 2, 2022, page 11.

[3] Lei XIAO, Huan CAO, *Organizational Resilience: The Theoretical Model and Research Implication*, 2017, pg 1.

Learning, i.e., knowing what has happened, is a crucial aspect of organizational capability. This ability entails an awareness of past occurrences and the ability to learn from them. The ability to learn from experience enables organizations to enhance their responsiveness and adapt their objectives in accordance with evolving needs.

Knowing what to expect, i.e., Anticipating potential future developments that could represent changes or difficulties, such as new regulations or alterations in operating conditions, is a crucial ability for organizations seeking to maintain a competitive advantage. By paying attention to scenarios that could impact the organization, this ability allows for the preparation of strategies to navigate environmental changes.[4]

Supreme audit institutions can significantly influence each one the four abilities with their audit work.

3. Institutional Resilience – What is the role of SAIs?

Institutional resilience aims to explain how an organization withstands and responds to disruptions, adapting its structure and policies to maintain stability and efficiency. For public institutions, resilience is not merely about survival but about dynamic adaptation, ensuring continuous improvement in governance practices. Resilience highlights the importance of accountability mechanisms that facilitate adaptive responses. Public external audits are one of such mechanisms, due to their role of enabling institutions to recognize inefficiencies, adjust strategies, and fortify operational integrity. Public external audits provide objective assessments of institutional governance and performance, aiming to incite proactive adaptation rather than just reactive crisis management.

SAIs, as institutions who have the mandate to conduct external audits to the public sector's management of budgetary funds, can

enormously influence public institutions' ability to perform resiliently: responding, monitoring, learning, and anticipating.

3.1 Audit – Based Accountability

Audit – based accountability[5] highlights that external audits have an undeniable impact on the reinforcement of institutional resilience and adaptability by ensuring compliance, reducing corruption risks, improving performance and strengthening transparency. Many authors on organizational studies have pointed out that public sector institutions have increasingly shifted their focus towards accountability, performance measurement and management systems, quality management, cost improvements etc (Burgess & Ratto, 2003; Moore, 1995; G. Scott, Bushnell, & Sallee, 1990). As a consequence. public entities are expected to meet a number of goals, including the effective and efficient delivery of social outcomes, fairness and justice (Moore, 1995; G. Scott et al., 1990). Expectations combined with challenging environments have put a strain on the ability of public institutions to deliver services without compromising their accountability, transparency and effective and efficient use of public funds. It is worth noting that “the need for financial accountability has existed ever since it became necessary for one individual to entrust the care of his possessions or business to another.” – Committee to Review the Functioning of Financial Institutions (“Wilson Committee”), 1980.

According to a publication by the Institute of Internal Auditors (2006), the public sector as such represents a principal – agent relationship (see figure no. 1 below). The officials – acting as the principal's agent – must periodically account to the principal for their use and stewardship of resources and the extent to which the public's objectives have been accomplished.[6]

[5] Cordery Carolyn, Hay David, “Supreme Audit Institutions and public value: demonstrating relevance”, Victoria Business School, Victoria University of Wellington, University of Auckland Business School.

[6] *The Role of Auditing in Public Sector Governance*, The Institute of Internal Auditors, November 2006, 11.

[4] Falegnami, Andrea; Tomassi, Andrea, Corbelli, Giuseppe, and Romano Elpidio, “Resilience Analysis Grid–Rasch Rating Scale Model for Measuring Organizational Resilience Potential”, Applied Sciences, 2025, 15, 1695, pages 3 – 4.

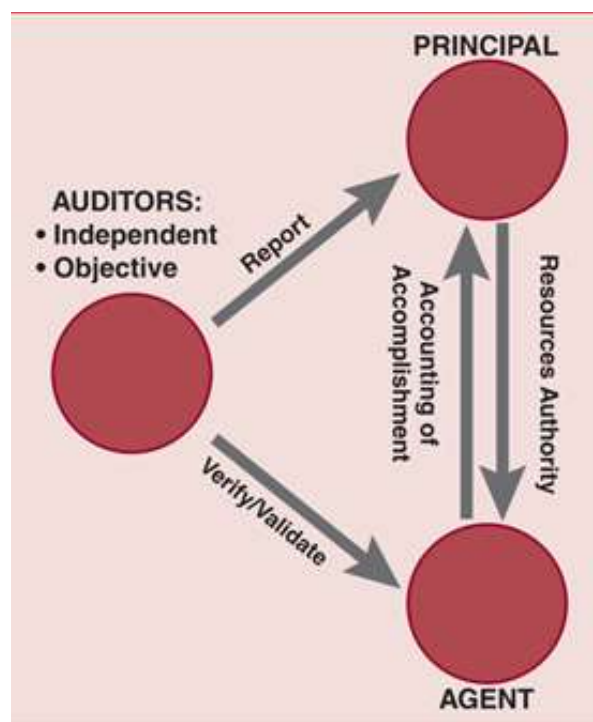
An effective audit activity reduces the risks inherent in a principal – agent relationship. The principal relies upon the auditor to provide an independent, objective evaluation of the accuracy of the agent's accounting and to report on whether the agent uses the resources in accordance with the principal's wishes.

The need for a third party to attest to the believability (credibility) of the financial reporting, performance results, compliance, and other measures arises from several factors inherent in the relationship between the principal and its agent:

1. *Moral hazards*: conflicts of interest: Agents may use their resources and authority to benefit their own interests, rather than the principal's interests.
2. *Remoteness*: Operations may be physically removed from the principal's direct oversight.
3. *Complexity*: The principal may not possess the technical expertise needed to oversee the activity.
4. *Consequence of error*: Errors may be costly when agents are stewards of large amounts of resources and are responsible for programs affecting citizens' lives and health.[1]

[1] *Ibidem*.

Figure no. 1 The Principal – Agent Model



Source: IIA *The Role of Auditing in Public Sector Governance*

3.2 SAls Role

In the context of the audit-based accountability, SAls have a crucial role in independently and objectively supporting public institutions' efforts towards resilience and adaptability. SAls' audit mandates create a powerful instrument of continuous feedback to public' institutions about their activity. But how to SAls exercise their role to improve resilience, adaptability and accountability? According to the IIA *The Role of Auditing in Public Sector Governance*[8], SAls can influence resilience and adaptability of public institutions through their oversight (detection and deterrence), insight and foresight role.

a. Oversight

Auditors assist decision-makers in exercising oversight by evaluating whether government entities are doing what they are supposed to do, spending funds for the intended purpose, and complying with laws and regulations. Audits focusing on oversight answer the questions, "Has the policy been implemented as intended?" and "Are managers implementing effective controls to minimize risks?" Auditing supports the governance structure by verifying agencies and programs' reports of financial and programmatic performance and by testing their adherence to the organization's rules and aims.

Moreover, oversight audits contribute to public accountability by providing access to this performance information to relevant principals within and outside of the organization under audit. Both elected officials and managers are responsible for setting direction and defining organizational objectives. In addition, managers have the duty to assess risks and establish effective controls to achieve objectives and avert risks. In their oversight role, SAls assess and report on the success of these efforts. Oversight also describes the role SAls have to detect and deter public corruption, including fraud, inappropriate or abusive acts, and other misuses of the power and resources entrusted to government officials. SAls monitor the effectiveness of management's internal control

[8] *Idem*, pages 11 – 14.

structure to identify and reduce the conditions that breed corruption. SAls may have also the mandate to conduct audits aimed at uncovering corruption in the government organizations through detection and deterrence.

Detection.

Detection is intended to identify improper, inefficient, illegal, fraudulent, or abusive acts that have already transpired and to collect evidence to support decisions regarding criminal prosecutions, disciplinary actions, or other remedies. Detection efforts can take many forms:

a. Audits or investigations based on suspicious circumstances or complaints that include specific procedures and tests to identify fraudulent, wasteful, or abusive activity. Alternatively, red flags that appear during the course of an audit initiated for unrelated reasons may result in added procedures to specifically identify acts of fraud, waste, or abuse.

b. Cyclical audits, such as payroll, accounts payable, or information systems security audits, that test an organization's disbursements and/or related internal controls.

c. Audits requested by law enforcement officials that analyse and interpret complex financial statements and transactions for use in investigating and building evidentiary cases against perpetrators.

d. Reviews of potential conflicts of interest during the development and implementation of laws, rules, and procedures.

Deterrence.

Deterrence is intended to identify and reduce the conditions that allow corruption. Audit work seeks to deter fraud, abuse, and other breaches of public trust by:

- a. Assessing controls for existing or proposed functions.
- b. Assessing organizational or audit-specific risks.
- c. Reviewing proposed changes to existing laws, rules, and implementation procedures.
- d. Reviewing contracts for potential conflicts of interest.

Successful detection efforts may also have a deterrent effect.

b. Insight.

SAls provide insight to assist decision-makers by assessing which programs and policies are working and which are not, sharing best practices and bench-marking information, and looking horizontally across government organisations and vertically between the levels of government to find opportunities to borrow, adapt, or re-engineer management practices. The audit activity helps institutionalise organisational learning by providing ongoing feedback to adjust policies. SAls conduct their work systematically and objectively to develop a detailed understanding of operations and draw conclusions based on evidence. Therefore, they can provide a fair description of problems, resources, roles, and responsibilities that, combined with useful recommendations, can encourage stakeholders to rethink problems and programs. Not only can the performance of the specific program under audit be improved, but working through the issues brought to light by a particular audit can enhance the capacity of government and the public to deal with similar problems. Audits focusing on insight contribute importantly to answering the broader question, “Has the policy brought about the intended results?” Concurrently with the accountability function, audits contribute to improving the operations of government

c. Foresight.

