



# INTERNATIONAL JOURNAL

— OF GOVERNMENT AUDITING —



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# INTERNATIONAL JOURNAL

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The *International Journal of Government Auditing* is published quarterly in Arabic, English, French, German and Spanish on behalf of the International Organization of Supreme Audit Institutions (INTOSAI). The *Journal*, which is an official organ of INTOSAI, is dedicated to the advancement of government auditing procedures and techniques. Opinions and beliefs expressed are those of individual contributors and do not necessarily reflect the views or policies of the organization.

The editors invite submissions of articles, special reports, and news items, which should be sent to the editorial offices at:

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E-mail: [intosaijournal@gao.gov](mailto:intosaijournal@gao.gov)

Online: <http://intosaijournal.org/our-submissions/journal-submission/>

Given the *Journal's* use as a teaching tool, articles most likely to be accepted are those that deal with pragmatic aspects of public sector auditing. These include case studies, ideas on new audit methodologies or details on audit training programs. Articles that deal primarily with theory would not be appropriate. Submission guidelines are located [here](#).

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# THIS ISSUE

4 Editorial

6 News in Brief

21 Special Contribution

*Supreme Audit Institutions: Game Changers in the Fight Against Corruption*

23 Feature Stories

*Leading By Example Creates Cultural Shift*

*Developing a Technologically Advanced Hotline to Combat Fraud*

*Combating Corruption by Promoting Transparency*

*The Fight Against Corruption: A Need for Energized Dialogue, Action*

32 Inside INTOSAI

38 Spotlight on Capacity Building

40 Spotlight on Science & Technology

FEATURE ARTICLE THEME: COMBATING CORRUPTION



*"The crisis has produced a keen sense of urgency, which has enabled corrupt behavior—calling for SAIs to demonstrate value by generating independent information, strengthening public trust and intensifying anti-corruption efforts."*

## COLLECTIVE ACTION AND LONG-TERM STRATEGIES: COMBATING CORRUPTION IN A POST-PANDEMIC WORLD

*by Jorge Bermúdez Soto, Comptroller General of the Republic of Chile and General Secretary of the Organization of Latin American and Caribbean Supreme Audit Institutions*

The COVID-19 pandemic has been a litmus test for Supreme Audit Institutions (SAIs). Across the globe, governments have generated sizable investments to provide health and social coverage. International organizations have quickly mobilized substantial funds to aid the neediest populations.

The crisis has produced a keen sense of urgency, which has enabled corrupt behavior—calling for SAIs to demonstrate value by generating independent information, strengthening public trust and intensifying anti-corruption efforts.

For the Office of the Comptroller General of the Republic of Chile, the nation's SAI, this crisis has been accompanied by a particular national context. Citizen protests during the latter months of 2019 have given rise to an unprecedented constituent process, a social and political environment that allowed SAI Chile to reflect on its role and how it responds to citizen demands for improved democracy.

Results of this exercise were subsequently published in the book, "Dismantling Corruption: Ideas to Strengthen Probity in Chile," which compiled main theoretical and institutional trends and included an analysis of citizen perceptions and attitudes toward the phenomenon of corruption. The study indicated 85% of those consulted believe "the Comptroller's

Office is the institution responsible for fighting corruption." While this statement recognizes the SAI's audit work, it also poses significant challenges: to work resolutely to meet the expectations of an increasingly demanding citizenry and continue researching methods to better detect and prevent corruption.

How can we respond to citizen demands to curb a phenomenon as dynamic and widespread as corruption? How can we control large financial flows with ever-tightening institutional budgets? To confront the new world context, SAIs will need to adopt more avant-garde and innovative positions.

Shifting from classic anti-corruption mechanisms based on isolated tools and reactive solutions to comprehensive and preventive initiatives that are grounded in a multi-systemic view of corruption is critical, and recognizing that integrity policies cannot come exclusively from the public sphere is a good starting point.

Linking state institutions with various stakeholders, as outlined in Sustainable Development Goal 17, is an indispensable element in devising efficient and effective policies aimed at strengthening integrity. Coordinated work between SAIs and academia, citizens, civil society organizations, and the private sector can provide new and better responses to combat corruption.

Following this paradigm, the Comptroller General's Office leads, encourages and supports continued participation in the United Nations Convention Against Corruption (UNCAC) Anti-Corruption Alliance—Chile, an unprecedented initiative bringing together more than 30 institutions from the public, private and civil society sectors committed to promoting anti-corruption initiatives.

This collective action has been recognized internationally for its contribution to strengthening integrity beyond the state sector.

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*"In this new, post-pandemic scenario, how can we respond to citizen demands to curb a phenomenon as dynamic and widespread as corruption?"*

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In addition to amplified collaboration, global changes as a result of the pandemic are shaping a novel scenario requiring SAIs to use a combination of adaptability and innovation. In this sense, SAIs cannot be paralyzed by the dynamism of society. Rather, advancing longer-term approaches that define new ways to overcome the new challenges will be key.

In constructing its long-term integrity strategy, SAI Chile considered three crucial components: complexity, duality and uncertainty.

Corruption is constantly transforming—into more sophisticated and complex forms—and transcends the governmental sphere in which SAIs traditionally operate. This emphasizes the need to incorporate integrity measures in a dual manner (in both the administrative and political realms), which can help broaden and advance the prevention of integrity violations. Equally as important is the need to ensure anti-corruption efforts are clear and well-defined yet flexible, particularly given the uncertainties surrounding the social, political and economic environments.

Corruption is not a new problem. However, it has taken on new forms. The tools currently available to face these new manifestations, as well as the complex, uncertain scenarios created by the COVID-19 pandemic, articulate a context that requires rapid and efficient SAI responses.

SAIs will need to abandon partial solutions that address corruption exclusively through regulations and sanctions and turn to long-term anti-corruption strategies that, through collaborative initiatives, unite the public and private sectors, academia and civil society in the search for more diverse, more useful measures.

As independent, objective agencies, SAIs are well-positioned to help foster a collective commitment to fight corruption, strengthen democracy and add value and benefits to the lives of citizens.

# NEWS FROM SAIs AROUND THE WORLD

## News from Austria

### ACA APPOINTS RONALD ROEDL AND SILKE STEINER TO NEW POSITIONS

Dr. Margit Kraker, President of the Austrian Court of Audit (ACA) and International Organization of Supreme Audit Institutions (INTOSAI) Secretary General, appointed a new Director General and new Head of the ACA's International Department/Director of the INTOSAI General Secretariat.



Ronald Roedl succeeds Viktor Cypris as Director General and Authorized Representative of the INTOSAI Secretary General.

Roedl studied business administration and public administration in Austria and New York (Syracuse University), and his prior experience includes managing, *inter alia*, the Austrian Federal Province of Styria Liaison Office with the European Union in Brussels, Belgium.

During his professional career, he has gained comprehensive knowledge in digital government and change management at the national and international levels.



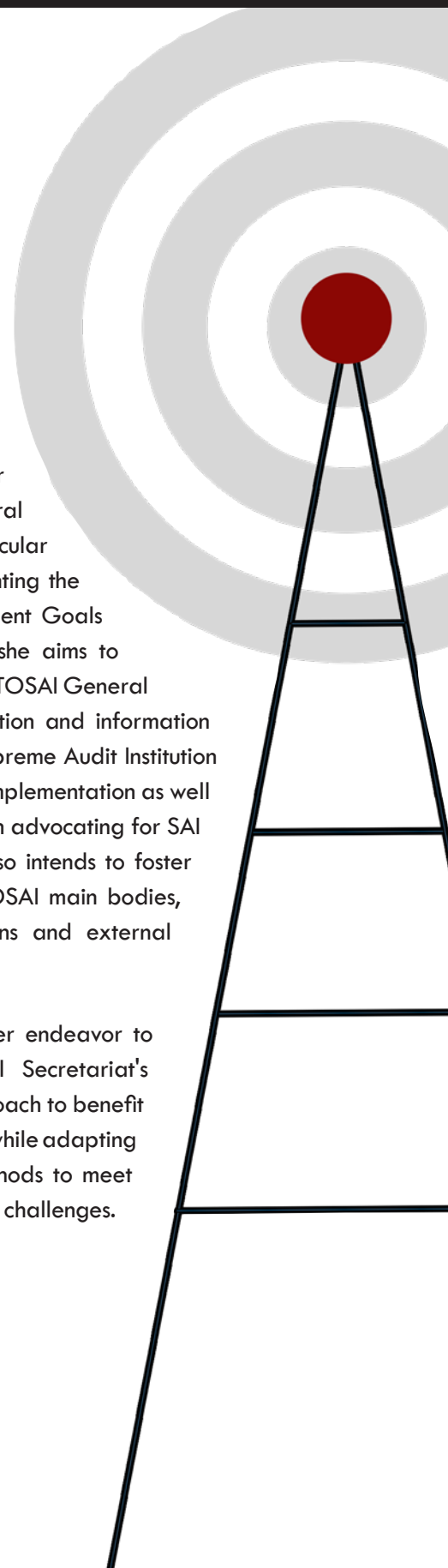
Silke Steiner succeeds Monika González-Koss as Head of the ACA's International Department and Director of the INTOSAI General Secretariat.

She studied law, international relations and public auditing in Austria and Bruges, Belgium (College of Europe) and before joining the ACA and INTOSAI General Secretariat seven years ago, she served, *inter alia*, at the European Commission in Brussels and the

Austrian Ministry of Foreign Affairs.

In recent years, Steiner participated in several ACA audits with a particular emphasis on implementing the Sustainable Development Goals (SDGs). In this spirit, she aims to further promote the INTOSAI General Secretariat's coordination and information function regarding Supreme Audit Institution contributions to SDG implementation as well as its supporting role in advocating for SAI independence. She also intends to foster dialogue among INTOSAI main bodies, Regional Organizations and external stakeholders.

Both Roedl and Steiner endeavor to continue the General Secretariat's service-oriented approach to benefit all INTOSAI members while adapting INTOSAI working methods to meet present and emerging challenges.



## News from Bosnia and Herzegovina



### TVRTKOVIĆ APPOINTED AUDITOR GENERAL OF SAI BOSNIA AND HERZEGOVINA

The Parliamentary Assembly of Bosnia and Herzegovina has appointed Mr. Hrvoje Tvrtković as the new Auditor General of the Supreme Audit Institution (SAI) of Bosnia and Herzegovina. Mr. Tvrtković formally assumed office on October 20, 2020, and will serve a seven-year term.

He brings extensive experience to his new position, as he has been with the SAI for almost 15 years. Since joining the SAI in 2006, he has served in various financial and performance auditing roles, including senior performance auditor-team leader and Head of the Performance Audit Department.

Contact [saibih@revizija.gov.ba](mailto:saibih@revizija.gov.ba) or visit the SAI's website at [www.revizija.gov.ba](http://www.revizija.gov.ba) for more information.

### SAI BOSNIA AND HERZEGOVINA CELEBRATES 20 YEARS OF SERVICE TO THE NATION

2020 marked SAI Bosnia and Herzegovina's 20th anniversary.

Despite facing notable challenges at the very beginning of its work—including a disorganized public administration system and absence of criteria (legal regulations, rules and operational procedures)—the SAI has achieved significant professional milestones after 20 years of national oversight, including:

- Remarkable contributions toward establishing a legislative framework for national institutions as well as the financial management and control system;
- Taking a more active approach in combating corruption, improving transparency and ensuring compliance in the use of public funds; and
- Publishing more than 1,200 audit reports.

Explore the SAI's past work and achievements in the recently published [20-year commemorative brochure](#).

AUDIT OFFICE OF THE  
INSTITUTIONS OF BOSNIA AND HERZEGOVINA  
2000 - 2020

**20**  
YEARS  
supporting the work  
of the Institutions of  
Bosnia and Herzegovina

## News from South Africa



### **TSAKANI MALULEKE APPOINTED AUDITOR GENERAL OF SOUTH AFRICA**

Tsakani Maluleke was appointed Auditor General of South Africa for a non-renewable 7-year term on December 1, 2020. Confirmed by President Cyril Ramaphosa, Maluleke is the first woman to hold this position in the organization's history.

Maluleke has helped shape the office as Deputy Auditor General since 2014 and succeeds Kimi Makwetu, who passed away on November 11, 2020.

An inspirational, results-driven leader, she possesses more than 20 years of public and private sector experience in such areas as auditing, consulting, financial development and investment management.

