



INTERNATIONAL JOURNAL

— OF GOVERNMENT AUDITING —



Board of Editors

Margit Kraker, *President, Rechnungshof, Austria*
Sylvain Ricard, *Interim Auditor General, Canada*
Nejib Gtari, *Premier Président, Cour des Comptes, Tunisia*
Gene L. Dodaro, *Comptroller General, United States of America*
Manuel E. Galindo Ballesteros, *Comptroller General, Venezuela*

President

James-Christian Blockwood (U.S.A.)

Vice President

Michael Hix (U.S.A.)

Editor

Heather Santos (U.S.A.)

Special Contributors

Jan Roar Beckstrom (Norway)
Kristie Conserve (U.S.A.)
Laurel Voloder (U.S.A.)
Nelson Shack Yalta (Peru)

Administration and Operations

Peter Knopes (U.S.A.)
Michael Huskey (U.S.A.)

Associate Editors

AFROSAI Secretariat
ARABOSAI Secretariat
ASOSAI Secretariat
CAROSAI Secretariat
EUROSAI Secretariat
OLACEFS Secretariat
PASAI Secretariat
INTOSAI General Secretariat
Office of the Auditor General, Canada
Office of the Auditor General, Tunisia
Office of the Auditor General, Venezuela
U.S. Government Accountability Office

Winter 2020
Vol. 47, No. 1

The *International Journal of Government Auditing* is published quarterly in Arabic, English, French, German and Spanish on behalf of INTOSAI (International Organization of Supreme Audit Institutions). 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:

U.S. Government Accountability Office
441 G Street, NW, Room 7814
Washington, D.C. 20548
U.S.A.

(Phone: +1 202-512-4707; Fax: +1 202-512-4021;
E-mail: intosaijournal@gao.gov).

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 at <http://intosaijournal.org/our-submissions/>.

The *Journal* is distributed electronically to INTOSAI members and other interested parties at no cost. It is also available electronically at www.intosaijournal.org or www.intosai.org and by contacting the Journal at intosaijournal@gao.gov.

THIS ISSUE

4 Editorial

6 News in Brief

8 Feature Stories

Conducting Remote Audits Using Integrated Information Analysis Systems

Data, Auditing & Strategy: Unlocking Knowledge in Capitalizing on Opportunities, Addressing Challenges

12 Inside INTOSAI

18 Spotlight on Capacity Building

20 Spotlight on Science and Technology

SPECIAL THEME: SCIENCE AND TECHNOLOGY



"Technology is driving change in society, and different professions are rediscovering roles and aligning themselves with the technological direction of the future. The auditing profession cannot be immune to these effects."

THE FUTURE OF PUBLIC SECTOR AUDITING: LIVING IN TIMES OF CHANGE

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

Technology is driving change in society, and different professions are rediscovering roles and aligning themselves with the technological direction of the future.

The auditing profession cannot be immune to these effects. With fast-paced and disruptive advancement in science and technology, it is imperative the auditing profession keep pace, particularly if we, as Supreme Audit Institutions (SAIs), are to remain relevant.

Some technologies having great potential to shape human destiny are already here (earlier than we had perceived). Blockchain, Robotic Process Automation, Artificial Intelligence (AI) and Machine Learning are no longer merely topics of debate in research journals—practical applications have already been employed in the world of auditing. For example,

the United Arab Emirates (UAE) launched “Emirates Blockchain Strategy 2021” with an aim to transform 50 percent of government transactions onto a Blockchain platform.

As an international group of SAIs, we have realized the opportunities science and technology offer us to add value to our work. Many are taking full advantage of Computer-Aided Audit Tools and data analytics to increase population coverage and improve risk identification. SAIs are also using technology, such as Audit Management Information Systems, to enhance workflow.

Some emerging technologies are materially influencing audit work, such as Blockchain, which can help reduce efforts related to testing, verifying and authenticating detailed physical documents. Blockchain's decentralized, distributed universal ledger makes every transaction immutable and provides a high level of transaction assurance and accuracy.

Science and technology are progressively moving beyond auditor-led analytics. Robotic Process Automation has the potential to consume repetitive audit work and do so more accurately, reliably and tirelessly in a fraction of the time. This technology will allow auditors to work at a higher level and perform more meaningful work.