SAls also help organizations look forward by identifying trends and bringing attention to emerging challenges before they become crises. The audit activity can highlight challenges to come — such as from demographic trends, economic conditions, or changing security threats — and identify risks and opportunities arising from rapidly evolving science and technology, the complexities of modern society, and changes in the nature of the economy.

These issues often represent long-term risks that may far exceed the terms of office for most elected officials, and can sometimes receive low priority for attention where scarce resources drive more short-term focus on urgent concerns. Additionally, a common audit approach — risk-based auditing — focuses the audit on the organisation's overall risk management framework, which can help identify and deter unacceptable risks. Through risk-based auditing, the audit activity provides useful and relevant information to the organisation for managing its risks. Audits focusing on foresight help answer the question, “What policy revisions or implementation would meet a future need or risk?” When SAls focus on trends and look forward, they help to support decision making.

Through these roles, SAls protect core good governance values. By providing oversight, insight, and foresight services, SAls help ensure that institutions not only conduct the public's business transparently, fairly, and honestly, with equity and probity, while conducting their own work using the highest standards of integrity, but also are resilient and adaptable to changes and challenges. SAls vary widely in their structure, authority, and influence across different regions[9], reflecting diverse governance traditions and accountability frameworks. A comparative analysis highlights key distinctions [10]: European Model (ECA & National Audit Offices): Emphasizes comprehensive financial audits, performance evaluations, and policy recommendations aimed at strengthening EU institutions.

[9] Pompe Sebastiaan, French Alice, Aldcroft Martin, Fredriksen Camilla, and Alain Memvuh, with contributions by Taylor- Pearce Lara, Domelevo Daniel, Newiak Monique, and S. Rahim Fazeer, “Good Governance in Sub-Saharan Africa Opportunities and Lessons”, Chapter 12 “The Role of Supreme Audit Institutions in Addressing Corruption, Including in Emergency Settings”. 2022, 209 – 231. [Chapter 12: The Role of Supreme Audit Institutions in Addressing Corruption, Including in Emergency Settings in: Good Governance in Sub-Saharan Africa](#).

[10] OECD Public Governance Reviews Supreme Audit Institutions and Good Governance Oversight, Insight and Foresight, 2016. [SupremeAuditInstitutions.pdf](#)

Developing Nations & International Financial Audits: Often involve collaboration with international financial bodies such as the World Bank and IMF, ensuring compliance with global fiscal standards while promoting institutional capacity-building.

Asia, Africa, and Latin America: Exhibit diverse audit approaches, with some nations adopting stringent anti-corruption audit mechanisms, while others integrate auditing into broader governance reform initiatives.

Through comparative analysis, it becomes evident that external audit mechanisms are not one-size-fits-all; rather, they evolve in response to institutional, political, and economic contexts, shaping governance adaptation strategies worldwide.

4. Challenges to Audit – Driven Resilience and Adaptation

4.1 Political Resistance and Bureaucratic Inertia

One of the most significant challenges to institutional adaptation through audits is political resistance. Governments or public institutions may view external audits as intrusive or politically motivated, leading to reluctance in implementing recommended reforms. In some cases, audit findings are ignored or downplayed to preserve the status quo or prevent shifts in political power dynamics.

Bureaucratic inertia further complicates audit-driven adaptation. Institutional rigidity—characterised by slow decision-making processes, hierarchical complexities, and outdated operational structures—can hinder responsiveness to audit recommendations. Even when audits identify inefficiencies, institutions may struggle to implement necessary changes due to systemic resistance, entrenched procedures, or fear of disrupting internal power structures.

An example of this resistance can be seen in countries where audit institutions have exposed large-scale financial mismanagement but faced

significant push-back from political leaders unwilling to enact reforms. Overcoming such obstacles requires stronger legislative enforcement and independent oversight mechanisms.

4.2 Resource Limitations in Supreme Audit Institutions

While audits provide critical insights into governance performance, Supreme Audit Institutions (SAIs) often face resource constraints that limit their effectiveness. Factors such as limited funding, insufficient staffing, and outdated technological infrastructure can hinder their ability to conduct thorough investigations and enforce audit-driven policy adjustments.^[11]

Resource challenges manifest in the following ways:

Underfunded Audit Institutions: SAIs may lack financial support, restricting their ability to conduct extensive investigations or follow up on audit implementation.

Shortage of Skilled Staff: Effective audits require experienced financial analysts, compliance experts, and governance specialists—resources that some audit institutions struggle to secure.

Technological Limitations: The rise of digital governance necessitates advanced auditing tools, but many SAIs operate with outdated methods that limit their ability to analyze complex financial transactions and risk management frameworks.^[12]

To strengthen audit – based resilience – building, institutions must invest in capacity – building efforts, ensuring that SAIs have the necessary resources to conduct independent evaluations and influence governance adaptations.

[11] Brown, Michael. "Supreme Audit Institutions and Their Impact on Governance." *International Journal of Auditing* 32, no. 1 (2022): 67 – 89.

[12] Williams, Robert. "Digital Governance and Automated Accountability." *Technology and Society* 28, no. 3 (2023): 201–220.

4.3 Compliance Versus Innovation Dilemma

Audit-driven resilience and adaptation often involves a balance between compliance with existing regulatory frameworks and the pursuit of innovative solutions. While audits emphasize adherence to established guidelines, institutions may hesitate to introduce creative governance models for fear of non-compliance or unintended consequences.

This dilemma is particularly evident in sectors where digital governance is gaining prominence. For example, AI-driven audit mechanisms offer improved accuracy in financial oversight but raise concerns regarding ethical governance, data security, and regulatory alignment. Institutions must navigate these challenges carefully, ensuring that compliance measures do not stifle potential innovations that could enhance efficiency and resilience.[13]

5. Future Trends in External Auditing

5.1 The Rise of AI and Big Data in Audits

Advancements in artificial intelligence (AI) and big data analytics are transforming the landscape of external auditing, introducing innovative tools that enhance efficiency and precision. AI-driven audits leverage machine learning algorithms to detect anomalies, assess risk patterns, and generate predictive insights, significantly improving fraud detection and governance monitoring.

Although AI-driven audits offer significant advantages in efficiency and accuracy, concerns about algorithmic bias, data privacy, and the ethical governance of AI remain critical considerations. Institutions must develop robust regulatory frameworks to balance technological innovation with accountability safeguards.

5.2 Digital Governance and Automated Accountability

As governments increasingly transition to digital governance models, automated auditing mechanisms are becoming integral to institutional adaptation. Digital tools streamline audit processes, enhance transparency, and reduce human errors in financial assessments.

[13] Ibidem.

Trends in digital auditing include:

Blockchain-Based Audits: Ensuring tamper-proof financial records, blockchain technology enhances integrity in governmental transactions.

E-Governance Integration: Digital platforms allow real-time audit tracking, enabling institutions to monitor financial compliance seamlessly.

Automated Regulatory Reporting: AI-driven audit bots generate compliance reports with minimal manual intervention, reducing bureaucratic inefficiencies.

Despite these advancements, digital governance faces challenges such as cybersecurity risks, data governance complexities, and the need for standardised regulatory policies across international jurisdictions. Strengthening cybersecurity protocols and adopting harmonised digital audit frameworks will be crucial in mitigating these risks.

5.3 Strengthening International Audit Collaborations

Globalisation has intensified the need for cross-border audit cooperation, fostering partnerships between international audit institutions and governance bodies. As financial systems become more interconnected, collaborative audits ensure consistent regulatory oversight, preventing cross-national financial mismanagement.

Key aspects of international audit collaborations include:

Joint Audit Programs: Institutions such as the European Court of Auditors (ECA) and U.S. Government Accountability Office (GAO) conduct collaborative investigations into multinational governance issues.

Global Standards Alignment: Organizations such as the International Organization of Supreme Audit Institutions (INTOSAI) promote uniform auditing practices across jurisdictions.

Financial Integrity in Multinational Development Projects: International financial institutions engage in independent audits to ensure funding transparency and mitigate corruption risks in global development programs.

The future of external auditing will likely be shaped by strengthened partnerships between national and international audit entities, enhancing institutional resilience through coordinated financial oversight mechanisms.



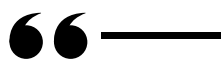
6. CONCLUSIONS



The Lasting Impact of Audit-Driven Reforms

External audits have proven to be essential instruments in fostering institutional resilience, ensuring financial integrity, and strengthening governance adaptation. By identifying inefficiencies, promoting transparency, and driving policy reforms, audits empower institutions to evolve in response to governance challenges.

Institutions that effectively integrate audit recommendations exhibit heightened adaptability, demonstrating improved risk management frameworks, strengthened regulatory compliance, and enhanced public accountability. As audits continue to shape governance landscapes, institutions must recognise them as dynamic tools for sustainable resilience rather than mere oversight mechanisms.



Institutional Resilience as a Long-Term Process

Institutional adaptation is not a one-time reaction to audit findings; it is an ongoing process that demands continuous evaluation and structural adjustments. Resilience is built through sustained commitment to accountability, innovation, and governance reform.