Maluleke realized early on that she wanted to build a career in accountancy and earned a BCom (Accounting) in 1996 followed by a post-graduate diploma in accountancy in 1997.

She completed her articles at PricewaterhouseCoopers and has served on numerous boards and committees including Aberdare Cables, the Independent Regulatory Board for Auditors, Office of the Ombud for Financial Services Providers, Onelogix, Public Investments Corporation, and the South African Institute of Chartered Accountants, which she currently chairs.

An active contributor in growing and transforming the accountancy profession throughout her career, Maluleke has worked with such organizations as African Women Chartered Accountants, Association for the Advancement of Black Accountants of Southern Africa, Business Unity South Africa, and the Presidential Advisory Council on Black Economic Empowerment.



## News from Kosovo


**ZKA**

 ZYRA KOMBËTARE E AUDITIMIT  
 NACIONALNA KANCELARIJA REVIZIJE  
 NATIONAL AUDIT OFFICE

**17**  
 ANNIVERSARY


## NATIONAL AUDIT OFFICE CELEBRATES INTOSAI AND EUROSAI MEMBERSHIP, PLEDGES ACTIVE PARTICIPATION

The National Audit Office of Kosovo (KNAO) dates back to 2003. Though a relatively new organization in terms of age, the KNAO is considered one of the most credible national institutions by both local and international partners and remains committed to implementing constitutional and legal mandates with integrity and professionalism.

Determined to perform audit work independently, the KNAO pays special attention to continuous development in line with international standards and good audit practices and has experienced considerable professional growth since its inception.

Located in the nation's capital of Prishtina, the KNAO is comprised of 171 staff members who perform 130 audits annually. While financial and compliance audits represent the largest portion of audit work, the KNAO appreciates the great potential of conducting performance audits and seeks to contribute to the increasing trend.

2020 was a challenging year for all. Despite the difficulties arising from the global pandemic, the KNAO has continued implementing plans aimed at institutional growth. The KNAO

recently launched a tailored audit management system that covers all audit processes. It is a far-reaching change in daily work and is expected to contribute to operational efficiency and effectiveness by improving audit data management and increasing audit product quality.

At the same time, the KNAO continues to review and update financial and compliance audit methodologies to better align with International Standards of Supreme Audit Institutions.

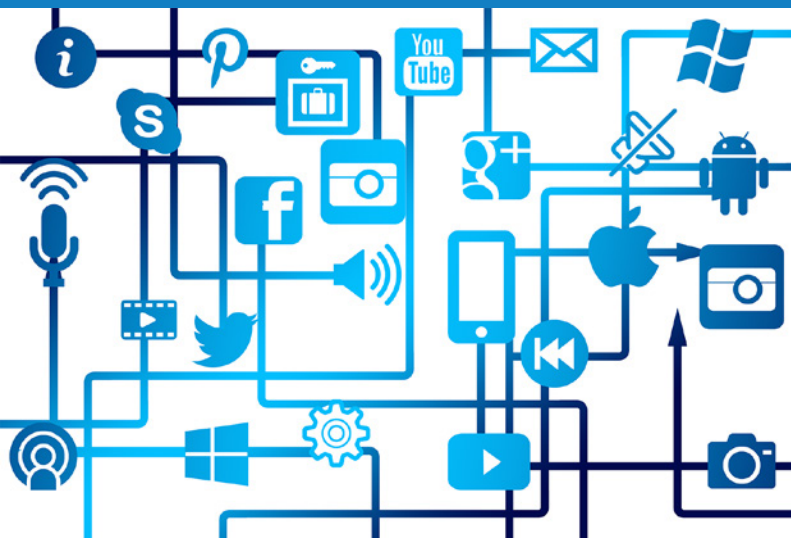
Last year also included valuable partnership milestones—the KNAO became a member of the International Organization of Supreme Audit Institutions (INTOSAI) and the European Organization of Supreme Audit Institutions (EUROSAI).

INTOSAI and EUROSAI provide platforms for Supreme Audit Institutions to exchange expertise and best practices that contribute to increased accountability and transparency and add value and benefits to the lives of citizens worldwide.

The KNAO considers INTOSAI and EUROSAI membership a professional commitment and opportunity. Pledging active participation, the KNAO is eager to share experiences with the global accountability community.

The KNAO looks forward to 2021 with hope, believing it will be regarded as a year of hard work in restoring normalcy and rebuilding national economies.

## News from Canada



### OFFICE OF THE AUDITOR GENERAL STUDIES SOCIAL MEDIA IMPACT ON AUDIT REPORT REACH

by Vincent Frigon, Office of the Auditor General of Canada

Good stakeholder communication is important to the success of any Supreme Audit Institution (SAI), and Social Media (SM) is a communication tool that can significantly improve engagement and increase audit report impact by reaching relevant audiences, including elected officials, journalists and interest groups.

How good are we at reaching these key audiences? What are some effective strategies? What resources are needed? Answers to these questions are often elusive due to challenges in isolating the impact of SM campaigns from that of other communication mechanisms, such as news releases and press conferences.

The Office of the Auditor General of Canada (OAG) tables performance audit reports in Canadian Parliament on pre-determined days and generally includes the fall and spring reports of both the Auditor General and Commissioner of the Environment and Sustainable Development.

The OAG recently analyzed results from SM campaigns for audit report tablings spanning an estimated two and a half years and compared the results to press coverage

indicators. Although more research is necessary, pilot data indicate SM campaigns make a major contribution to audit report impact primarily by raising stakeholder awareness.

While each SAI is different (and what works for one may not work for another), this research can, at a minimum, energize dialogue on employing SM to increase audit impact.

#### Methodology

OAG performance audit report tablings to the Canadian Parliament typically include a media lock-up, news release and press conference.

The OAG monitors press coverage (from a traditional media perspective) as a way to measure reach. Similarly, the OAG monitors SM messages posted on tabling days to assess reach and engagement, including the number of clicked links to view publicly available reports.

In the period analyzed, May 2018–October 2020, up to four employees were working regularly on Twitter-specific social media campaigns that resulted in 4–15 tweets (in both English and French) per tabling.

The OAG examined the number of clicks on Twitter and the number of articles published in traditional media within a 24-hour period after tabling the reports.

Indicators for measuring media impact were defined:

- *Poor Impact*: fewer than 100 clicks or fewer than 50 articles;
- *Good Impact*: 100–199 clicks or 51–149 articles; and
- *Strong Impact*: 200+ clicks or 150+ articles.

Data were obtained through Hootsuite for social media and Newsdesk (a government-based database of news articles) for press coverage.

#### The Findings

Indicators are far from perfect, as press coverage depends largely on competing news stories. This variable makes it impossible to determine, with complete certainty, major factors that can be enhanced—is it the audit report topic,

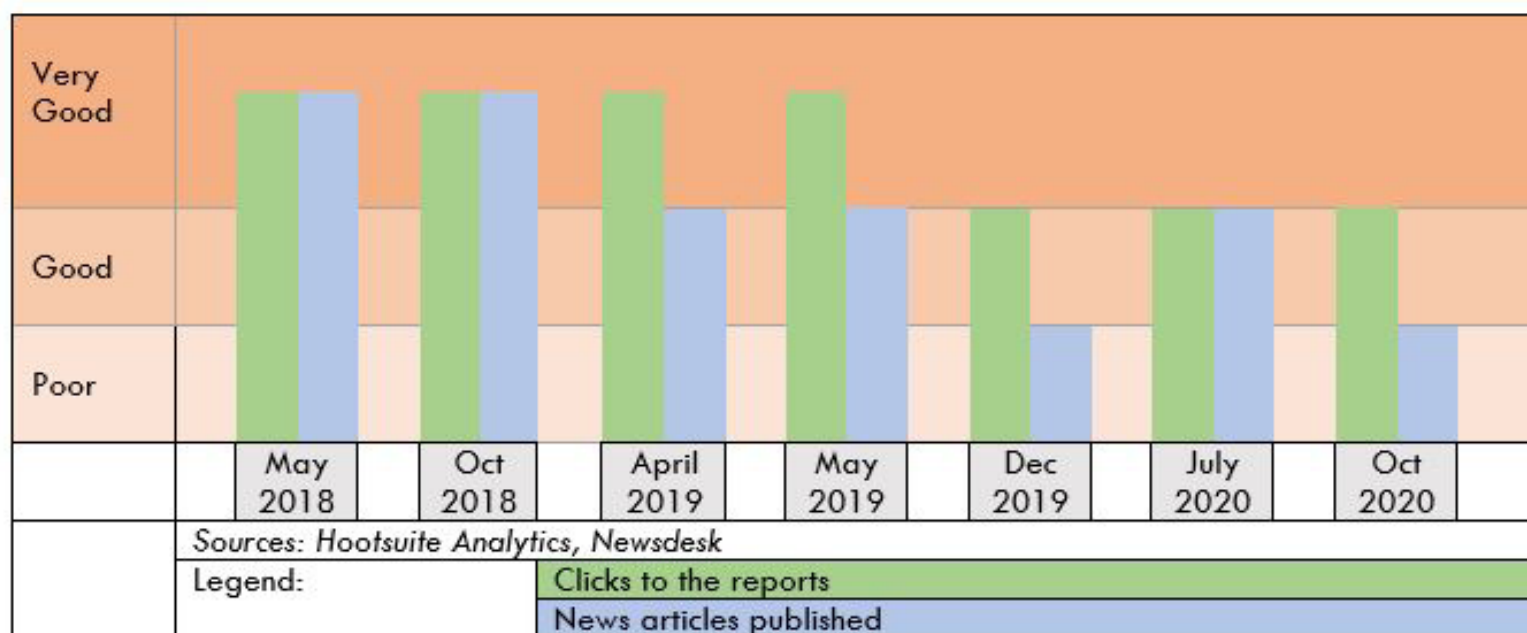


Table 1: Impact of social media and traditional media on tabling days, 2018-2020

better communication with traditional media, more effective social media messaging, or a lack of competing news?

As Table 1 demonstrates, when press coverage was poor, the number of clicks remained at a “good” level of impact. SM trends were comparable. When traditional media coverage was “good,” SM impact was as strong, if not stronger. This implies SM campaigns may have a substantial impact on audit report reach.

Contrary to traditional media coverage (where results are quite unpredictable), SM results appear to be predictable and constant. This may be explained by traditional media coverage being affected by competing news on tabling days. With social media, users decide what to view based on individual interests, which provides an opportunity for SM managers, who can prepare campaigns based on (more predictable) stakeholder interests.

Pilot data suggest posting messages on a consistent basis represents a better long-term strategy (rather than posting solely around tabling periods), as users tend to prefer

regular engagements and authentic interactions—where the possibility of commenting and feedback is high.

This, of course, represents a real challenge for many SAIs, which are inclined to communicate in a more unidirectional mode. Bidirectional communications, combined with regular SM posting, also requires dedicated resources, a capacity to adapt to new situations, and an ability to provide quick responses.

More research and experimentation is needed to determine the most effective resource configurations, strategies and incentives.

While dissimilarities in media and parliamentary systems, connectivity, and legislative mandates may lead to differing conclusions from one organization to another, sharing case studies and best practices can help SAIs amplify reach and increase audit report impact.

## News from Hungary



### SAO HUNGARY CELEBRATES TWO MAJOR MILESTONES

2020 was a special year for the State Audit Office (SAO) of Hungary, as the SAO celebrated two anniversaries—150 years since its foundation and 30 years of independent audit activities following its re-establishment in 1990.

The SAO was founded by the Hungarian National Assembly in 1870, but SAO operations were suspended in 1949, leaving the country without independent oversight. Nearly half a century later, the SAO was re-established (in parallel with the proclamation of the Third Hungarian Republic) and officially resumed operations on January 1, 1990.

Since then, SAO Hungary has continued transforming the organization—particularly during the past 10 years—by developing methodologies to meet present and future needs as well as rethinking and enhancing quality assurance and human resource management.

Most recently, the SAO emphasized advisory and knowledge sharing activities that more effectively support users of public funds. The SAO also implemented digitalization and

automation efforts that permeate processes, improve public resource management and adapt to emerging challenges.

These measures ensure the SAO continues seamless operations (even under the extraordinary working conditions created by the COVID-19 pandemic) and contribute to developing effective public finance and budgetary processes.

A traditional wreath-laying ceremony at the resting place of the SAO's first president and commemorative coins issued by the Hungarian Central Bank marked the anniversary.