AI and Machine Learning are, perhaps, the two areas of science and technology having the greatest potential to determine the audit profession's direction and future. Machine Learning, a subset of AI, seeks to use machines and algorithms to perform intelligent work that mimics the intelligence of a human auditor. The future of audit will not be solely about robots Robotic Process Automation. Machines will learn from audit work and apply auditor intelligence to similar data.

AI will be leveraged to produce auditing algorithms that will replicate the collective wisdom of an army of auditing experts. This can lead to deeper analysis and insights on pre-fed criteria, as well as on the behavioral basis of huge, complex and multi-source datasets.

Will these developments in science and technology ultimately lead to robot auditors, completely replacing human auditors? Certainly not. However, in the not-too-distant future, such developments will likely augment tedious, repetitive audit work and present exciting opportunities.

Instead, public audit in the future will leverage technology. Auditor judgment and intelligent skepticism will increase and will reinforce the power of machines.

The future public auditor will increase focus on value-for-money audits and employ more creative and intelligent work extending beyond the boundaries of transactional audit and account certification.

Keeping pace with the transformation science and technology brings and positioning ourselves for future governance models also equates to improving current skills and acquiring new ones, improvising work processes, and enhancing hiring strategies.

Auditing how governments treat these developments—in policies, regulations and other relevant programs—will be critical. Emerging technologies hold substantial promise for

improving human life and economic competitiveness, but they also pose new risks.

With the potential to displace workers in some sectors, require new skills and adaptability to changing workforce needs, and exacerbate socioeconomic inequality, governments and SAs must better understand the broad promise, consequences and policy considerations resulting from these developments.

Our future success will be driven and powered by diverse technologies. It is time we keep pulse on developments in science and technology and how they can interface with our audit work in the public sector.

Recognizing this need, the International Organization of Supreme Audit Institutions (INTOSAI) Governing Board recently approved the new Working Group on Impact of Science and Technology on Auditing (WGISTA).

The inaugural WGISTA meeting will take place April 20-21, 2020, in Abu Dhabi, and the WGISTA Chair (UAE) and Vice Chair (USA) invite all INTOSAI member SAs and international organizations to join this group and contribute to the exciting work of tracking the latest

developments in science and technology that will affect audit work and understanding how to position ourselves to be more productive, relevant and value adding to national governance in the face of this ever-changing technological landscape.

To join the WGISTA, submit a written application to the WGISTA Chair, SAI UAE, at wgista@saiuae.gov.ae.