To achieve long-term institutional resilience, governments and audit institutions must prioritise the following:

- **Embedding Audit Recommendations into Governance Strategies:** Institutions should proactively implement audit insights to refine operational frameworks.
- **Strengthening Collaboration Between SAs and Policymakers:** Close interaction between audit bodies and legislators ensures that audit-driven reforms translate into actionable governance improvements.
- **Investing in Technological Advancements for Auditing:** AI-driven analytics, blockchain auditing, and digital governance models can optimise institutional adaptation efforts.
- **Enhancing Public Engagement in Audit Transparency:** Citizens play a vital role in holding institutions accountable, reinforcing audit effectiveness through societal awareness.



Recommended

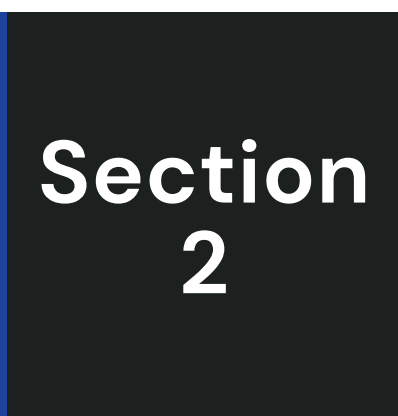
To maximize the impact of external audits in driving institutional adaptation, policymakers should consider the following recommendations:

1. Increase Funding and Capacity for Supreme Audit Institutions (SAIs): Strengthening audit institutions through adequate resources ensures comprehensive financial assessments and governance oversight.
2. Establish Standardised Global Audit Frameworks: Harmonising international audit standards facilitates consistent regulatory oversight across jurisdictions.
3. Integrate Auditing into Policy Planning Cycles: Embedding audit mechanisms into governance decision-making enhances institutional responsiveness.
4. Encourage Institutional Openness to Innovation in Compliance Mechanisms: Balancing compliance requirements with adaptive governance models fosters resilience without stifling innovation.
5. Ensure Political Independence of Audit Institutions: Safeguarding audit agencies from political interference preserves their credibility and effectiveness in driving reforms.

By implementing these recommendations, institutions can strengthen their ability to adapt to evolving governance challenges, ensuring that external audits remain instrumental in shaping institutional resilience.

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Section 2

PANEL DISCUSSION



**“A NEW APPROACH
TO AUDIT QUALITY
MANAGEMENT:
WHAT DOES IT
MEAN FOR SAIS?”**



Foreword by the Secretary General of Albania Supreme Audit Institution

Dear reader,

It is with great pleasure that I present this publication, which brings together the insights and reflections shared during the recent panel discussion on the System of Audit Quality Management.

The quality of audits lies at the heart of effective public oversight. In the field of external public audit, where our work directly supports transparency, accountability, and the responsible use of public resources, maintaining the highest standards is both a professional and ethical obligation.

This compilation captures valuable contributions from experts and practitioners who explored how structured, risk-based, and proactive quality management systems can strengthen the reliability, independence, and impact of public audits. It reflects a shared understanding that audit quality is not a one-time achievement, but an ongoing commitment embedded in institutional culture and processes.

At Albania Supreme Audit Institution, we are committed to continuous improvement and learning. We believe that by sharing experiences and fostering dialogue, we can collectively advance the effectiveness of external audit institutions across our region.

I hope the pages that follow will serve as a meaningful reference and an inspiration for all those dedicated to upholding the integrity and value of public audit.

Sincerely,

Valbona Gaxha
Secretary General
Albania Supreme Audit Institution

Introduction

As Supreme Audit Institutions (SAIs) worldwide transition to a more dynamic approach to quality, the panel discussion on the System of Audit Quality Management (SoAQM) offered valuable insights into what this transformation means in practice. The revised ISSAI 140 calls for SAIs to move beyond traditional quality control and adopt a proactive, risk-based, and integrated quality management system that is embedded in their leadership, culture, and operations.

In this session, global experts from IDI and SIGMA explored the conceptual foundations of SoAQM, shared experiences from the IDI Global Pilot, and discussed emerging good practices. The discussion also featured the first-hand experiences of three SAIs—Azerbaijan, Bosnia and Herzegovina, and Albania—who reflected on the real-world challenges, lessons learned, and organisational changes triggered by their participation in the pilot.

Key takeaways included the importance of institutionalising quality management as a shared responsibility, ensuring leadership ownership, building strong monitoring and risk management processes, and fostering a culture of continuous improvement. The panel also emphasised the critical role of capacity building, peer learning, and digital tools in supporting successful implementation.

Panel Composition

The panel discussion on the System of Audit Quality Management (SoAQM) brought together a mix of international expertise and practical field experience. It consisted of:

Representative from IDI (INTOSAI Development Initiative) – who shared conceptual foundations and findings from the Global SoAQM Pilot.

Representative from SIGMA-OECD (Support for Improvement in Governance and Management) – who provided perspectives on institutional approaches and alignment with European and international standards.

Representative from three pilot SAIs: SAI of Azerbaijan; SAI of Bosnia and Herzegovina; and SAI of Albania.

These representatives shared reflections on the challenges, achievements, and organizational changes triggered by the implementation of SoAQM in their respective countries. The panel was marked by a balance between theoretical expertise and practical experience, offering a comprehensive and in-depth discussion on the benefits and challenges of this new approach to audit quality.




Ms. Aulona Jani

Director of Methodology, Strategic Planning and Professional Development

Albanian Supreme Audit Institution

"As the Director of Methodology, Strategic Planning, and Professional Development, Aulona Jani brings a multidisciplinary approach to building systems that drive performance, foster continuous learning, and align long-term objectives with day-to-day operations. She also led the IDI pilot project on implementing SoAQM in Albania Supreme Audit Institution"


Mr. Karma Tenzin, FCCA

Senior Manager,
Professional & Relevant SAs
Department
INTOSAI Development
Initiative (IDI)

"As Senior Manager at IDI, Karma Tenzin has been a driving force behind the development of the IDI Global SoAQM Pilot and Playbook, helping SAs worldwide implement risk-based quality management systems aligned with the revised ISSAI 140."


Mr. Alastair Swarbrick

Senior Policy Advisor & PFM
Team Leader
SIGMA, OECD

"As a Senior Policy Advisor and Team Leader for Audit, Budget, and Internal Control at the SIGMA Programme (OECD/EU initiative), Alastair Swarbrick actively supports SAs in the region in embedding quality management principles into their institutional frameworks, with a strong focus on governance, leadership engagement, and alignment with international good practice."



Ms. Nurana Safarova
Head of Legal Services &
Quality Control, Chamber of
Accounts of Azerbaijan

"As Head of Legal Services and Quality Control at the Chamber of Accounts of Azerbaijan, Nurana Safarova led her SAI's transition to a risk-based SoAQM, reshaping policies and procedures to align with ISSAI 140 and modern quality management standards."



Ms. Eldina Pleho
Senior Performance Auditor
– Quality Control,
Methodology & Planning
Audit Office of the Institution
of Bosnia and Herzegovina

"In her role at the Audit Office of Bosnia and Herzegovina, Eldina Pleho played a key role in designing and piloting her SAI's new SoAQM framework, helping integrate risk-based monitoring and evaluation mechanisms into the audit quality system."



Ms. Xhuljeta Çelaj
Senior Auditor – Head of
Methodology and
Professional Development
Albanian Supreme Audit
Institution

"As a team member of SoAQM implementation team in SAI Albania, Xhuljeta Celaj contributed in the development of a structured, organization-wide risk-based approach to quality management, embedding the revised ISSAI 140 principles across all levels of the institution."

**PART I. ESTABLISHING A SOUND
SYSTEM OF AUDIT QUALITY
MANAGEMENT**

INSIGHTS FROM IDI AND SIGMA

Ms. Aulona Jani

Good morning, colleagues, partners, and distinguished guests,

It is a great pleasure to welcome you to today's session—and to set the stage for an important conversation: What does this new approach to audit quality management truly mean for us?

Before we dive into the substance, allow me to share a brief personal story.

When we began planning this conference to celebrate 100 years of ALSAI, I knew we had to involve our trusted partners, IDI and SIGMA. Their unwavering support has been instrumental in ALSAI's progress, particularly in strengthening audit quality.

I reached out to Karma from IDI and Alastair from SIGMA, and to my delight, both responded enthusiastically. During those initial exchanges, Karma made a wonderful suggestion: "Why not dedicate part of the second day to a panel discussion on the System of Audit Quality Management?"

This idea immediately sparked my enthusiasm – especially since ALSAI had been part of the IDI Global Pilot on SoAQM. What began as a project has grown into an ongoing journey of learning and transformation, supported throughout by Karma, Mark, and the broader IDI community. Throughout this process, we experienced first – hand the importance of collaboration, shared commitment, and a deep dedication to audit quality.

Now, let's turn to the core topic.

For decades, SAIs have pursued audit quality primarily through control mechanisms – typically applied after audit work is completed. While important, this has been largely a reactive approach. Today, however, we are entering a new era – driven by the revised ISSAI 140—which calls on us to move from controlling quality to managing it: proactively, systematically, and strategically. At the heart of this shift lies the System of Audit Quality Management (SoAQM). It is not a checklist; it is a comprehensive,

risk – based framework that shapes how we govern, plan, conduct, and monitor our audits. This transition involves three fundamental changes for SAIs:

First, institutionalisation. SoAQM must be fully embedded in the structure and culture of our institutions. It is not a one – time fix – it is an ongoing system of leadership, strategy, and continuous improvement.