### THE SAO EMBARKS ON CONSIDERABLE DIGITALIZATION INITIATIVE

SAO Hungary uses data for its core auditing and analysis tasks, and digitalization and automation continue to play major roles in requesting and classifying data.

The SAO has greatly enhanced digitalization, particularly in requesting data, by transitioning to full-electronic contact with auditees and accessing data using an internet-based request system. This transition has led to more effective and efficient information flow that also markedly increases objectivity and equal treatment.

While a large portion of documents remain in hard copy or scanned form, the SAO continues dedicating resources to convert materials into fully accessible electronic formats.

The SAO enhanced this process by incorporating specialized software that can analyze documents based on predefined criteria, such as specific keywords and phrases. The software also includes filtering capabilities that can quickly reveal whether the materials were received externally or generated internally, which facilitates determining document conformity with regulatory requirements.

## News from Finland

### NAO FINLAND USES DATA ANALYTICS TO REFORM FINANCIAL AUDITS



The National Audit Office (NAO) of Finland conducts financial, compliance performance, and fiscal policy audits. Prompted by data analytics opportunities, centralized implementation quality and efficiencies as well as a goal to provide better service to a wider variety of customers, NAO Finland extensively reformed financial audits over the past year.

The reform, which responds to changes in managing central government finances, aims to use new digital technologies more extensively. NAO Finland is excellently positioned to leverage data analytics to improve financial audits given its longstanding use within the organization coupled with an extremely high level of digitalization in the financial administration of Finland's central government.

In recent years, the Finnish central government introduced shared information systems for key processes—bookkeeping, order-to-debt recovery, personnel administration, purchase-to-payment and travel administration. Tasks, such as access rights management, are also performed on a centralized, uniform basis. Thus, from an audit perspective, all data analytics advances are available to auditors of central government finances.

Data analytics in financial auditing can provide numerous benefits. A methodology based on financial audit standards works well when conducting financial audits using data analytics, which allow for auditing several key assertions and testing of controls. Available datasets can be used to verify how effectively controls are functioning. The walk-through method proves useful when high-quality data exists. Analytical substantive auditing can be a fairly easy way to forecast central government finances, though, as the year of the COVID-19 pandemic has been highly exceptional, this method can only be used on a limited scale.

Data analytics also substantially reduce the time it takes to detect risk of abuses.

However, data analytics can only be used effectively when there is access to reliable and valid financial audit data. This can often be challenging, as constructing interfaces requires understanding (1) audit work objectives and methods, (2) the way in which data can be used, and (3) the structure of information systems.

In the near future, machine learning may provide ample opportunities for audit process development, as the data obtained from financial administration processes can reveal potential situations for error early on.

Using artificial intelligence in audits also remains a future development scenario. While the process may take years, the trend is inevitable.

## News from Lithuania



### NAOL IMPLEMENTS CREATIVE APPROACH TO TRADITIONAL SIGNALS CONFERENCE

Uncertain times require creative thinking and great flexibility, both of which helped facilitate a successful SIGNALS 2020 conference—an annual event hosted by the National Audit Office of Lithuania (NAOL)—as the global accountability community continues to adapt to the new normal. Motivated NAOL staff, coupled with supportive national and international partners, led to a virtual event that reached historic levels of participation.

Driven by global realities and NAOL priority areas, the event's agenda also reflected the Sustainable Development Goals, a focus of all SIGNALS conferences since its inception. SIGNALS 2020 highlighted the importance of data in making national decisions; role of education in closing the achievement gap and reducing the digital divide; and global and national efforts to reduce climate change.

The plenary session, which emphasized data relevance to public administration, included Lithuanian and international speakers on understanding, interpreting and basing decisions on objective, accurate data. Speakers at the parallel session devoted to education discussed approaches to address the

most pressing national education system issues—particularly those resulting from the COVID-19 pandemic—and what can be done to ensure a quality (digital) education for every child. The second parallel session focused on climate change and included dialogue on methods to slow global warming and its societal and economic impacts. The closing session summarized key challenges and tasks identified during the conference.

Broadcast online, SIGNALS 2020 reached more than 1,100 attendees worldwide, including representatives from the World Bank, Institute for Government, United Nations Educational, Scientific and Cultural Organization (UNESCO), Organisation for Economic Co-operation and Development (OECD), and the Vilnius University Institute of International Relations and Political Science. All SIGNALS 2020 sessions, presentations and discussions are available [here](#).

#### SIGNALS 2020 IN NUMBERS

- 7 hours of non-stop streaming
- >1,100 conference attendees from several INTOSAI regions
- 10 national and international speakers
- 28 participants in discussions, connecting & closing sessions

## News from Japan



President of the Board of Audit, Mr. Morita Yuji (left), and Prime Minister of Japan, Mr. Suga Yoshihide. Source: Official Website of the Prime Minister of Japan and His Cabinet

### BOARD OF AUDIT SUBMITS AUDIT REPORT FOR FISCAL YEAR 2019

Mr. Morita Yuji, President of the Board of Audit of Japan (the Board), submitted the annual Audit Report Fiscal Year 2019 to Prime Minister Suga Yoshihide on November 10, 2020.

The report, containing results on audits the Board conducted in 2019-2020, includes final accounts of annual expenditures and revenues of State and government-affiliated institutions for Fiscal Year 2019. The Cabinet then provided the report to the Diet (Japan's bicameral legislature) along with the final accounts of State expenditures and revenues. The report contains 248 audit cases resulting in nearly \$270 million USD in "improper amounts."\*

The Board has been continuously conducting agile, flexible audits and responding to issues in a timely and appropriate manner. In the Fiscal Year 2019 report, the Board noted issues on several matters, including:

- Securing the safety and well-being of citizens;
- Social security;

- Effect of project operations;
- Proper and fair systems and project operations;
- Proper budget execution and appropriate public accounts management;
- Environment and energy; and
- Information technology.

At any time throughout the year (even prior to the annual audit report), the Board may report to the Diet and the Cabinet on matters in which the Board has (1) presented its opinions, (2) demanded measures be taken, or (3) found it particularly necessary to report. In 2019-2020 there were three cases that fell into these categories. Likewise, the Board may conduct an audit of specific matters requested by the Diet under the Diet Act and report the results. The Board reported two such cases to the Diet in 2019-2020.

\*For the definition of "improper amounts," visit <https://www.jbaudit.go.jp/english/>. Contact the Board via email: [liaison@jbaudit.go.jp](mailto:liaison@jbaudit.go.jp) or web: <https://www.jbaudit.go.jp/english/> for additional information.

## News from Algeria



### COA ADOPTS FINANCIAL REGULATION DRAFT LAW REPORT

The Algerian Court of Accounts (COA) Programs and Reports Committee met in October 2020 under the chairmanship of the COA President, Mr. Abdelkader Benmarouf. During the meeting, the Evaluation Report on the 2018 Financial Regulation Preliminary Draft Law was adopted.

### COA CONTRIBUTES TO NUMEROUS HIGH-LEVEL EVENTS, INTERNATIONAL WEBINARS

A COA delegation chaired by Mr. Abdelkader Benmarouf, COA President, contributed to numerous high-level events, including the International Organization of Supreme Audit Institutions (INTOSAI) 74th Governing Board meeting and the Arab Organization of Supreme Audit Institutions 61st Executive Council meeting.

The COA also contributed to the:

- Extraordinary Meeting of the African Organization of Supreme Audit Institutions (AFROSAI) Governing Board in November 2020. Dialogue highlighted challenges posed by the pandemic in organizing the next General Assembly and included an update from the region's task force responsible for revising statutes and developing Strategic Plan 2021-2026.
- Event highlighting “Civil Society: A Key Partner in the Fight Against Corruption,” held by the Algerian national body

dedicated to preventing and fighting corruption. The event highlighted civil society's role in fighting corruption, promoting transparency, and enhancing good governance in consideration of national laws, the new draft constitution and regional and international conventions. Representatives from various public and private institutions, including teacher-researchers, students and journalists, attended.

COA delegates joined the INTOSAI Supervisory Committee on Emerging Issues webinars focusing on Supreme Audit Institution (SAI) openness and inclusiveness in emergency conditions and INTOSAI's online transition hosted by the Accounts Chamber of the Russian Federation in September and October 2020 and participated in a series of regional webinars dedicated to the Sharaka SDG3 parallel audit hosted by the Netherlands Court of Audit in September and November 2020 that emphasized communications and stakeholder relations.

### COA HOSTED VIRTUAL WORKSHOP ON EVALUATING PUBLIC POLICIES

In collaboration with ARABOSAI, the COA hosted a virtual workshop on the “Evaluation of Public Policies: INTOSAI Guidance (GUID) 9020” in December 2020. The workshop, designed to strengthen SAI organizational and professional capacities, incorporated engaging presentations and robust discussions on various aspects of public policy evaluation in accordance with GUID 9020, including methods, tools and implementation phases.



## News from Iran



### SAC CONTRIBUTES TO INTOSAI WGFACML ANNUAL MEETING

The Supreme Audit Court (SAC) of the Islamic Republic of Iran participated in the 14th annual International Organization of Supreme Audit Institutions (INTOSAI) Working Group on the Fight Against Corruption and Money Laundering (WGFACML) meeting to exchange public auditing technical knowledge and experience.

With representatives from more than 30 member Supreme Audit Institutions (SAIs) in attendance Mr. Hesham Badawy, President of SAI Egypt and WGFACML Chairman, opened the meeting, with included presentations from the SAIs of Austria, Brazil, Ecuador, and the United States.

The SAC contributed by sharing a presentation based on the previously published paper, “Money Laundering: Measures of the Islamic Republic of Iran and the Role of the Supreme Audit Court in the Fight against Corruption and Money Laundering.”

During the event, the WGFAMCL approved the 2020-2022 working plan and welcomed new members—SAIs of France, Philippines and Ukraine.

SAI Thailand will host the 2021 annual WGFAMCL meeting.



### SAC REPRESENTATIVES ATTEND ENVIRONMENTAL AUDIT & SUSTAINABLE DEVELOPMENT TRAINING PROGRAM

SAC representatives participated in the International Center for Environment Audit and Sustainable Development's (iCED) 8th International Training Program November 23-27, 2020.

Mr. Shri Girish Chandra Murmu, Comptroller and Auditor General (CAG) of India and Chairman of the INTOSAI Knowledge Sharing Committee, and Dr. Vivi Niemenmaa, Deputy Director at the National Audit Office of Finland, which chairs the INTOSAI Working Group on Environmental Audit (WGEA), welcomed participants to the week-long training event.

The sessions highlighted relevant and timely environmental auditing topics and included robust dialogue and high-level presentations from CAG staff.

Established by the CAG in 1979, iCED aims to strengthen accountability and governance in environmental auditing and sustainable development.

In previous years, iCED has facilitated international training for the INTOSAI WGEA and the INTOSAI Working Group on Extractive Industries.

## News from Peru

### SAI PERU USES INFORMATION TECHNOLOGY TO OPTIMIZE OVERSIGHT DURING PANDEMIC

The Supreme Audit Institution (SAI) of Peru is implementing initiatives to digitally transform and technologically innovate how it prevents and detects risks of corruption and functional misconduct.

Cross-referencing massive online information with various public databases, in combination with large-scale, Big Data analysis, SAI Peru has identified opportunities to improve public management and pinpoint irregularities—nationally, regionally and locally.

In 2020, online information largely focused on programs and activities carried out within the COVID-19 health emergency framework. The new measures helped reveal, for example, 12,371 civil and public servants allegedly received benefits (in the form of basic necessities and food packages) from local governments despite not being entitled to such assistance based on vulnerability criteria. Deceased beneficiaries receiving these packages were also identified.

The data also detected occurrences of beneficiaries falsely collecting economic subsidies, including government officials and their relatives, citizens earning payroll income, people residing abroad, and the deceased.