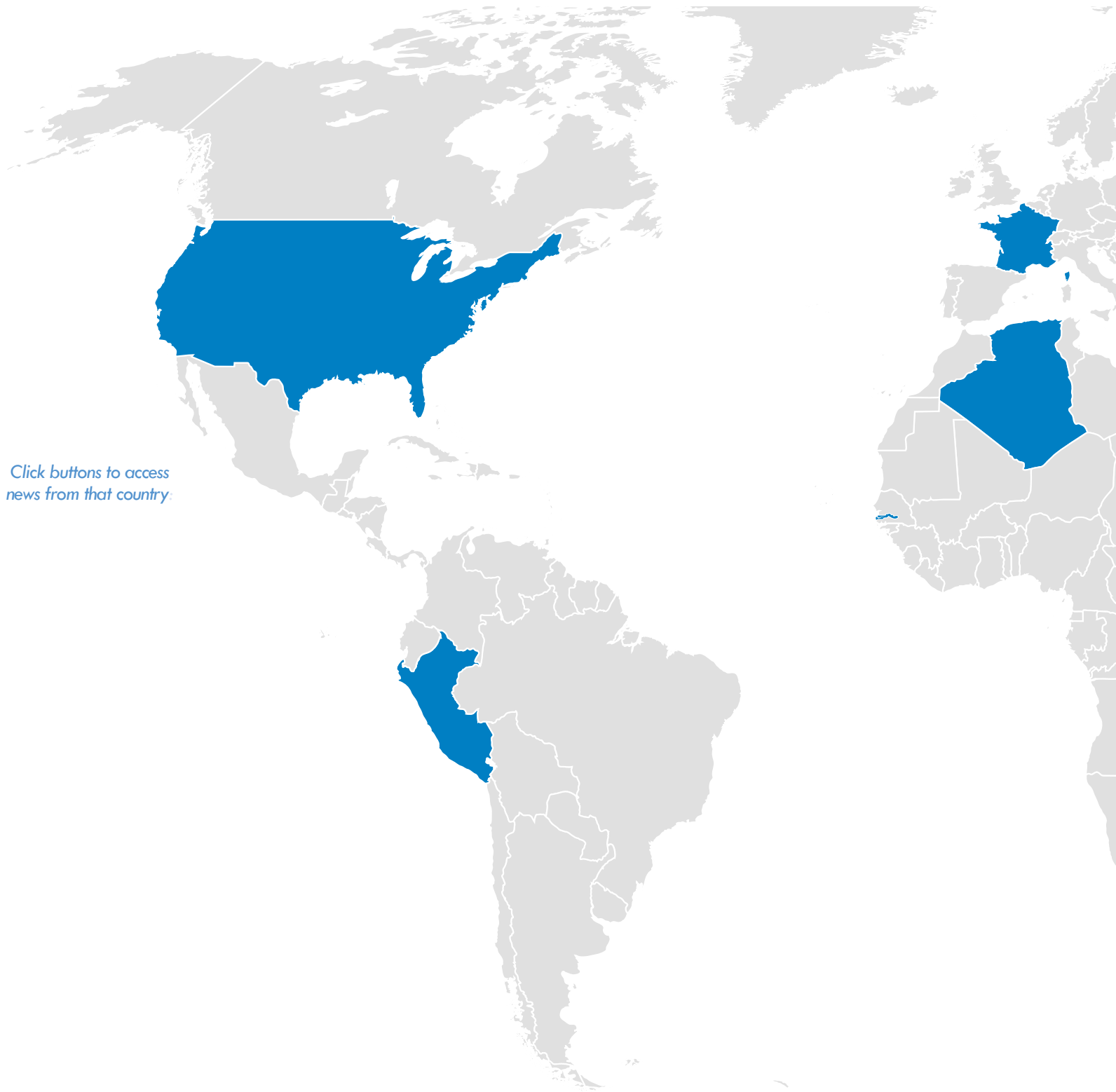
"Public audit in the future will leverage technology. Auditor judgment and intelligent skepticism will increase and will reinforce the power of machines."