Second, shared ownership. Audit quality is no longer the responsibility of a single department. Under ISSAI 140, it becomes a shared commitment across the entire institution—a cultural shift where quality is something we live, not something we simply check.

Third, adaptability. Each SAI operates within a unique context – its mandate, resources, and maturity level. SoAQM is designed to be flexible and principles – based, allowing each institution to tailor its system to be both fit – for – purpose and future – oriented.

Our participation in the IDI Global Pilot allowed us to experience this transformation first – hand. It was more than a compliance exercise – it was about assessing risks, setting quality objectives, and creating feedback loops that drive continuous improvement. The pilot also showed us that progress is achievable – no matter where each SAI starts.

Today, in collaboration with IDI, SIGMA, and three representatives from SAIs that participated in the global pilot, we will explore how to bring SoAQM to life in our daily work.

Together, we will discuss: What does a robust SoAQM look like? What challenges must we address? What competencies are required? And how can we collaborate to move forward?

This panel discussion will focus on four core themes: Conceptualisation of the System; Challenges in Design and Implementation; Competencies and Infrastructure; Vision and Future Support.

I look forward to a rich exchange of ideas and practical insights—and I thank you all for being part of this important conversation.

PART I/1. The Conceptualization Of The System

Ms. Aulona Jani: Mr. Tenzin, what are the changes in quality management? What are the key features of the revised ISSAI 140?

Mr. Karma Tenzin: The evolution of ISSAI 140 reflects significant developments in global quality management standards. The previous ISSAI 140 was grounded in the International Standard on Quality Control (ISQC 1) issued by the International Auditing and Assurance Standards Board (IAASB). With ISQC 1 now superseded by ISQM 1 and ISQM 2, INTOSAI has correspondingly revised ISSAI 140 to align with this modernised, risk-based approach to quality management, while adapting it for the public sector context. The revised ISSAI 140 was endorsed in November 2023 and became effective on 1 January 2025. Key Features and Changes in the Revised ISSAI 140 consists of:

Shift from Quality Control to Quality Management: The revision introduces a paradigm shift from a static, control-based system to a dynamic, risk-based approach to managing audit quality. The focus is no longer on merely developing policies and procedures for each component but on setting quality objectives and establishing continuous processes for achieving them.

Eight Interconnected Components: The revised standard expands from six to eight components, adding: SAI Risk Assessment Process and Information and Communication. These components are interconnected and collectively support the System of Audit Quality Management (SoAQM).

Design, Implementation, and Operation of the SoAQM: SAIs are required not just to establish a system but to continuously operate and improve it. The SoAQM must reflect each SAI's context, meaning there is no one-size-fits-all model—each SAI must tailor its system to its specific risks and operating environment.

Expanded Governance and Leadership Responsibilities: The leadership's role now extends beyond policy development to ongoing accountability, particularly in evaluating whether the system is functioning effectively and achieving its quality objectives. Example Quality Objectives (QOs) in the revised ISSAI 140 show broader responsibilities for SAI leadership.

Resource Management. The standard broadens the definition of resources to include human, intellectual, and technological resources, requiring SAIs to set QOs for managing each of these resource types effectively.

Separate Component for Information and Communication: Formerly a subset under leadership, this is now a distinct component with dedicated quality objectives to ensure timely, relevant, and reliable communication both internally and externally.

Monitoring and Remediation Process: The revised ISSAI 140 introduces a proactive monitoring approach, which includes: Evaluation of the deficiencies in the monitoring findings; Root cause analysis of deficiencies; and Remedial actions tailored to address root causes. Monitoring activities are risk-based and scalable, adjusted based on the SAI's circumstances (as per paragraph 64 of the standard).

Evaluation of the System: A new requirement (though not a separate component) mandates that SAIs evaluate the effectiveness of the SoAQM, including: whether the quality objectives are being achieved; whether the system is operating effectively; and whether remedial actions have addressed root causes. In summary, the revised ISSAI 140 introduces a more strategic, integrated, and flexible approach to managing audit quality in SAIs. It requires a living system that evolves through continuous assessment, learning, and improvement—anchored in the principles of accountability, leadership, and risk-based decision-making.

Ms. Aulona Jani: What kind of support did IDI offer for SAIs for establishment of System of Audit Quality Management (SoAQM) consistent with revised ISSAI 140 Quality Management for SAIs? Could you share your experiences from the SoAQM global pilot and how it helped refine the IDI's initiative on SoAQM?

Mr. Karma Tenzin: To support the implementation of the revised ISSAI 140, Quality Management for SAIs, IDI developed a comprehensive Playbook for Systems of Audit Quality Management (SoAQM). This playbook is accompanied by technical guidance, tools, and templates designed to assist SAIs in the design, implementation, and operation of a quality management system. It presents a range of decision points and options, allowing SAIs to tailor their systems to their specific mandates, contexts, and operational environments. The playbook was subject to a global exposure period for public comment, which has now concluded. We expect to publish the final version in all four IDI working languages—English, Arabic, French, and Spanish—by mid-Q3 2025. Parallel to the development of the playbook, IDI also designed a dedicated initiative on SoAQM, launched while ISSAI 140 was still being revised. We worked in close collaboration with the ISSAI 140 project team throughout this journey. As part of our efforts, we piloted the initiative in 12 SAIs across four English-speaking INTOSAI regions that are: EUROSAI (Albania, Cyprus, Azerbaijan, Bosnia and Herzegovina); CAROSAI (Jamaica, Cayman Islands, St. Lucia, Guyana), ASOSAI (Pakistan, Maldives); and AFROSAI-E (Eritrea, Tanzania). IDI supported each of these SAIs in establishing systems of audit quality management that were both aligned with ISSAI 140 and responsive to their local needs. The process began with a tailored needs assessment for each SAI. Using a blended support model, IDI mentors facilitated each SAI's journey by helping them to: Define quality objectives; Apply a risk-based approach to quality management;

Establish monitoring and remediation mechanisms; and to decide on their evaluation approach. Each participating SAI developed and documented its SoAQM policy and began setting up the system. The pilot initiative led to several transformative shifts within SAIs, such as: Restructuring of organizational roles to better support quality management; A proactive, risk-focused approach to deploying limited resources where quality risks are highest; Fostering a culture of continuous improvement and adaptive quality management practices; A move from fragmented practices to integrated, system-wide quality management; and custom-built systems for small SAIs that reflect their size, structure, and unique challenges.

Based on valuable lessons learned from the global pilot, IDI has refined its SoAQM initiative to adopt a phased approach through:

- Phase 1: Needs Assessment
- Phase 2: Policy Development and Initial System Setup
- Phase 3: First-Year Implementation and Operational Support

Progression through the phases is conditional—an SAI must complete one phase to advance to the next. This structured approach ensures that each SAI builds a solid foundation before moving forward, increasing the likelihood of successful and sustainable system establishment.

Ms. Aulona Jani: Thank you, Mr. Tenzin. Now let me bring in Mr. Alastair Swarbrick from SIGMA. Mr. Swarbrick, what kind of impact can the implementation of the revised ISSAI 140 have on SAI achieving its objectives and promoting accountability? What kind of support can SIGMA offer to SAIs of the region in terms of better implementing and understanding the new requirements within their own particularities?

Mr. Alastair Swarbrick: To meet their strategic

objectives and fulfil their mandates, it is essential that all aspects of an SAI's operations are of high quality and lead to high quality output. The quality of the SAI's work and output affects its reputation and credibility, and ultimately the ability to fulfil its mandate. Delivering quality audits from a technical perspective is only one aspect of the quality paradigm. I would hope that through their objectives SAIs are also looking to deliver reliable, relevant, impactful work and quality management should underpin and drive this.

ISSAI 140 should support the SAI in: ensuring audit work follows a consistent, structured approach, regardless of the audit team or subject i.e. follow standard processes; demonstrate adherence to international standards reassuring stakeholders that an SAI operates independently and competently and build public confidence in the SAI's role as a watchdog of public resources; improve the accuracy and reliability of audit conclusions, and encourages the development of impactful report, which strengthens the SAI's influence on public sector improvements; encourages ongoing staff development, ethical practices; a sound internal control environment amongst other things. Embedding quality management allows SAIs to identify, assess, and manage risks (operational, reputational, or legal) to achieving objectives, and link operational practices with strategic objectives, such as improving accountability and transparency, increasing audit impact and addressing sustainability, and digital transformation. Of all this these underpin the credibility, efficiency, and effectiveness of an SAI's works which are critical for fulfilling their mandates and achieving the objectives. It is impossible for an SAI to achieve its objectives over the medium to long term without effective quality management. With respect to strengthening accountability in the public sector. These standards help ensure that audits are reliable, independent, and impactful, thereby holding public institutions accountable for the use of public resources.

Specifically, they help ensure credible and reliable audit results with the findings and recommendations are more likely to be trusted by parliaments, the public, and stakeholders. As a result public institutions are more likely to respond to findings, correct weaknesses, and implement recommendations. It also encourages well focused oversight with a focus on risk and the prioritization of high-impact areas. Additionally high quality audit practices are more likely to produce reports/outputs that are accessible and understandable to the public, civil society, and the media. As a result visibility increases pressure on government entities to justify their decisions and take responsibility for performance and financial management. Finally I would suggest that it should hopefully enable effective parliamentary oversight. Quality standards require reports are timely, well-structured, and impactful, enabling informed debate and decision-making. As a result Parliaments can better exercise their watchdog role, improving checks and balances in governance.