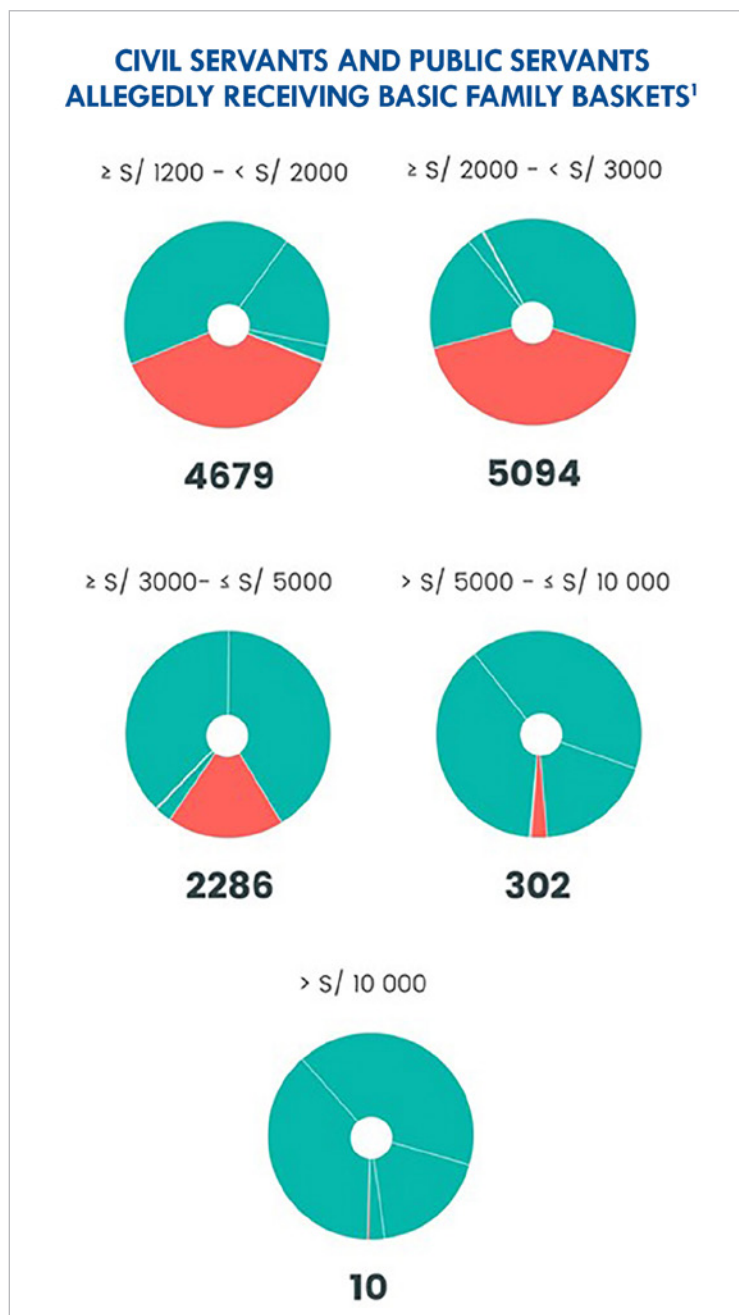
SAI Peru oversight efforts included analyzing cash transfer information to identify variables—such as socioeconomic levels, income, location and education—and cross-checking the information with the Reactiva Peru Program (bank loans possessing a State guarantee) beneficiaries.

The SAI also looked into the "Acquisition and Distribution of Computer and/or Electronic Devices" and "Internet Services Contracting for Educational Institutions Within the Framework of Preventive Actions for the Spread of COVID-19" processes to validate National Identity Document students as well as their parents or guardians.

SAI Peru's use of Big Data represents a qualitative leap—transitioning from sample evaluation to precise assessments that consider full data analyses.

Interventions will evolve from post-event to concurrent and will advance efforts toward timely pattern identification to more effectively predict irregular behaviors, enhance audit work and promote sustainable development.

For more information, visit [www.contraloria.gob.pe](http://www.contraloria.gob.pe).



Source: MEF Payroll Payment Control Module and Monthly Payment Worksheet, Transparency Platform Database in the Framework of the Health Emergency.

<sup>1</sup> Packages with basic necessities and food

## News from the Netherlands



### SHARAKA PROGRAM SUCCESSFULLY IMPLEMENTS VIRTUAL EXCHANGE

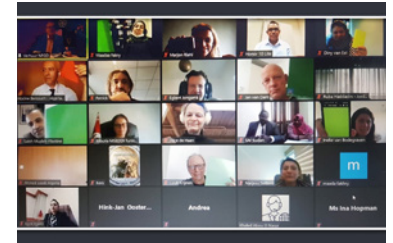
When the beginning of the COVID-19 pandemic hit in early 2020, the Netherlands Court of Audit (NCA) was working on a five-year “Sharaka” cooperative program with seven partner Supreme Audit Institutions (SAIs) from Algeria, Iraq, Jordan, Morocco, Palestine, Sudan and Tunisia. Sharaka means partnership in Arabic, and the program aspires to leverage cooperation to improve public administration operations, advance public service effectiveness, and strengthen public financial management—both in the Netherlands and in the partner countries.

The Sharaka program is comprised of various bilateral and regional projects and initiatives, the first of which began in

2017 with a kick-off meeting in the Hague (see picture to the left). Though planned programming ceased at the onset of the pandemic, all partner SAIs researched alternative ways to continue collaborative efforts.

A previously-planned four-day regional workshop to discuss an SDG 3 health-related audit was transformed into five two-hour webinars, where participants were able to actively contribute to discussions.

Engaging with one another and sharing ideas at the first virtual meeting (see picture to the right) was inspirational and proved useful in ensuring program progress.



In the post-COVID-19 era, the program intends to continue hosting virtual events but also looks forward to physically reconnecting once possible, as face-to-face contact and networking are not always replaceable.

Learn more about the Sharaka program [online](#) or contact NCA international affairs via email at [internationalaffairs@rekenkamer.nl](mailto:internationalaffairs@rekenkamer.nl).

## News from Tajikistan



### ACCOUNTS CHAMBER OPENS NEW LIBRARY TO COMMEMORATE NINTH ANNIVERSARY

The Accounts Chamber of the Republic of Tajikistan opened a new library on December 19, 2020, to commemorate its 9th Anniversary. The library currently contains 3,700 books in

three languages on such topics as auditing, politics, economics and law. The Accounts Chamber plans to continue adding to the collection. The material, available in both electronic and hard copy formats, provides Accounts Chamber staff with additional opportunities to improve knowledge and skills and enhance professional competencies and capacities.

2020 also marked the establishment of the Department for the Development of Information and Communication Technologies and the Department for Audit Quality Control.

As part of the Accounts Chamber Development Strategy 2019-2023, the departments aim to expand the Accounts Chamber’s scope of activities and amplify organizational capabilities to assess state budget revenue effectiveness.

## News from Thailand



### SAO CONTINUES CAPACITY BUILDING EFFORTS DURING PANDEMIC

Thailand was affected by the COVID-19 pandemic early on and has continuously imposed strict measures to prevent and control the spread of the virus at all levels. The State Audit Office (SAO) of the Kingdom of Thailand, an independent organization monitoring government spending of public funds and resources during the crisis, is also facing unprecedented challenges to which the SAO remains committed to responding in the most effective way.

The SAO is following government recommendations in adopting a “Work from Home” policy during the national lockdown; however, balancing staff safety and audit work continuity has been a challenge. To adjust to this challenge, the SAO employed the fullest use of technology to facilitate audits and other relevant tasks.

Social distancing led to increased use of communication technologies and platforms to continue necessary work virtually via online meetings to assign tasks, follow-up with executives and colleagues, and conduct remote audit work.

Human resources remains an important, valuable asset, and the SAO continues to address capacity building needs during the pandemic on multiple levels, including nurturing the auditors of the future.

In keeping with the Moscow Declaration, the SAO continues to seek ways to innovate and use data analytics to meet the ever-changing global trends affecting the audit profession.

The SAO also remains steadfast in enhancing capacity and competencies for senior-level staff through remote training opportunities that cover a broad range of topics, such as management, technology, work ethics, and adapting to unpredictable situations.

The SAO experienced positive results from these technological adaptations.

The SAO plans to continue using virtual technologies post-pandemic, particularly in combination with face-to-face interaction once the global situation improves, to create the most effective environment for future audit development.



# SUPREME AUDIT INSTITUTIONS: GAME CHANGERS IN THE FIGHT AGAINST CORRUPTION

*by Dr. Harib Saeed Al Amimi, President of the Supreme Audit Institution of the United Arab Emirates*

The phenomenon of corruption is no longer a concept—it is an international crime crossing borders; undermining political stability and peace; devastating social, economic and political structures; obstructing development plans; destroying trust in

governments; and emboldening terrorism. Such implications necessitate addressing corruption with more concern, interest and cooperation.

As public resource waste and abuse negatively affect lives of citizens, the International Organization of Supreme Audit Institutions (INTOSAI) continues to keep the fight against corruption high on its agenda, particularly as Supreme Audit Institutions (SAIs) represent game changers.

The Lima declaration, endorsed and approved more than 40 years ago, asserts public sector auditing aims to “reveal deviations from accepted standards and violations of the principles of legality, efficiency, effectiveness and economy of financial management early enough to make it possible to take corrective action in individual cases, to make those accountable accept responsibility, to obtain compensation, or

to take steps to prevent—or at least render more difficult—such breaches.” This aim has a two-fold emphasis on fighting corruption: prevention and detection.

SAIs, as oversight entities directly involved in combating fraud and corruption and maintaining integrity, accountability and transparency, can help deter public resource misuse and expose violations of laws, rules and regulations by ensuring revenues are appropriately received and spent.

Research shows more than half of INTOSAI member-SAIs are involved in fighting fraud and corruption on a national level. INTOSAI recognized the importance of combating corruption on the international stage and initiated cooperation with United Nation (UN)

agencies, including the UN Department of Economic and Social Affairs (UNDESA) and the UN Office on Drugs and Crime (UNODC).

Since 1971, INTOSAI and the UN have jointly sponsored symposia typically held biannually in Vienna. Through the exchange of subject-specific experiences and information in public sector auditing, the symposia contribute to research and methodology development in these areas.

The 1996 UN/INTOSAI symposium focused on “The Role of SAIs in Fighting Corruption and Mismanagement” and was crowned by a Memorandum of Understanding (MOU) between INTOSAI and UNODC.

Signed in July 2019, the MOU intends to serve governance in effective public financial management, risk mitigation, and best practice exploration.

The MOU marks a new chapter of collaboration between SAIs and Anti-corruption Authorities (ACAs) designed to position public sector auditors as change agents in advancing

accountability and integrity, improving operations, and establishing confidence among citizens and stakeholders.

This collaboration also enables SAIs to actively participate in global anti-corruption events, including the Conference of the State Parties (CoSP) to the United Nations Convention Against Corruption (UNCAC). In December 2019, SAI United Arab Emirates (UAE) hosted the 8th session of the CoSP UNCAC, which endorsed the Abu Dhabi Declaration—a

groundbreaking achievement calling for greater cooperation between SAIs and ACAs.

Additionally, SAI UAE leads a team of global experts responsible for researching and activating various means to execute the INTOSAI/ UNODC MOU. The team aspires

to globally emphasize the importance of SAIs in fighting corruption and use SAI expertise to work jointly with ACAs in implementing UNCAC initiatives, especially preventative measures.

SAIs, with specialized knowledge and experience in fighting corruption, are strategically positioned to introduce more systematic approaches to quell public fund mismanagement. When SAIs perform audit duties, they act on behalf of citizens with a goal to safeguard public funds and prevent fraud and corruption.

Combating corruption lies at the heart of SAI priorities and calls for agility, resilience and momentum in implementing anti-corruption initiatives, particularly as countries across the globe struggle to ensure government response measures effectively protect citizens during the COVID-19 pandemic and foster an environment that sustains global growth and development.

To learn more or get involved, contact Sumaya Abdulla Al Marzooqi, Head of International Relations, at [Sumaya.almarzooqi@saiuae.gov.ae](mailto:Sumaya.almarzooqi@saiuae.gov.ae) or [IR@saiuae.gov.ae](mailto:IR@saiuae.gov.ae).