SAVE THE DATE

**WGISTA INAUGURAL MEETING
ABU DHABI, UAE
APRIL 20-21, 2020**

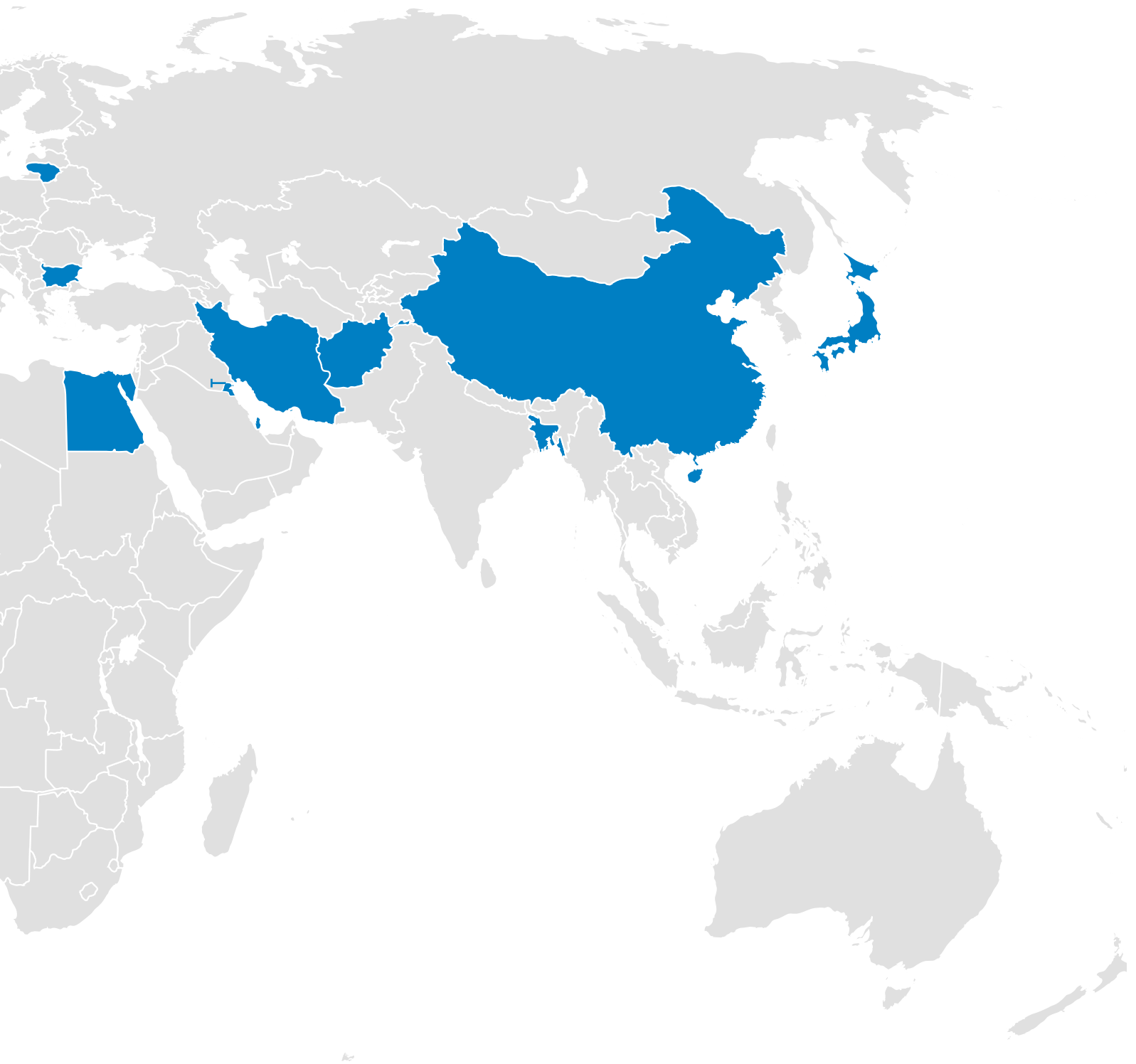
*For more information, contact the WGISTA
via email at: wgista@saiuae.gov.ae*