In terms of support can SIGMA offer to SAIs of the region in terms of better implementing and understanding the new requirements within their own context, the support we are and can provide includes:

- Regional conference we are organizing for the Network of SAIs of Candidate and potential candidate countries
- Bilateral support to individual SAIs to develop the SoQM including workshops to share experiences and technical support for the implementation or strengthening of the system
- Share examples of good practice through the development of papers
- Review of SAI's SoQM through peer reviews or other mechanisms.

Part 1/2. Challenges in Designing and Implementing the System

Ms. Aulona Jani: Thank you both for those insightful opening reflections. Now that we've explored the conceptual side of audit quality management, let us turn to a more practical dimension – the challenges. As many of us here know, the real test often lies not in designing a system on paper, but in translating it into practice. So, let us explore what has proven difficult and how these difficulties have been or could be overcome. First, back to Mr. Karma Tenzin from IDI. Mr. Tenzin, what were the main challenges, when piloting the SoAQM initiative for SAIs? How did you manage to resolve them?

Mr. Karma Tenzin: We did not come across significant challenges as such. There were a few challenges that we expected. We tried to address those appropriately to ensure successful completion of the pilot and that the SAIs established the System of Audit Quality Management. Some of challenges faced during the implementation phase of our global pilot relate to the insufficient participation of certain SAIs in our online professional education, which can be attributed to their competing demands. This situation has adversely impacted the timely delivery of pilot activities and has hindered the overall timeline of the project. In addition to that, the five-day professional education on SoAQM posed significant challenges for certain SAIs in fully understanding the concepts, principles, and applications of the revised ISSAI 140. Conducted as an online live session, the delivery was required to be accomplished within a duration of 4.5 hours. Certain SAIs encountered challenges in adhering to the pilot project timeline, as the SoAQM teams were concurrently engaged in their annual audit responsibilities. This situation consequently impacted the overall timeline of the project. Furthermore, in the IDI delivery model, we consistently engage resource persons from various SAIs to assist the IDI manager in supporting the initiative. However, for the SoAQM pilot we endeavoured to manage and provide technical insights through the utilisation of our technical experts. This approach proved to be quite challenging at certain junctures as the

volume of deliverables from the SAIs increased, accompanied by time constraints that necessitated prompt review and feedback on those outputs.

Ms. Aulona Jani: Thank you again Mr. Tenzin. Now over to Mr. Alastair Swarbrick from SIGMA. Mr. Swarbrick, based on SIGMA's experience in the region, what are the most recurrent challenges SAIs encounter in establishing sound quality management systems?

Mr. Alastair Swarbrick: One of the main challenges we have seen is looking at quality as organisational wide issue, and not just quality control of individual audit audits – and moving from quality control to quality management. A significant issue is also about turning the policies that have been developed into practice. Based on our experience in the region other recurrent challenges across the region in implementing and developing quality management include:

- The size of the SAIs and the limited resources available.
- The culture of the SAIs tends to be very risk averse so that for example the implementation of engagement quality reviews and inspections – hot and cold review – leads to a significant number of engagements being reviewed, the significant use of the limited resources available. The selection of such reviews could be more risk based to increase the efficiency and effectiveness of the approach. This is also linked to need for increased delegation and trust.
- The implementation of monitoring arrangements, including inspections (cold reviews) are limited.
- Considering the SAI's governance and management, internal control environment etc as part of the quality management
- Regular wholistic quality reporting needs to be developed
- External assessments more

Getting feedback from auditees/stakeholders to inform the SAI about the quality etc of its work.

Part 1/3. Competencies and Infrastructure Needed

Ms. Aulona Jani: Thank you both for highlighting the key challenges. That brings us naturally to our next area of focus—what is needed to overcome those challenges and make the system work. Because no system—no matter how well designed—can succeed without the right people, the right skills, and the right tools. Let's begin again with Mr. Karma Tenzin.

Mr. Tenzin, what competencies and skills are essential for SAls to effectively design, implement and operate SoAQM and how can IDI support the development of these competencies?

Mr. Karma Tenzin: In Paragraph 27 of the revised ISSAI 140, it is stipulated that when assigning responsibility and accountability for the quality management system or its specific components, the head of the SAI should assess whether the individual or group possesses adequate experience, knowledge, influence, authority, and time to fulfil their assigned roles. Furthermore, it is crucial that they understand their roles and accountability. Consequently, those tasked with responsibility for the system must demonstrate a blend of soft skills and technical competencies necessary for its design, implementation, and operation. IDI has developed a T-shaped competency framework encompassing foundational skills essential for establishing the system, complemented by specialised competencies in quality risk management, monitoring, and remediation. The foundational competencies include: Applies ISSAIs and principles in IFPP relevant to SAls' mandate; Uses core audit skills as per framework developed under ISSAI 150, and basic IT skills; Explains the new approach to audit quality management as defined in applicable standards; Defines the responsibilities for the System of Audit Quality Management and the roles of the Audit Quality Management Specialist; Sets up the System of Audit Quality Management; Documents the design, implementation and operation of the System of Audit Quality Management; Exercises emotional intelligence through self-awareness,

self-management, awareness of others and management of relationships; Acts in the public interest; Upholds ethical behaviour; Displays personal accountability; Exercises sound professional judgment and scepticism; Displays understanding of the stakeholders, their roles and needs relevant to system of audit quality management; Applies proficient language/communication skills; Uses effective facilitation skills; Produces value-adding reports; Contributes to SAI Performance; Manages project plan; Leads organisational change; Shows team management skills; Fosters continuous learning

The Quality Risk Management competencies include: Establishes quality objectives; Identifies quality risks; Assesses quality risks; Designs responses to quality risks; Implements responses to quality risks; Assesses and updates quality objectives, quality risks and assessments made, and responses to reflect the changes in the circumstances; Prepares sufficient and appropriate documentation for quality risk management process

Monitoring and remediation competencies include: Plans the nature, timing and extent of monitoring activities; Monitors the system at the organisational level and reviews completed audit engagements; Identifies deficiencies in the system; Analyses root causes of deficiencies; Evaluates deficiencies in the system; Designs effective remedial actions; Evaluates whether remedial actions have been appropriately designed, and implemented; Reports on the result of monitoring and remediation process; Prepares sufficient and appropriate documentation for the monitoring and remediation process. To support SAls, IDI has designed and developed a new qualification Audit Quality Management Specialist (AQMS) Certificate —a professional certification offered under the IDI Centre. This certification is designed to equip SAI professionals with the competencies required to design, implement, and operate SoAQMs effectively. The AQMS aims to establish a global pool of certified quality management specialists who can support their own SAls and contribute to regional or global peer support efforts.

In 2024, a global team of IDI staff and resource persons collaborated to design the AQMS competency framework (described above), curriculum, and learning materials. The certificate emphasizes cross-cutting competencies such as system design, professional excellence, stakeholder engagement, and the ability to drive positive change. It also offers two specialisation tracks: Quality Risk Management and Monitoring & Remediation.

The AQMS Certificate will be launched in English this year. Graduates of this programme will form the foundation for a shared services arrangement, through which certified professionals can be mobilized to assist SAs in establishing and operating their systems of audit quality management.

The detailed competency framework will be included when we publish the announcement of our new qualification, Audit Quality Management Specialist Certificate.

Ms. Aulona Jani: Thank you. That was very interesting, especially for other SAs who will need support in the future to implement the revised ISSAI 140. Now, let's now to Mr. Alastair Swarbrick. Mr. Swarbrick, what competencies and skills are essential for SAs to effectively design, implement and operate SoAQM?

Mr. Alastair Swarbrick: To effectively design, implement, and operate a SoQM, a SAs need to build competencies across multiple technical, strategic, and interpersonal domains. From my perspective this would include leadership and change management competencies in order to champion quality management, guide cultural shifts and secure buy-in from staff at all levels, along with strategic planning, project and risk Management skills.

As already mentioned, technical audit skills are fundamental. A deep knowledge of international auditing standards and implementing them in practice across financial, compliance and performance audits is essential, along with quality management and assurance Skills such as the ability to design and implement internal and external quality review mechanisms, and conduct root cause analysis to identify systemic issues in audit performance.

Increasing digital and analytical competencies are fundamental. The ability to use digital tools for to support automation, data analyze of large data sets, and enhancing the efficiency and quality of audits will be essential.

Finally communication and collaboration skills are important, for example ability to clearly articulate quality expectations and responsibilities to all staff and promote awareness of standards. Also, the ability engage with external stakeholders such as legislatures, civil society, other SAs, and international partners to reinforce accountability and share quality-focused practices.

Ms. Aulona Jani: And finally, a question to both of you, how can digital tools and data analytics enhance the system's effectiveness? Let us begin again with Mr. Karma Tenzin and then Mr. Alastair Swarbrick.

Mr. Karma Tenzin: While the potential for SAls to utilise technology within their systems of audit quality management has yet to be fully examined, the incorporation of digital tools and data analytics may substantially enhance the efficacy of an SoAQM in various capacities.

Systematic risk-based management: Digital tools enable the SoAQM to incorporate dynamic, data-driven risk assessments. By analysing institutional data across different components of the system, audits, teams, and time periods, the system can identify systemic quality risks and prioritise responses accordingly—ensuring the system remains focused and adaptive.