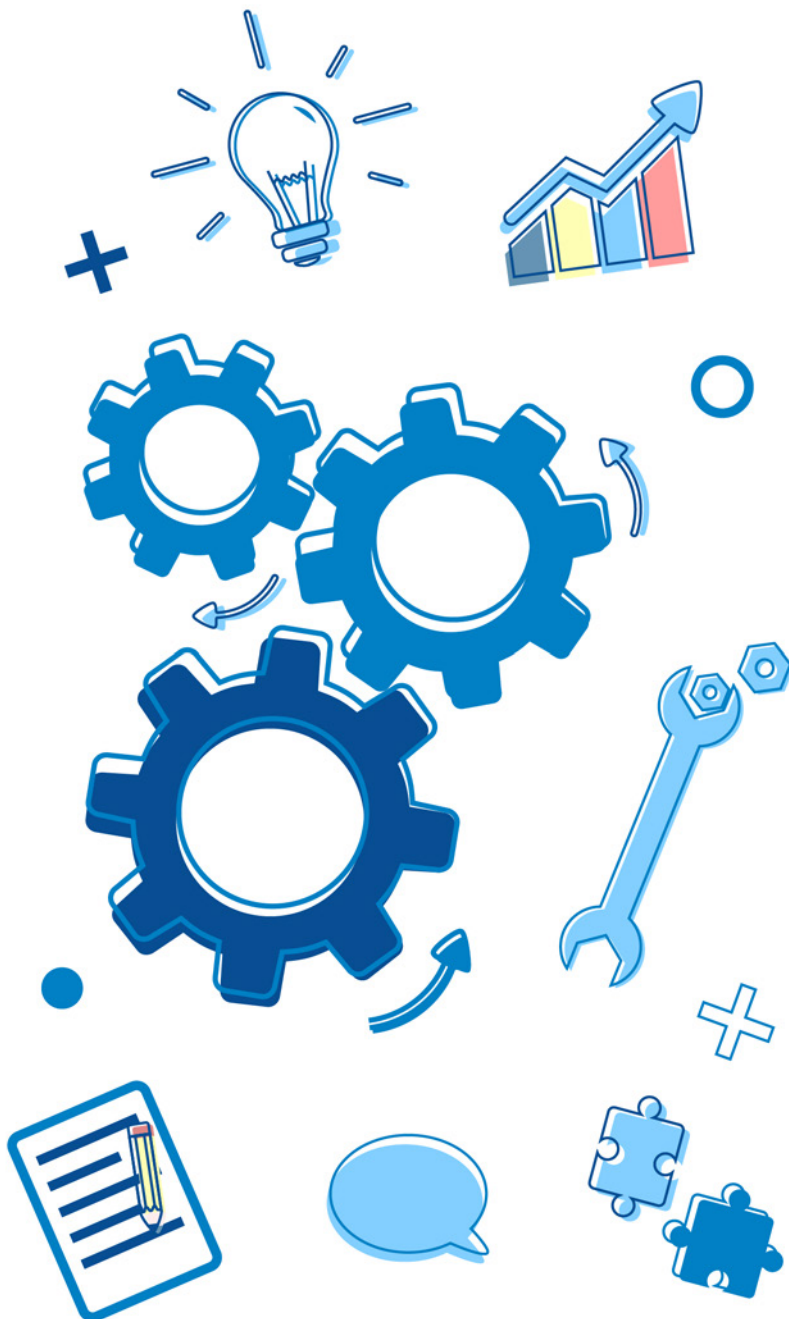
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*"When SAIs perform audit duties, they act on behalf of citizens with a goal to safeguard public funds and prevent fraud and corruption."*

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# LEADING BY EXAMPLE CREATES CULTURE SHIFT

*SAO Hungary Employs Mechanisms to Enhance Transparency, Accountability and Integrity*



by Gyula Zoltán Pulay, PhD, and Erzsébet Németh, PhD,  
State Audit Office of Hungary

Supreme Audit Institutions (SAIs) are called upon to lead by example, as stated in International Standards of Supreme Audit Institutions (ISSAI) 20, "Principles of Transparency and Accountability." ISSAI 20 indicates transparency, when consistently applied, is a powerful force in combating corruption, improving governance and promoting accountability.

Based on these principles, combined with its mission to support the accountability of public funds and contribute to good governance, the State Audit Office (SAO) of Hungary has employed several mechanisms over the years to enhance transparency and promote an integrity-based culture—nationally and internationally.

## INTEGRITY PROJECT

The SAO launched the "Integrity Project" in 2009 and developed a self-assessment survey to encourage a national culture of integrity and increase public sector transparency and accountability. The voluntary survey was distributed annually for eight years to all public entities. Initial project results, reported in the INTOSAI Journal *Summer 2015* edition, were positive, as responses allowed the SAO to more effectively focus on risks and establish controls to decrease them.

Over the project's eight-year span, significant progress was achieved in creating a cultural shift, with more organizations responding to the survey each year (participation tripled since the project's inception). The latest project results, available on the SAO [website](#), demonstrate numerous benefits in implementing self-assessment surveys—for SAIs and all public institutions—resulting in improved transparency, accountability and integrity. Benefits include:

**Addressing Risk Before an Audit.** The self-assessment survey is publicly available on the SAO website, which allows potential auditees to (1) test whether internal

regulations comply with legal requirements and (2) prepare for future audits by identifying and addressing risks detected by the survey.

**Establishing Benchmarks.** Data obtained from the surveys can act as motivating benchmarks for participants—helping to identify previously unknown risks, which can be highly useful for organizations committed to a particular matter, such as strengthening organizational integrity.

**Decreasing Risk by Monitoring Frequency, Improving Mitigation Efforts.** Self-assessment surveys can provide information on the frequency of surveyed items, including continued risks facing the agency. They also allow organizations to establish and monitor mitigation efforts—the organization can use the information to, for example, implement (and improve upon) changes to operations or policies.

**Effective Audit Organization.** Assessment data can be used by SAIs to organize audits more effectively. For example, most SAIs select audit topics and areas based on a risk analysis. Data obtained through public sector organization self-assessments offer useful information for risk-based audit selection, as the participants themselves are identifying risks and internal control weaknesses.

Implementing self-assessment surveys has some limitations, particularly regarding data validity and reliability, including:

**Response Bias.** There is a risk that organizations may provide biased responses—answering in ways that create a more favorable picture than reality. To address this potential limitation, SAIs can attempt to obtain a sufficiently large group of respondents to reduce the effect of response bias, which allows the results to be more easily compared across groups with less distortion.

**Statement Reliability.** Response bias makes it difficult to apply reliable statements to individual respondents, as using self assessments to analyze individuals may create counter-interest in survey participation and increase the likelihood of receiving false responses. However, self-assessment surveys can provide effective data to rank (relatively large group) responses in terms of frequency in examined characteristics, such as general risks facing public institutions.

**Lack of Applicability to Entire Population.**

By the very nature of voluntary surveys, all members of a group may not be represented. Generally, only committed organizations will complete the survey with honest, realistic responses. As a result, answers cannot be projected to the entire population. Data can still be used for risk analysis, since

risk-based selection requires reasonable assumptions on the existence of risks and control weaknesses. The data can also be used to attain a general understanding of participant characteristics.

**INTERNATIONAL INTEGRITY SEMINARS**

Through such knowledge sharing forums as integrity seminars, the SAO has enhanced

its ability to promote an integrity-based culture in national public administration while contributing to the global fight against corruption.

The Hungarian National Assembly endorsed the SAO's integrity seminar initiative as a means to support the International Organization of Supreme Audit Institutions (INTOSAI) and its member nations in 2013, and the SAO organized the first seminar shortly thereafter.

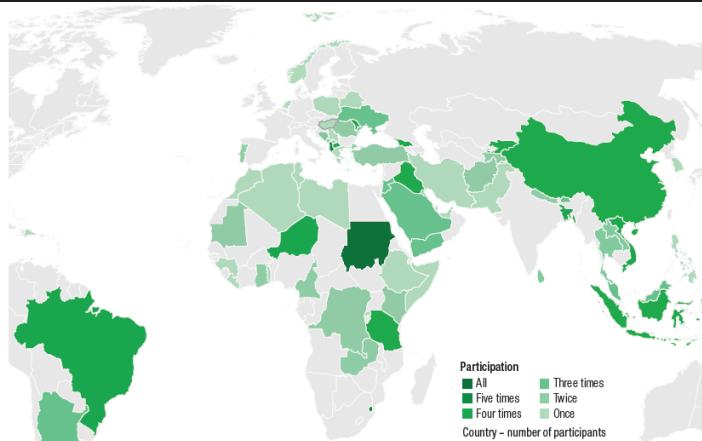
Developed through audits and survey experiences, the seminars provide an intercultural platform for professionals to share experiences—enabling participants to master concepts and methodology, learn from results and conclusions, and develop innovative solutions to support implementation.

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*"As recognized experts in public accountability, SAIs are in a unique position to encourage public institutions to complete self-assessment surveys."*

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Afghanistan - 2	Congo RDD - 2	Iran - 1	Mauritania - 1	Romania - 2	Timor-Leste - 1
Albania - 12	Curacao - 3	Iraq - 7	Moldova - 8	Saint Lucia 1	Togo - 1
Algeria - 1	Dominican Republic - 2	Jordan - 3	Montenegro - 2	Saudi Arabia - 3	Tunisia - 1
Argentina - 3	Kenya - 2	Korea - 2	Morocco - 1	Serbia - 4	Turkey - 2
Bangladesh - 6	El Salvador - 4	Kosovo - 2	Namibia - 2	Somalia - 1	Ukraine - 3
Belarus - 1	Ethiopia - 1	Kuwait - 2	Nepal - 2	Sri Lanka - 6	Vietnam - 4
Bhutan - 3	Gambia - 1	Kyrgyzstan - 2	Niger - 8	Sudan - 12	Yemen - 3
Bosnia and Herzegovina - 6	Georgia - 5	Laos - 5	Pakistan - 1	Swaziland - 5	Zambia - 2
Brazil - 5	Ghana - 2	Libya - 2	Philippines - 2	St. Kitts and Nevis - 2	
Cameroon - 2	Guinea - 1	North Macedonia - 6	Poland - 1	Tanzania - 4	
China - 4	Indonesia - 6	Malaysia - 3	Portugal - 2	Tajikistan - 2	
			Qatar - 2	Thailand - 5	

**6** Seminars      **66** Participating SAIs      **206** Auditors and experts trained

**Methodology.** In the past, Hungary, much like many nations, used traditional anti-corruption methods, such as investigating and convicting corrupt individuals, that achieved modest results. Alternatively, SAO integrity seminars take a preventative approach by fostering an environment that diminishes the occurrence of corrupt actions.

Seminars teach participants to build institutional capacity and demonstrate how to design and employ integrity controls to more effectively mitigate risks in public institutions.

Offering practical information, reliable data and innovative solutions through the lens of the SAO audit methodology, the seminars focus on such topics as assessing integrity; developing integrity surveys; devising and improving the integrity model; communicating honestly; leading ethically; and contracting and procuring with integrity.

Target participants are SAIs from developed and developing countries that have introduced, or plan to strengthen, integrity-based operations in public administration to fight corruption.

**Training Content.** Training aims to provide practical knowledge and emphasizes active participation through modules based on teamwork, situational exercises and case studies. Auditors take part in a brief integrity survey while learning more about assessing and prioritizing integrity risks, and workshops allow participants to present individual ideas and country-specific solutions as a means to share best practices.

The seminars go a step beyond typical learning sessions—delegates are asked to apply the knowledge gained by developing a project plan that includes a phased delivery approach in implementing an integrity survey.

**Impact.** Integrity seminars enhance international cooperation and allow the SAO to provide technical and methodological knowledge and assistance to SAIs in countries undergoing socio-economic transformation.

The integrity approach has continued gaining ground across the global accountability community. As of 2019, the SAO, through the integrity seminars, has trained 206 experts from 66 countries, and several participating SAIs have implemented best practices and learned concepts.

**CONCLUSION**

As recognized experts in public accountability, SAIs are in a unique position to encourage public institutions to adopt an integrity approach to fight corruption.

The most recent Integrity Project results demonstrate an ability to successfully introduce a culture of integrity and provides inspiration for other SAIs to implement similar initiatives.

SAO Hungary's international integrity seminars have been equally as fruitful, providing training for nations who seek to introduce the integrity approach while also supporting national and international strategic objectives—to enhance transparency, accountability and integrity.



## DEVELOPING A TECHNOLOGICALLY ADVANCED HOTLINE TO COMBAT FRAUD

by Juan Carlos Proaño Andrade, Auditor with the Office of the Comptroller General of Ecuador

To better administer public resources and fight corruption, the Office of the Comptroller General of Ecuador—the country's Supreme Audit Institution (SAI)—is working to develop an anonymous hotline through which employees and members of the public can securely report financial fraud at government entities. The hotline will use low-cost mobile devices and open source technology to receive and manage calls.

### **Fraud—Signs and Detection**

Signs of fraud within an organization include:

- Duplicate payments
- Systematic inventory mismatches
- Customer complaints
- Unusual cancellations of debts
- Unreasonable expenses or refunds
- Missing or excess cash
- Unauthorized or incorrectly recorded transactions
- Significant or unusual payments for unspecified services

While there are many ways in which an organization may initially detect signs of fraud, a 2018 study by the Association

of Certified Fraud Examiners (ACFE), the world's largest anti-fraud organization, identified receiving tips as the most common method for doing so.