Automated monitoring and quality management: Integrated digital platforms can embed automated quality checks, alerts, and exception tracking into the SoAQM. This will enhance the system's ability to monitor performance in real time and react swiftly to deviations from expected standards or procedures.

Structured implementation and oversight: Workflow management systems can support the structured rollout of SoAQM policies, roles, responsibilities, and procedures. They could allow for consistent application and tracking of quality management practices across the SAI, including oversight of progress against quality objectives.

Evidence-Based monitoring and Remediation: Data analytics may allow the monitoring and remediation mechanism to systematically evaluate deficiencies, identify recurring root causes of those deficiencies, and measure the impact of remediation actions over time—making the learning and improvement loop more robust and data-informed.

Knowledge management and institutional memory: A digital SoAQM framework can enable storage and easy retrieval of policies, procedures, quality reviews, lessons learned, and other knowledge products. This enhances institutional memory and continuity of quality management, even during staff turnover.

Transparency, Accountability, and Reporting: Dashboards and data visualisation tools can help monitoring and remediation report and system evaluation conclusions internally and externally. This reinforces transparency and strengthens stakeholder confidence in the SAI's system of audit quality management.

Scalability and adaptability: Digital systems provide the scalability needed for system-wide implementation and the adaptability to adjust policies, processes, and controls in response to emerging risks, evolving standards, or institutional change.

Ms. Aulona Jani: and Mr. Swarbrick, what are your thoughts on the question?

Mr. Alastair Swarbrick: Digital tools and data analytics are transforming the way SAls design, implement, and operate their SoQM. I think they can enhance it in a number of ways including:

- Enhancing risk assessment and planning. Data analytics tools can process large datasets and help SAls to Prioritize audits based on actual risk, and focus on high-impact areas. They can also help SAls forecast potential areas of concern to guide strategic and annual audit planning.
- Improving audit execution and evidence collection through the development of: workflow and Documentation Tools, such audit management systems; the development of automated testing and sampling; and getting real-time data access.

- Strengthening Monitoring and Quality Reviews through: audit file analytics with tools scanning completed audits for inconsistencies, missing documentation, or procedural gaps; digital dashboards allow quality managers to track real-time metrics; and root cause analysis to visualise data and analysis trends to understand why certain quality issues (e.g., errors, delays) recur.
- Enhancing Training and Knowledge Sharing through e-learning Platforms & Knowledge Portals: Promoting Transparency and Stakeholder Engagement such as through interactive Online Audit Reports and Real-Time Follow-Up Tracking.

Part I/4. Future Plans and Vision for the Initiative

Ms. Aulona Jani: Thank you both for outlining the essential competencies and the enabling role of digitalization. Let us close the first part of our panel and we now look ahead — toward the future of this initiative: Future Plans and Vision for the Initiative.

The shift to audit quality management is not a one-off reform. It's a long-term transformation. So, it's important to understand what kind of continued support and strategic direction we can expect from our key partners. Let us start once more with Mr. Karma Tenzin.

Mr. Tenzin, what kind of support will IDI offer in the near future to SAls who are starting to implement the revised 140?

Mr. Karma Tenzin: The adoption and implementation of ISSAI 140: Quality Management for SAls is essential for any SAI that applies the ISSAIs in its audit work. Paragraph 9 of ISSAI 140 clearly states that if an SAI declares in its audit report that the audit was conducted in accordance with the ISSAIs, it must comply with all organisational requirements of ISSAI 140.

Given this, it is our shared responsibility to support SAls in establishing Systems of Audit Quality Management (SoAQM) that meet these requirements. IDI is committed to enabling SAls across all INTOSAI regions to take this critical step toward audit excellence. To date, five SAls from the PASAI region — Cook Islands, Fiji, Marshall Islands, Tuvalu, and Vanuatu—have embarked on this journey and are currently engaged in needs assessments to evaluate their readiness. At the start of 2025, we rolled out the initiative in the OLACEFS region, where 14 SAls have signed Statements of Commitment. Additionally, we are supporting six SAls in Asia and the Pacific under the IDI-ADB Sustainable Performance Audit Practices initiative, and we will extend country-level support to the SAls of Timor-Leste and Tunisia.

At the IDI we will establish the SoAQM Advisory services to provide continuing technical support for those SAls who have designed and implemented the system and are in the process of operationalising the support. We plan to mobilise technical expertise from different SAls across different INTOSAI regions. We will establish an online platform to provide this service.

Ms. Aulona Jani: Thank you. And finally, over to Mr. Alastair Swarbrick. Mr. Swarbrick, a sound and effective system of audit quality management is a prerequisite for an effective external audit function. What kind of involvement does SIGMA envisage in the future to support SAls in the effort towards this implementation?

Mr. Alastair Swarbrick: I would expect that we will continue to undertake the monitoring of the overall external audit system including quality that we conduct as part of our assessment of Public Administration Reform in enlargement countries. I also envisage continuing to undertake peer reviews of SAls as and when requested, which I think could become increasingly focused on quality.

On a regional basis apart from the regional conference we are organizing for the Network of enlargement SAls to share experiences in October I would expect that we will continue to support the Network as required in future activities and potentially develop papers which could share examples of good practice.

With respect to bilateral support to SAls apart from peer reviews our support could include workshops to share experiences and the provision of technical support for the implementation or strengthening of the QMS system, based on requests from SAls.

Ms. Aulona Jani: Thank you both for your insights and for the valuable work your institutions continue to do to support SAls globally and regionally.



PART II: EXPERIENCES FROM THE IDI'S SOAQM GLOBAL PILOT

Ms. Aulona Jani: Ladies and gentlemen, we now move into part 2 of our agenda, where we shift the lens from global guidance to practical experience. In this segment, we will hear directly from three Supreme Audit Institutions that participated in the IDI's Global Pilot for the System of Audit Quality Management—a pioneering initiative that helped translate the principles of the revised ISSAI 140 into practice. These institutions have gone through the challenging but rewarding process of designing and initiating their own SoAQM. Their stories offer valuable insights — not just on what to do, but how to do it, what to avoid, and what kind of support is needed along the way. We are pleased to welcome the following distinguished speakers: Ms. Nurana Safarova, Head of Legal Support and Quality Control Department, Chamber of Accounts of Azerbaijan; Ms. Eldina Pleho, Team Leader in Performance Audit, from SAI Bosnia and Herzegovina; Ms. Xhuljeta Celaj, Head of Methodology, Strategic Planning and Professional Development, SAI Albania. Each panelist will reflect on the impact, challenges, and lessons learned from the pilot—and share practical advice for SAIs that are just starting this journey. Let us begin with the first theme: the impact of SoAQM on audit quality management.

Part II/1. Impact of SoAQM on Audit Quality Management

Ms. Aulona Jani: Let us start our discussion with SAI Azerbaijan. Ms. Nurana Safarova, what was the major change in terms of quality management policies and practices your SAI had to make in order to comply with the requirements of the revised ISSAI 140?

Ms. Nurana Safarova: It should be noted that in order to adapt to the new standard, the existing quality management policy and a number of procedures arising from it have been changed. The fact that the new standard views quality management as a dynamic system and regulates it as a process integrated into all activities is also reflected in the new policy. The new policy also includes regulations on Monitoring and Remediation and system assessment processes.

These were not included in the previous regulation. This change has also had a significant impact on risk management. In this regard, the existing policy has been adjusted. In short, I can say that the existing quality management policy has completely changed. Based on our experience, the Monitoring and Remediation and System Assessment components of the new standard represent entirely new processes. As a result, they have significantly influenced procedures planned for this year and beyond. This change process is still ongoing. We are working to integrate new policies and procedures into our internal electronic systems. It is also planned to review the structure of the SAI for the next period. Plans are also in place for accountability, so we plan to present the results of the system assessment in the SAI annual report. In this sense, we consider 2025 to be a transitional year.

Ms. Aulona Jani: Ms. Safarova, how did those changes impact your previous policies/practices and also the organization as a whole?

Ms. Nurana Safarova: More specific example about our risk management process. the risk management policy in the SAI does not solely apply to audit activities; it encompasses all areas of operation. For example, providing an opinion on the implementation of the budget can be seen as a specific case. So, I can say that we have modified our risk management system taking into account the requirements of the standard. Previously, we didn't assess risks based on quality objectives, and we didn't have a method for setting or updating those objectives. It was not part of the process. However, other parts of the process—like evaluating risks and setting priorities—were already in line with the standard. The approach to risk management based on quality objectives is applied specifically to risk management in audit activities.

We started by reviewing our current situation using the quality objectives from ISSAI 140. In the first stage, we identified risks and defined how to respond to them.

Now, we are in the process of putting those plans into action.

Conducting a risk assessment based on a quality objective—and also evaluating the risk in terms of the objective it influences—may appear technically challenging at first. However, it is logically quite sound and supportive. In this context, the emphasis the new policy places on quality objectives adds significant value to quality management.

Furthermore, the fact that the SAI adapts these objectives, revises them according to its specific circumstances, and consistently keeps them in focus has a positive impact on the organization of quality management. This approach creates an opportunity for more precise and effective regulation.

I would like to highlight that when we examine the minimum quality objectives set for the six components, it becomes clear that the SAI's objective in conducting audits goes beyond merely complying with regulations and standards—it is ultimately focused on creating greater value.