The ACFE found, for example, of the fraud cases organizations reported between January 2016 and October 2017 in Latin America and the Caribbean, 49 percent were detected through tips. The next most common detection method in the region was internal audits (14 percent), and the method used least was information technology (1 percent).

Worldwide, telephone hotlines were, by far, the most popular way of reporting fraud.

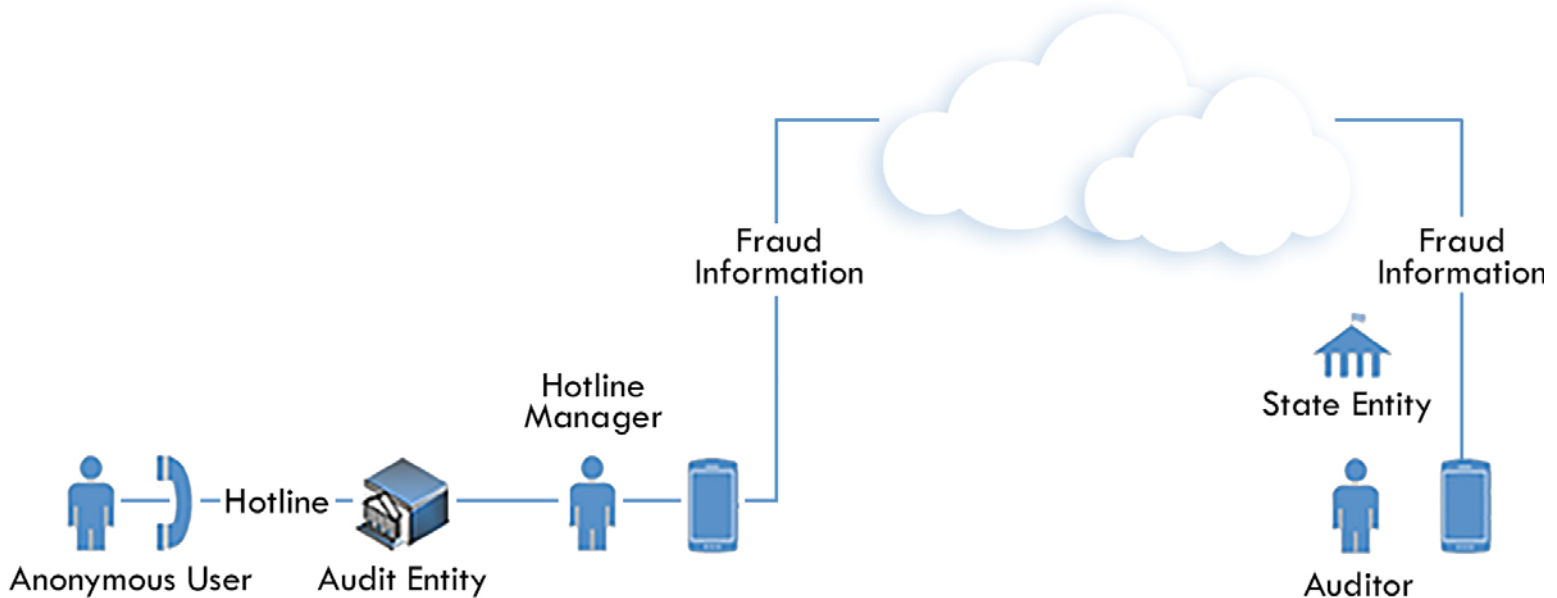
### **Actively Working to Detect Fraud Minimizes Losses**

According to the ACFE study, organizations not actively seeking fraud are more likely to be heavily impacted by it. The ACFE found that fraud detected through a deliberate search tended to be of shorter duration and involve lower median losses than those detected accidentally. Most of the organizations reporting fraud cases (63 percent) had hotlines in place, and fraud losses were 50 percent less at organizations with hotlines than at those without them.

### **How the Hotline Will Work**

In his article on best practices for implementing a hotline, Carlos Ayres (2015) argues that "an effective compliance program should include a mechanism for an organization's employees and others to report suspected or actual misconduct

## PROPOSED ANONYMOUS HOTLINE FOR RECEIVING FRAUD COMPLAINTS



or violations of company policies confidentially and without fear of reprisal.”

SAI Ecuador is developing its hotline in a manner that protects identities of complainants, many of whom may be employees of the organization. Fifty-three percent of fraud allegations come from employees, and the vast majority of findings result from these tips.

SAI Ecuador will designate a Hotline Manager to receive the calls on a mobile device and establish standard operating procedures—that comply with SAI and national legal frameworks—for investigating fraud allegations.

The hotline will work as follows:

- An anonymous complainant calls to report fraud.
- The conversation between the caller and Hotline Manager is recorded (with the caller’s knowledge). The voice of the caller is electronically masked.
- The Hotline Manager sends the recording to the auditor responsible for the government entity in question or to an internal audit team for analysis.

#### **Hotline Technology**

The hotline will use Raspberry PI to receive the phone call from the complainant and transfer the call to the Hotline Manager’s mobile device. An audio recording of the call will be stored in a database in Musical Instrument Digital Interface (MIDI) format.

The Hotline Manager will then use a mobile application developed in Android to send the recording of the call (with the complainant’s voice masked) to the appropriate parties, who will analyze the complaint.

#### **An Effective Way to Fight Fraud**

SAI Ecuador’s proposed anonymous fraud reporting hotline is a low-cost, high-impact means to combat corruption that can be emulated in other International Organization of Supreme Audit Institutions (INTOSAI) member countries. Moreover, implementing hotlines like this one may encourage countries to develop laws that promote financial fraud reporting within public entities and protect whistleblowers.

For a full list of references and more information on the technical configuration of SAI Ecuador’s proposed hotline, contact the author at [jcproano@contraloria.gob.ec](mailto:jcproano@contraloria.gob.ec).

# COMBATING CORRUPTION BY PROMOTING TRANSPARENCY

by Dr. Sutthi Suntharanurak, Pitikhun Nilthanom, Pattarawarin Boonchoo, Sutthida Pairoon, Pimlapas Somla & Phongsawat Maneewong, State Audit Office of the Kingdom of Thailand

Supreme Audit Institutions (SAIs) play a vital role in oversight by promoting transparency, verifying government account accuracy and reliability, evaluating spending compliance, assessing such spending's efficiency and effectiveness, and supporting the fight against corruption.

This article explores the relationship between transparency and factors relevant to its encouragement. For this study, data was obtained from multiple sources:

- [International Budget Partnership \(IBP\) Open Budget Survey \(OBS\)](#) measures a country's transparency by evaluating the budget process in three important areas—budget transparency, public participation and oversight. Some findings from the 2019 OBS indicated a transparent budgetary procedure is essential to monitor spending, project public outcomes, combat corruption and achieve the Sustainable Development Goals.
- [Corruption Perceptions Index \(CPI\)](#), published annually by [Transparency International](#), ranks countries based on perceptions of a country's public sector corruption. It is a composite index that illustrates corruption on a range from 0-100. The lower the score, the more corrupt the country is perceived to be.
- [World Press Freedom Index \(PFI\)](#) annually grades countries based on the [Reporters Without Borders](#) assessment of press freedom records,

TRANSPARENCY

CORRUPTION

which aims to reflect the degree of freedom journalists and news organizations have in each country. The higher the score, the less media freedom the country is perceived to possess.

## DATA ANALYSIS

Initial data considerations led to more in-depth analysis of the relationships among five variables:

- SAI Oversight (SAI);
- Legislative Oversight (LEG);
- Public Participation (PP);
- CPI scores; and
- PFI scores.

Simple regression modeling applied using specialized statistical software matched raw data—countries with complete data in all variables were kept while those missing information in some variables were removed.

Following the initial data evaluation phase, 111 countries remained for further analysis. Regression modeling and the stepwise technique were used to determine factors most likely to influence a SAI's strength in promoting transparency and those most likely to affect national transparency.

## FINDINGS

### **Factors Influencing SAI Strength in Promoting Transparency**

The study indicated three predictor variables that significantly contributed to a SAI's ability to promote transparency. These variables (from greatest to least influence) are legislative oversight level (LEG), public engagement (PP) in the budget process, and degree of national transparency (CPI).

### **Factors Affecting National Transparency**

Results revealed that PFI and SAI scores are considerably related to CPI scores. For example, the CPI score (country's

transparency level) was predicted to decrease as media freedom values increased. Data also showed the country's level of transparency was estimated to rise as SAI capabilities to promote transparency increased.

## CONCLUSION

The analysis, which aimed to prove and explain SAI roles in promoting transparency and combating corruption, confirmed SAIs are principal agencies in this endeavor and points to a continued emphasis on auditors to identify corrupt practices and fraud indicators.

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*"The analysis confirmed SAIs are principal agencies in promoting transparency and combating corruption and points to continued emphasis on auditors to identify corrupt practices and fraud indicators."*

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Findings illustrate SAI and legislative oversight and public participation in the budgetary process are key success factors in promoting transparency and curbing corruption.

Results strongly support the Moscow Declaration, which calls for SAIs to enhance the value of public auditing

by extending audit-based advice to parliament, government and public administration on important and strategic issues.

In the near-term, SAIs—as pillars of national integrity—can increase transparency and combat corruption by publicly reporting on audit outcomes and encouraging the use of data analytics and artificial intelligence to enhance innovation.

Additionally, SAIs can establish productive engagements with auditees and relevant institutions by cultivating, maintaining and enhancing relationships to help all stakeholders better understand audit reports and facilitate effective responses.

To learn more about this study and the relationship among audit work, legislative oversight, public participation in the budget process, national transparency, and media freedom, contact the authors at [sutthisun@gmail.com](mailto:sutthisun@gmail.com).

# THE FIGHT AGAINST CORRUPTION: A NEED FOR ENERGIZED DIALOGUE, ACTION

*by Sammer Ahmad, Director, Office of the Auditor General of Pakistan*

Corruption, the abuse of public authority or trust for private benefit—as defined by the International Organization of Supreme Audit Institutions (INTOSAI)—comes in various forms and behaviors, including bribery, embezzlement, extortion, fraud, kickbacks, pilferage, records falsification and theft.

Corruption impedes a country's development by weakening public institutions and generating distrust within society. The World Economic Forum estimates worldwide corruption costs \$2.6 trillion dollars annually.

The formula for enabling corrupt behavior typically includes a lack of accountability, which places auditors in a unique position to help combat corruption, particularly given roles in monitoring and reporting on organizational compliance.

According to the INTOSAI Development Initiative (IDI) 2014 Global Survey, many Supreme Audit Institutions (SAIs) “face considerable challenges in fulfilling mandates to prevent, detect and report on corruption.”

One such challenge: a general lack in dialogue on corruption as it relates to auditing. Research shows that many noteworthy textbooks dedicated to auditing (as a field of study) neglect to comprehensively examine corruption. Some reportedly do not incorporate the topic whatsoever. Further, a review of major financial scholarly works on auditing demonstrates that,



while auditors largely acknowledge a responsibility to detect material fraud, they remain reluctant to explicitly include corruption within the overarching concept of fraud—this perhaps due to differing definitions and the absence of clear concept linkages.

International Standards of Supreme Audit Institutions (ISSAI) 1240, “The Auditor’s Responsibilities Relating to Fraud in an Audit of Financial Statements,” maintains that public sector financial auditors are required to remain alert throughout an audit, specifically to the occurrence of fraud. International Standards on Auditing 240 (ISSAI 1240’s counterpart issued by the International Auditing and Assurance Standards Board) defines fraud and briefly mentions the term “kickbacks” as an example of asset misappropriation. Both standards offer no reference to the broader concept of corruption.

A potential consequence: shortfalls in discussing corruption or its forms or behaviors may result in deficient expectations for auditors in assessing the risks of corruption when planning and executing audits.

Another challenge: developing and implementing mechanisms to combat corruption. Theoretically, auditing can play two different roles in the fight against corruption: detection and prevention. These roles are partly interrelated, as detecting corruption can deter future instances. Preventing corruption can result in decreased requirements for detection.