One major change was the introduction of a new risk response method as standard call EQR. Of course, all SAIs have similar quality review procedures in place in their existing systems. However, the new standard provides detailed regulation regarding this risk response measure. The IDI SOAQM framework also reflects explanatory suggestions for its selection and implementation. We created basic selection criteria for this and identified employees who meet the requirements to take part. The selection criteria are carried out on a proportional basis for auditors and for complex audits. Criteria include factors such as the frequency of audits in the audited entity, the complexity of the entity, the scope of the audit, etc. As a pilot, we have started implementation of that risk response activity to the audits which our department in the autonomous republic conduct.

Ms. Aulona Jani: And now let us turn our attention to SAI Bosnia and Herzegovina. Ms. Eldina Pleho, what was the major change in terms of quality management policies and practices your SAI had to make in order to comply with the requirements of the revised ISSAI 140?

Ms. Eldina Pleho: In terms of developing a new quality management policy, we can say that it was a direct consequence of all previous activities undertaken by the SAI BiH as part of the SoAQM pilot project. That provided us with a solid foundation for building a Policy based on an initial needs analysis of our Supreme Audit Institution (SAI), identification of quality objectives and related risks, and definition of activities aimed at mitigating those risks.

Our foundation for action was the Financial Management and Control which is a comprehensive system of policies, procedures, and established activities under the responsibility of the Auditor General. The Financial Management and Control system is regulated by the Law on Financing of Institutions of Bosnia and Herzegovina and is based on risk management. It provides reasonable assurance that institutional objectives will be achieved in a proper, economical, efficient, and effective manner. The Auditor General delegates responsibilities to Office staff annually, in line with strategic commitments and legal obligations. Following our needs analysis, the key change defined in the Policy relates to activities of periodic monitoring and evaluation. This year, based on our pilot assessment, we planned four audit engagements as part of periodic monitoring, and we also adapted existing monitoring guidelines to incorporate tools published by the IDI. Additionally, during this year we formed a working group for engagement quality review in a case where we faced dilemmas during a specific audit situation.

In summary: we used the existing Performance Management Framework and Financial Management and Control Systems to develop a process of risk assessment and response. Through our needs analysis, we identified that periodic monitoring and evaluation had not been previously developed, and we initiated activities in that direction. We are conducting four pilot projects for periodic monitoring, and I am personally involved in one of them.

Ms. Aulona Jani: Ms. Pleho, how did those changes impact your previous policies/practices and also the organization as a whole?

Ms. Eldina Pleho: The function of periodic monitoring in this form did not exist before and is now introduced as an obligation under the revised ISSAI 140. Likewise, the function of evaluation also previously did not exist. Generally speaking, the earlier quality assurance function was not clearly established within our SAI. I believe that with the new and existing quality management functions, we will enhance the previous concept of quality assurance. At this moment, no significant changes are required for the regular monitoring system, which represents the former quality control system except the use of some IDI tools that will be integrated in existing manuals for regular monitoring.

Ms. Aulona Jani: Let us continue with SAI Albania. Ms. Xhuljeta Çelaj, what was the major change in terms of quality management policies and practices your SAI had to make in order to comply with the requirements of the revised ISSAI 140?

Ms. Xhuljeta Çelaj: One of the most significant transformations within SAI Albania has been the institutionalization of a structured, organization-wide risk-based approach to quality management, as set out in our newly adopted Quality Management Policy (SoAQM),

aligned with the revised ISSAI 140. Previously, risk considerations were largely implicit and handled at the engagement level. Now, through the creation of the Strategic Management Group (GMS) and the implementation of a clearly defined risk management process, risk assessment has become a central and recurring part of the audit quality system.

This transformation includes the development of quality objectives specific to SAI Albania's context, the systematic identification and assessment of quality risks across all components of the audit cycle, and the formulation of formal responses to mitigate them. For example, quality risks related to independence, ethics, monitoring, and engagement performance are now assessed periodically and addressed through tailored actions, supported by structured documentation and follow-up mechanisms.

What makes this shift truly transformative is that it embeds quality risk management into strategic planning, improves internal coordination across departments, and empowers leadership and audit teams to take informed, preventive actions. Over time, this change is helping SAI Albania to strengthen its audit credibility, improve performance consistency, and align more closely with international best practices

Ms. Aulona Jani: Ms. Çelaj, how did those changes impact your previous policies/practices and also the organisation as a whole?

Ms. Xhuljeta Çelaj: The transformation toward a structured, risk-based quality management system has had a notable impact on coordination, leadership engagement, and monitoring processes within SAI Albania. First, coordination across the institution has significantly improved.

The establishment of the Strategic Management Group (GMS) as the central body for overseeing quality risk management has created a formal platform for cross-departmental collaboration. Leaders from all audit departments are actively involved in the risk identification, assessment, and response processes, which fosters greater alignment and shared ownership of quality objectives. In terms of leadership engagement, the process has strengthened the leadership's role in driving quality. The Head of SAI maintains ultimate responsibility for the Quality Management System (SoAQM), and leadership is now directly involved not only in setting quality objectives but also in regularly reviewing and acting on risk and monitoring results. This level of engagement ensures that quality management is treated as a strategic priority and not merely as a compliance task. The monitoring processes themselves have become more systematic and integrated. The creation of an independent Ad Hoc Monitoring Group and the formalization of annual monitoring and evaluation cycles mean that information on quality performance is now regularly gathered, analyzed, and used to inform decisions. Monitoring activities explicitly target high-risk areas and involve transparent reporting to leadership, followed by concrete improvement actions. This has enhanced the institution's ability to learn from experience and to implement a cycle of continuous quality improvement.

Part II/2. Challenges Encountered During Implementation

Ms. Aulona Jani: Thank you for those reflections on the impact. Now let's move to a crucial aspect that every new implementer will want to hear — the challenges. Even the most successful reforms come with obstacles, and understanding these challenges is key to preparing future implementers. Let me begin with Ms. Eldina Pleho. Ms. Pleho, what were the key challenges your SAI faced during the design and implementation of the SoAQM?

Ms. Eldina Pleho: The challenges are always linked to limited resources, which small SAIs typically struggle with. Our resources are almost always stretched to their limits. I believe this is a common issue for all smaller SAIs, especially in transitional countries where audited systems and processes are underdeveloped. In small SAIs, it is difficult to allocate resources specifically for quality management, as this often means that operational staff must also be involved in the developmental aspects of the organisation – and this is not always an easy adjustment for people.

Ms. Aulona Jani: And for your SAI Ms. Safarova, what were the key challenges your SAI faced during the design and implementation of the SoAQM?

Ms. Nurana Safarova: Designing the system was not particularly difficult, thanks to the one-on-one support provided by the IDI SoAQM project. Discussions with experts and the shared experiences of other participants played a key role in helping us start the process.

However, as expected, the implementation phase has brought certain challenges. This is normal when transitioning to a new system. The main difficulty lies in fully understanding the new approach, shifting our mindset about quality management, and adapting to a new perspective. Another is that the system's dynamic elements require specific resources, which can be hard to secure at the early stages. These challenges are especially evident in areas like monitoring, system assessment, and EQR. The system also demands full documentation, which increases the workload initially.

Still, I believe that as procedures are fully implemented, we will gain the necessary experience, develop examples, and shape a clearer perspective. Over time, these early difficulties will be resolved.

The system will also begin to generate its own sources of information—such as risk management analyses—to support monitoring and evaluation processes.

I think it's natural that everyone at SAI will need some time to adjust. Accepting that they are part of this new system and gradually assimilating it is part of the transition.

Ms. Aulona Jani: And finally, to Ms. Xhuljeta Çelaj. Ms. Çelaj: what were the key challenges your SAI faced during the design and implementation of the SoAQM?

Ms. Xhuljeta Çelaj: During the design and implementation of the SoAQM, SAI Albania faced several key challenges, primarily related to mindset shift, resource constraints, and system complexity. While the design phase benefited from the structured support of the IDI and the guidance provided by the pilot initiative, a major challenge emerged in internalising the new quality management philosophy. The revised ISSAI 140 requires a shift from a control-based to a risk-based and preventive approach, which initially proved difficult for many staff to fully grasp. This conceptual transition required intensive awareness-raising efforts, repeated discussions, and ongoing clarification to ensure shared understanding across the institution.

Resource limitations were another constraint, especially in the early stages. The dynamic components of the system—such as risk assessment, quality monitoring, and engagement quality reviews (EQRs)—required dedicated capacities that were not readily available. Since operational staff often had to take on new responsibilities related to system development and implementation, balancing ongoing audit work with new quality tasks was challenging. Additionally, the comprehensiveness of the system posed a structural challenge. Integrating all eight components of the SoAQM—ranging from governance and ethics to monitoring and evaluation—into a single, cohesive framework demanded time, coordination, and procedural clarity.

The need to formalise documentation and create supporting tools from scratch, such as risk management templates and monitoring procedures, added to the initial workload.

Despite these challenges, the process fostered important internal dialogue and laid the foundation for a more resilient and strategically aligned quality management system. Over time, these difficulties are being transformed into learning opportunities that strengthen SAI Albania's institutional capacity

Part II/3. Practical Advice for New Implementers

Ms. Aulona Jani: We've now seen both the impact and the challenges — but perhaps the most valuable contribution we can offer to new implementers is practical, experience – based advice. Ms. Safarova, drawing from your own journey, what would you recommend to SAls who are just beginning their path toward establishing a System of Audit Quality Management? What are some common pitfalls or mistakes that new implementers should avoid?