Employing a combination of techniques would be optimal, and the global accountability community can help improve anti-corruption capabilities by:

- More extensively incorporating the concept of corruption throughout international standards;
- Providing formal authority that allows auditors to detect corruption and collaborate with investigative agencies;
- Ensuring auditors address both ends of corrupt activities (giver and receiver) by enhancing cooperative efforts;

- Developing better detection techniques, such as sourcing information through different types of auditors as well as the media;
- Designing and revising audit procedures to address risks of corruption, particularly as new instances are identified; and
- Establishing preventive anti-corruption measures that focus on the “system” of corruption, such as establishing policies that prohibit employees from soliciting or accepting gifts or favors from customers or suppliers; implementing a vendor pre-approval process; developing well-articulated and measurable performance indicators; and building capacities to monitor price trends and investigate significant price variations among bidders.

Though research indicates an overarching need to improve dialogue and action to more effectively combat corruption (in all its forms), INTOSAI has comprehensively addressed the fight against corruption through such actions as:

- Publishing ISSAI 5700, “Guideline for the Audit of Corruption Prevention”;
- Launching the INTOSAI Working Group on the Fight Against Corruption and Money Laundering (WGFACML); and
- Continuing a partnership with United Nations agencies.

Corruption hinders national development; damages public service performance, reputation and credibility; compromises service delivery; and causes hardship to citizens. SAIs are vital to the fight against corruption by reporting on and publicizing audit findings and contributing to a culture of transparency.

More effectively defining, integrating, and raising awareness about corruption by incorporating key concepts into auditing standards, encouraging the use of various anti-corruption oversight tools and techniques, and developing preventative measures, can improve SAI contributions to combat corruption and add value to governments and the citizens they serve.

# ▶ INSIDE INTOSAI



*Mutual Experience  
Benefits All*





## IN MEMORIAM: THEMBEKILE KIMI MAKWETU

Thembekile Kimi Makwetu, at the helm of the Auditor General of South Africa (AGSA)—as Deputy Auditor General and Auditor General—for 13 years and head of the International Organization of Supreme Audit Institutions (INTOSAI) Capacity Building Committee since 2013, passed away November 11, 2020.

Born in Cape Town, South Africa, Kimi completed a Social Sciences degree at the University of Cape Town in 1989. He later earned a BCompt Honours degree from the University of Natal in 1997.

Kimi began his career with Standard Bank followed by a position at Nampak, Africa's leading packaging company. He completed his articles at Deloitte, where he progressed to senior management before joining Liberty and Metropolitan

Life in Cape Town (Western Cape). He moved to Gauteng in 2003 to work at Liberty Life and returned to Deloitte as a director in the firm's forensic unit prior to his appointment as AGSA Deputy Auditor General.

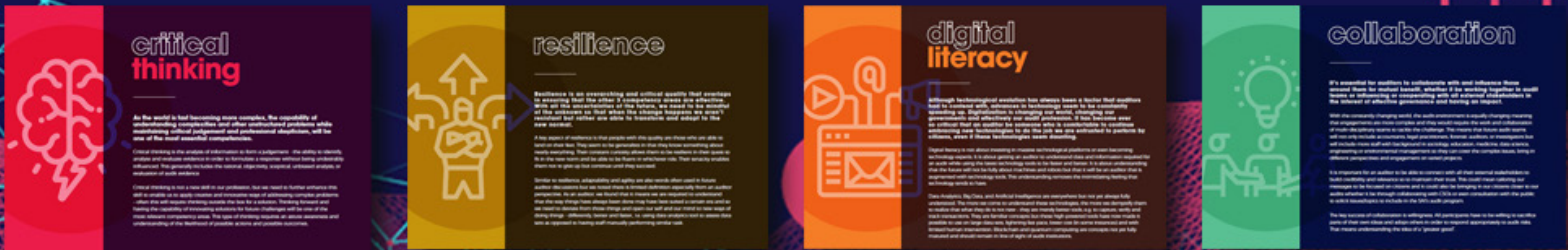
Former President of the Republic of South Africa, Jacob Zuma, officially appointed Kimi to the position of AGSA Auditor General on December 1, 2013, where he effectively and prestigiously served his office, country, region and the world.

The global accountability community lost an unforgettable leader who worked tirelessly to empower staff and citizens; strengthen transparency and good governance; promote ethical leadership and value-added activities; and cultivate a culture of integrity and accountability.

Rest in peace, Kimi.

# The future relevant

VALUE-ADDING AUDITOR



## CBC PAPER FOCUSES ON COMPETENCIES TO REMAIN RELEVANT, VALUE-ADDING

"Our world is changing—regional interconnectedness, digital transformation, renewed commitment to citizenry and pursuit of the Sustainable Development Goals (SDGs). The future is here."

The International Organization of Supreme Audit Institutions (INTOSAI) Capacity Building Committee published an enriching occasional paper, "The Future Relevant Value-Adding Auditor," that highlights essential competency areas—critical thinking, resilience, digital literacy, collaboration—required for public sector auditors to remain relevant and value-adding in the future.

The idea behind paper arose at the 2019 INTOSAI Congress in Moscow during a sidebar session on the SDGs that included

a robust discussion on the competencies required for auditors in the face of "unseen emerging challenges unavoidably shifting and altering the workforce."

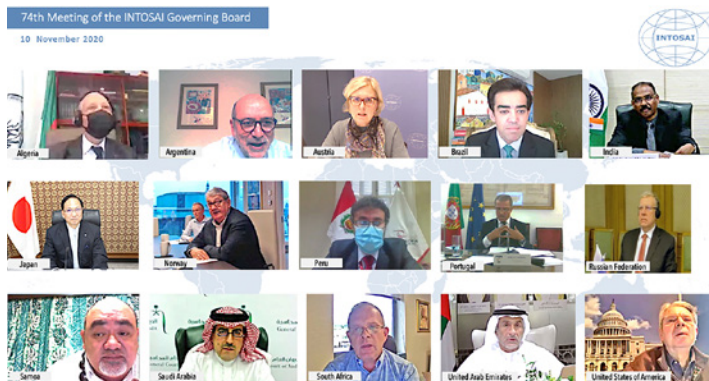
A culmination of developments prompted SAIs to reconsider capacities and make strategic shifts—the SDGs and an acute focus on national development goals; the recent pandemic and expectation of additional global emergencies; and the speed at which the digital revolution is moving.

From this base, it has become increasingly evident more is required to ensure SAIs develop future relevant and value adding auditors for an ever changing and unusual world.

Have Supreme Audit Institutions (SAIs) developed strategies to prepare for these emerging issues? Does the public sector audit profession possess the required skills to keep pace with the changes and continue making a difference to the lives of citizens—now and in the future?

The paper aims to be a catalyst for further dialogue—within INTOSAI and within individual SAIs—in ensuring public sector auditors are future proof.

# INTOSAI GENERAL SECRETARIAT HOLDS FIRST VIRTUAL GOVERNING BOARD, BIDS FAREWELL TO ESTEEMED COLLEAGUE



## INTOSAI HOLDS FIRST VIRTUAL GOVERNING BOARD

In these challenging times requiring innovative, flexible and forward-thinking solutions, the International Organization of Supreme Audit Institutions (INTOSAI) has proven, once again, it is a community that embraces opportunities provided by the digital realm.

Since the onset of the COVID-19 pandemic, INTOSAI bodies have hosted more than 50 meetings online. Moreover, many reported heightening visibility, increasing inclusiveness, and reaching a much broader audience than ever before through regular (virtual) gatherings—a bright spot considering the global pandemic's numerous restrictions and implications.

On November 10, 2020, the INTOSAI General Secretariat hosted the first virtual INTOSAI Governing Board meeting. Representatives from 33 Supreme Audit Institutions attended the meeting, which was chaired by the Accounts Chamber of the Russian Federation and moderated by the INTOSAI General Secretariat.

The meeting included simultaneous interpretation into six languages, and, despite geographical distances and time differences, Governing Board members reached important decisions on safeguarding INTOSAI operations during and post-pandemic and implementing progressive projects to shape the organization's future as well as capacity building projects and standard setting framework.

Governing Board members also approved the themes for INCOSAI XXIV to be held in Brazil in 2022—Theme I: "The Work of Supreme Audit Institutions in the Context of Public Calamities" and "Theme II: Global Voice, Global Outcome, Far Reaching Impact."

Adaptations and recommendations were made to INTOSAI meeting procedures that enable formal decision-making using a virtual format, and INTOSAI is planning for promising advancements in digitalized capacity building, education and knowledge sharing, including the launch of "INTOSAI Digital University."

For more information on Governing Board meeting outcomes and the latest INTOSAI news, visit the INTOSAI website at [www.intosai.org](http://www.intosai.org).



## FAREWELL TO MONIKA GONZÁLEZ-KOSS

After nearly 30 years of dedicated and passionate service to the Austrian Court of Audit and INTOSAI General Secretariat, Monika González-Koss has begun a well-deserved retirement.

As the primary point of contact and communication hub for all INTOSAI members and its external stakeholders, she has embodied INTOSAI's motto, "Mutual Experience Benefits All" like few other. She supported four Secretaries General and helped organize and thematically shape 10 INTOSAI Congresses, 15 United Nations/INTOSAI Symposia and 40 INTOSAI Governing Board meetings. She paved the way for INTOSAI's strategic development as Director of Strategic Planning, was an adamant ambassador for inclusion and equity, and always helped find common ground for diverging viewpoints.

The INTOSAI General Secretariat would like to thank her for her energy, enthusiasm and wholehearted commitment. We wish her the very best for the future, good health and many lovely and inspiring activities in this new chapter of her life.

# GUID 5250

## Guidance on the Audit of Public Debt

INTOSAI Guidances are issued by the International Organisation of Supreme Audit Institutions, INTOSAI, as part of the INTOSAI Framework of Professional Pronouncements. For more information visit [www.issai.org](http://www.issai.org)

# INTOSAI APPROVES PUBLIC DEBT AUDITING GUIDANCE

The International Organization of Supreme Audit Institutions (INTOSAI) approved Guidance (GUID) 5250, “Guidance on the Audit of Public Debt,” at the November 2020 INTOSAI Governing Board meeting.

With 19 votes affirming the endorsement version, GUID 5250 became an official INTOSAI document and is now available in all INTOSAI languages.

A priority project for the INTOSAI Working Group on Public Debt (WGPD), GUID 5250 consolidates public debt-related provisions from previous International Standards for Supreme Audit Institutions (ISSAIs) and is aligned with ISSAI 100, “Fundamental Principles of Public Sector Auditing.”

GUID 5250 aims to effectively support INTOSAI goals and objectives to improve, develop and adopt audit guidance and contribute to independent, high-quality public debt audits.

The WGPD, led by the Philippines Commission on Audit, kicked off GUID 5250 preparations in August 2017. With four sub-task teams of 16 WGPD member-Supreme Audit Institutions (SAIs) led by the SAIs of Chile, India, Russia and the United States, GUID 5250 represents a key WGPD accomplishment.

Access the new GUID 5250 [here](#).

# EUROSAI IT WORKING GROUP: SUPPORTING THE “FUTURE AUDITOR”



Since its inception, the European Organization of Supreme Audit Institutions (EUROSAI) Information Technology (IT) Working Group (ITWG) has strived to provide a platform enabling European audit institutions to exchange good IT audit practices and effectively use IT in oversight work.

To achieve this, the ITWG has developed numerous mature, highly-valued projects, including IT Self-Assessments (ITSA), IT Audit Self-Assessments (ITASA), the intelligent database of e-government audits (CUBE), and Active IT Audit Manual (AITAM).

By collecting and synthesizing member practices, the ITWG has also contributed to developing global IT audit guidance and best practice documents.

The National Audit Office of Estonia (NAOE) assumed the ITWG chairmanship from the Supreme Audit Institution (SAI) of Poland in July 2020. The NAOE aims to build on this solid foundation and further strengthen synergies among members, particularly considering high-level IT capacities of European SAs.

In the spirit of the Moscow Declaration's call for SAs to “nurture auditors of the future,” the ITWG recently launched a new initiative—the Research and Training Hub—to explore innovative IT and IT audit practices and develop a curriculum for “future auditors” who are, ideally, IT savvy and capable of auditing modern technologies.

In developing the Research and Training Hub's curriculum, experience of academia and private sector, coupled with valuable input from ITWG members, will be merged into

courseware serving as a practical source of knowledge for auditors worldwide.

Evident by discussions held during the ITWG [e-seminar on digital skills](#) in November 2020, auditors cannot avoid IT questions in any domain—financial audits already have many IT audit traits, and data and IT themes are now (or will soon be) central in most performance audits. Such conditions indicate auditors need knowledge and training in the IT and IT Audit fields (some more comprehensively than others).

Proposed curriculum consists of different modules for both IT and non-IT auditors. Furthermore, various innovative methods and tools exist on which knowledge and practical cases can benefit audit practitioners, such as Extract, Transform, Load (ETL) to prepare data for audit; process mining to pinpoint bureaucracy bottlenecks; programming to analyze large datasets; and business analytics to create interactive “audit stories.”

Private sector training, which can be rather costly, generally lacks public domain background and examples. The Research and Training Hub bridges those gaps and is envisaged to become a free online education platform that is accessible to all auditors seeking to upgrade IT skills.

The NAOE, with its proven track record in implementing e-learning in environmental auditing (auditors across the globe have expressed appreciation for access to free, self-paced online courses), hopes to transfer this experience to the ITWG Research and Training Hub.

## CONNECT WITH THE ITWG



[www.euroesai-it.org](http://www.euroesai-it.org)



[@itwgeuroesai](https://twitter.com/itwgeuroesai)



[@euroesai-it-working-group](https://www.linkedin.com/company/euroesai-it-working-group)



# NEW TRENDS IN AUDIT WORK

*and the Future of Accountability*

by Jacek Mazur, Ph.D., Advisor to the President, Supreme Audit Office of Poland

## INTRODUCTION

The world is changing, and Supreme Audit Institutions (SAIs) are evolving. Over the last 20-30 years, SAIs—slowly and gradually—have been transforming working methods to better address external factors, such as changes in State and society. Identifying trends is a valuable undertaking that facilitates discussion, promotes idea exchange, and enhances global efforts.

Motivated by an audit conducted by the European Court of Auditors and based on research as well as discussions with members of the international audit community, key trends in international audit practices were presented in the article, “[Inspired by the ECA’s Audit—New Trends in the Works of Supreme Audit Institutions](#),” recently published in the “Kontrola Państwowa” issued by the SAI of Poland. This article provides a brief summary of the trends and shares insight into how they will shape the future of accountability.

**Improving Public Audit Guidance.** INTOSAI work on public audit guidance began more than 50 years ago. Though

progress has been made in recent years, there is still much to be done. In particular, international auditing standards do not express differences between public and private sector audits. For example, International Standards on Auditing (ISA), issued by the International Federation of Accountants (IFAC), are mandatory. While INTOSAI continues to systematize guidance and promote SAI adoption and implementation, the standards are non-binding. Many SAIs operate based on national legislations or self-established criteria.

**Employing Multi-annual Audit Strategies.** SAIs have increasingly devised and implemented strategic planning mechanisms since they were first introduced in the 1980s. At present, SAIs possessing various mandates, procedures and audit types are developing strategic plans. Despite such organizational and regional differences, the plans typically consider similar aspects, such as State operations, which tend to direct SAI work, audit standards, stakeholder cooperation, human resources, and internal organization and management.

In line with international guidance, it is recommended auditors select topics through the SAI’s strategic planning process—by analyzing potential subjects and conducting research

to identify risks. Normally, a SAI's strategy covers several years and considers public sector dynamics and changing priorities. This makes it difficult to plan performance audits years in advance. Thus, SAIs tend to formulate annual audit plans based on a multi-annual strategy coupled with annual risk assessments.

**Selecting Non-Routine Topics.** In general, public sector audits can be categorized into one or more of three main types: financial, compliance and performance audits. Performance auditing examines legislative and executive efficiency and effectiveness in preparing and implementing decisions and whether taxpayers or citizens have received value for money.

Audits on non-routine topics are steadily on the rise, many of which are politically sensitive given possible connections to government-prioritized public programs. While it is essential that SAIs exercise caution as to not exceed mandates, audits addressing such areas as political party activities and voting acts, ethics in public administration, transparency and integrity, are receiving more attention.

The State Comptroller of Israel, for example, conducts audits based on established criteria of legality, economy, efficiency, compliance with good governance principles. The office also uses a moral integrity perspective. On this basis, the State Comptroller has, many times, informed parliament on cases of ethical value breaches, such as public bodies concluding contracts for goods or services for political reasons or to the benefit of family or friends.

**Informing the Public.** International guidance appeals for SAIs to keep the public informed, especially by publicizing audit reports and ensuring work processes, activities and products are transparent. Equally important, SAIs, consistent with mandates and governing legal frameworks, are suggested to make the information readily accessible and relevant.

A great deal of SAIs publicly issue annual work plans. Some go a step further by publishing information on audits that are not yet completed (both the Australian NAO and UK NAO update stakeholders on in-progress performance audits).

Several SAIs, including the SAIs of Estonia and Slovenia, supply summarized information on all audits included in the

annual work plan. Since 2007, the Supreme Audit Office of Poland publishes (usually in December) a detailed audit plan for the following year. In more recent years, this plan has included details on such components as audit topic, questions defining main audit objectives, audit type, key dates and the department leading the audit.

This transparency has led to an increased need for digital data, which has become progressively prevalent among SAIs. Many are developing analytical activities parallel to digitalizing oversight work, such as using big data analysis, leveraging electronic documentation supplied by auditees, and improving software to support audit proceedings.

**Expanding Citizen Participation and Stakeholder Engagement.** A commitment to the principle that, next to parliament and government, citizens are the main stakeholders, has become widespread among SAIs.

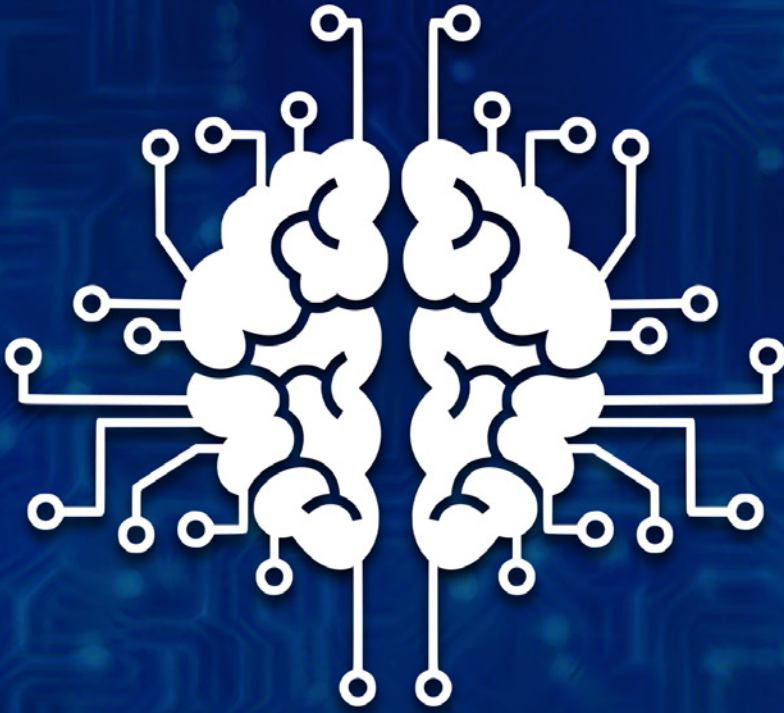
SAIs are increasingly including citizens (and other interested parties) in audit work by providing opportunities to submit information and comments, such as the Australian National Audit Office (NAO), which calls for citizens to contribute when conducting performance audits. Similarly, for an estimated 25% of its performance audits, the United Kingdom NAO encourages citizens and interested stakeholders to impart data (evidence).

SAIs are also conducting surveys during audits and inviting citizens and Civil Society Organizations (CSO) to provide information for potential inclusion in selected audits. A special example of citizen engagement hails from the Philippines Commission on Audit (COA), where some performance audits are carried out with participation from CSO representatives.

## CONCLUSION

This article presents a brief synopsis of recent trends in SAI practices—some applied by many, some rare, and some experimental—that may continue shaping the audit profession for years to come.

Access the full article, which presents a description of the ECA audit and SAI practice trends in greater detail, [online](#) or via [download](#). For more information, contact the author at [jacekmazur398@gmail.com](mailto:jacekmazur398@gmail.com).



# AUDITING MACHINE LEARNING ALGORITHMS

*A white paper for public auditors by  
the Supreme Audit Institutions of  
Finland, Germany, the Netherlands,  
Norway and the United Kingdom*

*by Jan Roar Beckstrom, Chief Data Scientist—The Innovation Lab, Office of the Auditor General of Norway*

Public authorities and government entities have already started developing and implementing Artificial Intelligence (AI) and Machine Learning (ML) algorithms to improve public services and reduce costs.

While prospective gains are immense, this technology also presents new challenges and risks, such as data security, the possibility of automated and institutionalized unequal treatment, and mass production of incorrect or discriminatory decisions.

As AI becomes more prevalent, it will become increasingly necessary for Supreme Audit Institutions (SAIs) to audit applications that are based on AI and ML algorithms—usually performed as special performance or compliance audit cases. Additionally, AI models tend to be embedded in broader Information Technology (IT) infrastructures, which signals a need to incorporate IT audit elements.

Currently, limited guidance exists for public auditors on how to audit AI and ML algorithms. To bridge this gap, the Office

of the Auditor General of Norway—together with data science colleagues from the SAIs of Finland, Germany, the Netherlands and the United Kingdom—developed “Auditing Machine Learning Algorithms: A White Paper for Public Auditors.”

The paper, available online at [www.auditingalgorithms.net](http://www.auditingalgorithms.net), summarizes key risks connected to using AI and ML in public services. Based on cumulative experience with AI audits and audits of other software development projects, the white paper also suggests an audit catalogue that includes methodological approaches for AI-application audits.

This article briefly touches on some of the key points.

## **Project Management & Governance of AI Systems**

Is highly specialized technical knowledge of AI models required to audit algorithms? Not necessarily.

Auditing an AI-system’s development has much in common with any project management audit. If a government agency has introduced AI in a specific setting, a very good and simple question may be, “Is there a clear goal on the desired



achievement?" Further, if external consultants implemented the AI system, "Is there a sustainable structure to maintain the model once the consultants leave?"

To alleviate the need for specialized skills, it is essential the agency have ample documentation of model development and personnel in place who understand the model.

### **Data Considerations**

Data quality is always important, but in AI modeling it is crucial. Simplified, biased data can lead to unintentional flawed results.

An example: if the same data is used to both build the model (during the training phase) and verify performance (during testing or validation), performance metrics will most likely be inflated. This "overfitting" leads to performance loss when used on new, unknown production data.

Another important data consideration relates to privacy and the use of personal data. The European Union instituted the General Data Protection Regulation (GDPR), which maintains data minimization (limiting the amount of personal information used to what is necessary to reach the relevant goal) as a central principle. In an AI setting, this equates to restricting the broad use of personal information when training or testing models. Though countries in other parts of the world will have varying regulations, minimizing the use of personal data to what is strictly essential is a good rule of thumb.

### **Model Development**

Transparent, well-documented model development facilitates reproducibility, which can be easily tested by an auditor with sufficient AI and ML knowledge conducting a documentation review.

Preferably, the documentation will include a well-structured and well-commented codebase (according to the coding language's standards), extensive records of hardware and

software used, and explanations as to how the model will be maintained once put into production.

It is equally important that the selected AI or ML algorithm be well-articulated, particularly if a hard-to-explain model is used. Training and testing the chosen model against other models can be useful for auditors in verifying the model that was chosen.

Fairness and equal treatment remain at the forefront of model development, as algorithmic bias can potentially lead to institutionalized discrimination.

If data used to build a model is slightly biased, a carelessly developed model may amplify such properties. Group-

based fairness requires ML models to treat different groups in a similar manner. Equity can be a bit more complex. For example, if the data sourced to train an AI model includes group-level demographic disparities, the model will learn these disparities, which can result in misleading predictions.

Constructing an AI model that is based on biased data can lead to distorted results, which, in turn, become the basis for automated decisions that may generate even greater prejudiced conclusions.

Using AI and ML in the public sector can provide enormous rewards. At the same time, there is real danger that failed deployment can damage democracy and the social fabric by potentially promoting discrimination and unequal treatment on a vast scale.

As AI and ML deployment intensifies, it will be imperative for public auditors to address the challenges posed by this progressively invasive technology.

"Auditing Machine Learning Algorithms: A White Paper for Public Auditors" aims to assist SAs in learning more about auditing AI and ML algorithms and helping auditors become better equipped to face the challenges.

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*"As AI and ML deployment intensifies, it will be imperative for public auditors to address the challenges posed by this progressively invasive technology."*

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