Ms. Nurana Safarova: In line with the approach organised by the IDI for all participating countries, we began our process with a needs assessment. SAls can conduct a needs assessment, as we did in the project. I would like to highlight that the IDI website provides sample tools for this purpose. This enables a detailed comparison between the new system and the existing one. While the existing system may contain many elements needed for the new system, it is essential to define the documentation, format, etc.

I don't believe SAls will encounter significant issues if they will use IDI resources throughout the process. However, I recommend involving employees from all departments and ensuring the process is integrated across all SAI structures. As discussed, the new system is not a standalone system; it must be integrated into SAI's overall activities. This requires that everyone within the SAI understands the system, knows how it works. CoA currently conduct training, discussions, and outreach efforts to align our way of thinking with the new system.

Ms. Aulona Jani: Ms. Safarova, could you highlight the most essential steps to ensure a smooth and successful implementation from the outset?

Ms. Nurana Safarova: To begin the process more effectively, I would first recommend becoming familiar with the standard itself, the implementation documents, and the experiences of private sector organizations that have already adopted this practice.

I would say that for a smooth transition, the materials being applied must be systematically understood. Those involved in the process, as well as everyone in the SAI, should be properly informed and trained. The potential use of IT tools should be evaluated, with efforts made to automate the process where possible. We are focusing on this approach more in monitoring the implementation of remediation and risk response measures. I believe this can lead to a more efficient use of resources.

It is also recommended that management stay informed about the progress of the process, including the steps taken regarding its technical aspects. Since the process requires a new perspective, accountability, and a clear division of responsibilities, this can only be achieved with the direct support and involvement of senior management.

Ms. Aulona Jani: what about SAI Bosnia and Herzegovina? Ms. Pleho, drawing from your own journey, what would you recommend to SAIs who are just beginning their path toward establishing a System of Audit Quality Management? Could you highlight the most essential steps to ensure a smooth and successful implementation from the outset? **Ms. Eldina Pleho:** A needs analysis is the most crucial step that must be undertaken. It requires in-depth knowledge and experience in how your previous quality control and assurance systems functioned, and what specific requirements are now demanded by ISSAI 140. It is extremely important to have some existing reviews, such as a PMF assessment or external review, in order to know your organisation well.

It's also essential to insist on having adequate resources – primarily time, but not only time. Time is a resource that every SAI must allocate for this function, as well as human resources. Peer learning is also desirable, as well as access to good practices – meaning experiences from SAIs operating in different contexts: large SAIs, small SAIs, SAIs auditing mature systems versus those auditing underdeveloped or less mature systems and processes.

Ms. Aulona Jani: And to close, Ms. Xhuljeta Celaj, what would you recommend to SAIs who are just beginning their path toward establishing a System of Audit Quality Management? What are some common pitfalls or mistakes that new implementers should avoid?

Ms. Xhuljeta Çelaj: From our experience, one of the most important pieces of advice is to treat the SoAQM rollout as a process of organisational change—not just a technical reform. Early engagement and clear communication are essential. Help staff understand that the system is not about adding layers of control, but about strengthening audit quality and supporting their professional work. Encouraging participation, creating space for questions, and sharing early successes can go a long way in building trust and ownership.

Another practical lesson is to avoid over-complicating the initial setup. It's easy to fall into the trap of designing an overly ambitious system that is hard to operationalize. Instead, begin with basic tools for risk identification, monitoring, and documentation—then refine and expand as capacity grows. Trying to implement everything at once can lead to staff fatigue and inconsistency. A common pitfall is underestimating the time and effort needed to adapt ISSAI 140 to the national context.

Alignment takes more than translating a standard—it requires adapting it meaningfully to existing structures, legislation, and workflows. Lastly, don't assume everyone understands the terminology or intent from the start. Building shared understanding takes time and repetition, especially when shifting from a control-based to a risk-based mindset.

Ms. Aulona Jani: Ms. Çelaj, could you highlight the most essential steps to ensure a smooth and successful implementation from the outset?

Ms. Xhuljeta Çelaj: Our key advice to peers would be to approach the rollout of SoAQM as both a technical project and a change management process. First and foremost, allow time for the necessary mindset shift. Moving toward a risk-based and dynamic quality management approach is not only about adjusting procedures — it requires building understanding and ownership at all levels of the organisation. Invest early in awareness-raising, leadership engagement, and opportunities for open discussion about what the system is trying to achieve.

Second, don't underestimate the importance of building your infrastructure gradually. It is perfectly normal not to have all tools and templates ready from the start. Begin with the most critical elements — for example, basic risk identification and monitoring templates — and refine them over time. The experience of SAI Albania showed that it is better to start simple and learn as you go, rather than waiting for a perfect system.

Third, make full use of peer exchange and expert support. Our collaboration with the IDI and exchanges with other SAIs were extremely valuable in helping us understand practical aspects of the system and adapt the ISSAI 140 requirements to our national context.

Finally, maintain flexibility and patience throughout the process. Resistance and capacity gaps are normal at the beginning, but with consistent leadership support, transparent communication, and small early wins, these challenges can be transformed into drivers of long-term institutional learning and improvement.

Part II/4. Additional Support

Ms. Aulona Jani: I would also ask our panelists if they have insight to share with us in terms of additional support needed to successfully implement SoAQM. Ms. Safarova, what are your thoughts on this matter? What additional support or resources do you believe are necessary to facilitate the successful implementation of the SoAQM?

Ms. Nurana Safarova: The IDI SoAQM project has created a valuable foundation for SAIs to implement ISSAI 140. The playbook, sample documents, and tools available on the IDI website serve as essential resources for initiating and designing the process. Additionally, the materials that explain all the dynamic elements are also available on the site, providing sufficient information to address any questions. There is also an example of policy and guidance on the division of responsibilities.

SAIs intending to conduct a needs assessment can refer to the relevant explanations provided here. From our own experience, we have prepared documentation samples based on those obtained during the project. These samples are also available from the mentioned source.

I should note that during the project, we obtained valuable sources on quality management in the private sector. ISQM 1 is also a useful reference. However, we can confidently state that the source developed within the framework of the IDI SoAQM project, currently available on the website, provides ample support for the transition and policy development.

Ms. Aulona Jani: Ms. Pleho, what was your experience? What additional support or resources do you believe are necessary to facilitate the successful implementation of the SoAQM?

Ms. Eldina Pleho: Time is a resource that every SAI must allocate for this function, as well as human resources. Peer learning is also desirable, as well as access to good practices – meaning experiences from SAIs operating in different contexts: large SAIs, small SAIs, SAIs auditing mature systems versus those auditing underdeveloped or less mature systems and processes.

Ms. Aulona Jani: And lastly Ms. Çelaj, what additional support or resources do you believe are necessary to facilitate the successful implementation of the SoAQM?

Ms. Xhuljeta Çelaj: To facilitate the successful implementation of the SoAQM, we believe that additional support is needed in three main areas: capacity building, tailored tools, and peer learning. First, ongoing capacity building is essential—not just one-time training. The transition to a risk-based, dynamic quality management system requires sustained learning, particularly in areas such as risk identification, engagement quality reviews, and monitoring techniques. Training should be practical, scenario-based, and adapted to different roles within the SAI, including leadership, quality teams, and audit staff. Second, access to ready-to-use tools and templates would significantly ease the implementation burden. Developing risk assessment formats, monitoring checklists, and documentation frameworks from scratch can be resource-intensive. Having customizable tools, based on good practices and already aligned with ISSAI 140, would save time and ensure greater consistency in early implementation stages. Third, we see high value in regional peer learning and mentoring. Structured exchanges—whether through learning groups, workshops, or shadowing opportunities—can help SAIs learn from one another’s experiences and solutions. The support provided through the IDI pilot was extremely helpful in this regard, and similar forms of guidance would be valuable moving forward. Finally, technical advisory support—especially in adapting ISSAI 140 to the national legal and

procedural context—can help ensure that implementation efforts are both aligned with the standard and realistically grounded in each SAI’s operating environment.

In sum, a combination of practical resources, capacity development, and regional collaboration would make the rollout more effective, especially for SAIs with limited internal capacity.

III. CLOSING REMARKS

Ms. Aulona Jani: Thank you all for your thoughtful questions and to our panelists for your clear and candid responses.

Distinguished guests, dear colleagues,
As we bring today’s session to a close, I would like to express my sincere thanks to all of you — for your attention, your thoughtful participation, and the spirit of collaboration that has defined our discussion. Throughout this morning, we explored what it truly means to adopt a new approach to audit quality management.

We heard from IDI and SIGMA on how the revised ISSAI 140 is reshaping the foundations of quality—from a retrospective control mechanism to a proactive and integrated management system. We also had the privilege of learning from peers who have walked this path — from Bosnia and Herzegovina, Azerbaijan, and our very own SAI Albania—each offering valuable insights from real implementation experiences.

As the moderator, I was especially inspired by the openness and shared purpose that came through in every exchange. It’s clear that while each SAI faces unique challenges, we are all navigating toward the same horizon: a more reliable, resilient, and credible audit function that serves the public interest. Let us leave this room with a renewed understanding that quality is not an end goal—it is an evolving mindset, a system, and above all, a responsibility that belongs to all of us.

PHOTOS















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Rruga "Abdi
Toptani" Nr.1 Tiranë



klsh.org.al



+355 4 2247294



klsh@klsh.org.al