NEWS FROM AROUND THE WORLD

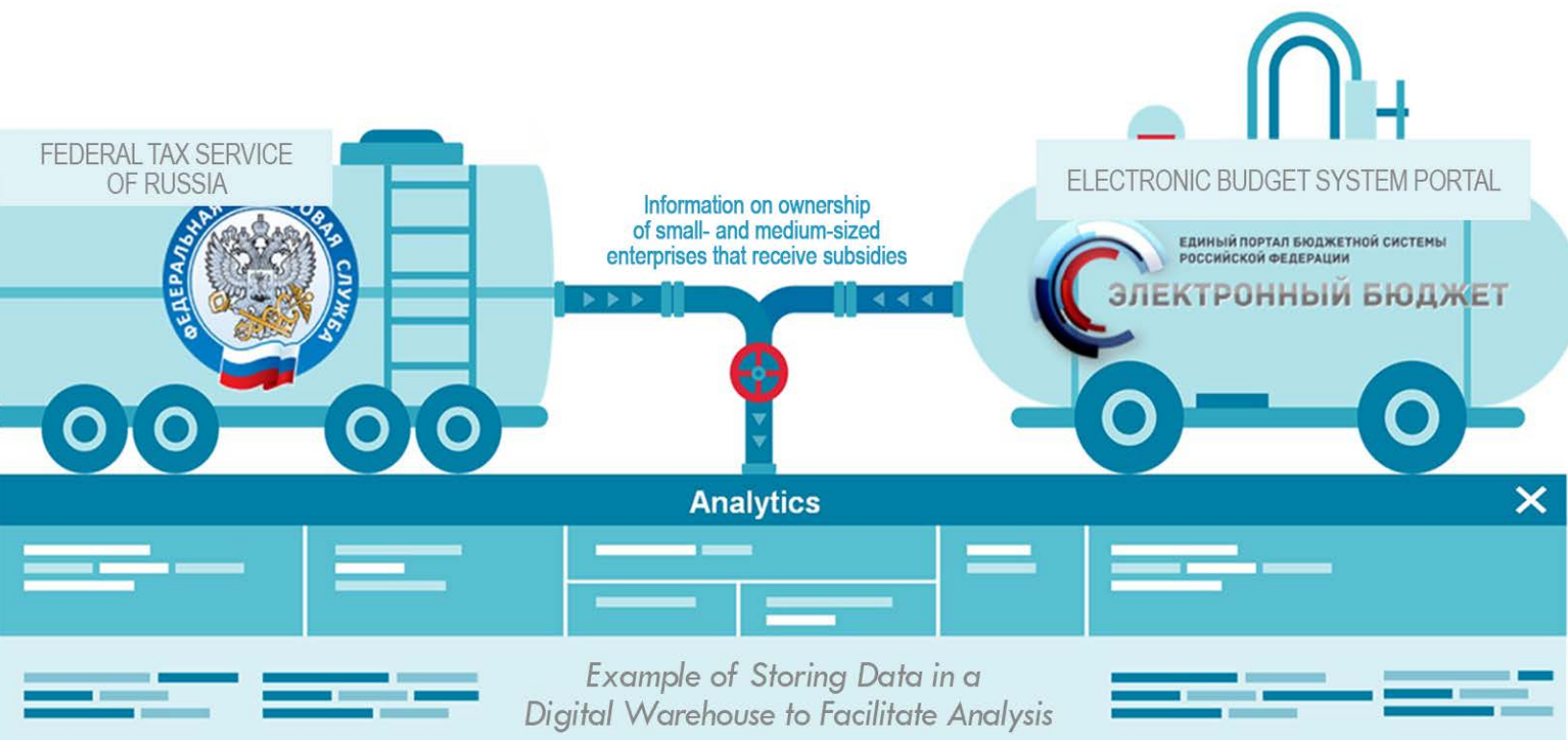


*Click buttons to access
news from that country.*

NEWS FROM AROUND THE WORLD



CONDUCTING REMOTE AUDITS USING INTEGRATED INFORMATION ANALYSIS SYSTEMS



by Mikhail Petrov, Director, Digital Transformation Department, Accounts Chamber of the Russian Federation; Ksenia Kostash, Head of Division, Digital Transformation Department, Accounts Chamber of the Russian Federation; and Aleksandr Chistoborodov, Deputy Director, Federal Center of Informatization, Accounts Chamber of the Russian Federation

The Accounts Chamber of the Russian Federation (Accounts Chamber), Russia's Supreme Audit Institution (SAI), recently began using an Information Analysis System (IAS) integrated with government databases in an effort to conduct remote audits. The SAI's experience demonstrates benefits of such an approach and identifies implementation requirements.

As government organizations increasingly use information technologies to achieve goals, audit agencies may consider remote audits as an alternative to traditional on-site audits. Several factors aid audit agencies in conducting remote audits, including computerization along with database access that is easier and more secure. However, remote audits may not always be feasible, particularly considering remote access to classified information.

If a remote audit is possible, the IAS provides numerous advantages, including the ability to more efficiently use resources by reducing the number of on-site inspections (or eliminating the need for them altogether). Hover over each icon below to learn more about advantages of the IAS.

Developing an Information Analysis System

In 2015, the Accounts Chamber developed and introduced the IAS to conduct remote audits based on 2013 federal law giving the SAI a mandate to directly access auditee information systems.

Since the IAS launch, the Accounts Chamber has enhanced the system's functionality to provide direct data access from more than 130 information systems in more than 30 state

agencies, including the Federal Treasury, Ministry of Finance, and Ministry of Digital Development, Communications and Mass Media.

The IAS, with its intuitive interface, allows remote auditors to quickly target and access comprehensive and reliable information, even during the early stages of the audit process. The system streamlines the process through the ability to view and analyze data and prepare reports. Auditors use IAS tools to analyze text to help identify procedural violations and attempted concealment in the public procurement process. With the help of this method, the Accounts Chamber detected more than 650 violations (10 percent of the total number of violations identified that year) in 2017.

Statistical analyses of large datasets also facilitates a risk-based approach to planning. By analyzing the number of violations committed by auditees, as well as the amount of funds allocated to them, auditors can identify entities most at risk of committing violations and then adjust audit focus accordingly.

Information Analysis Systems to Conduct Effective Remote Audits

The Accounts Chamber has found that effective remote audits require an appropriate legal framework, technical measures and system integration:

Legal Framework. There must be an established legal framework that (1) regulates procedures for conducting remote audits using information systems and (2) grants audit agencies the right to:

- Access audited entity databases at any time;
- Request detailed information on data related to the activities under consideration;
- Make data-related recommendations (both content and organization); and
- Request data be provided in certain formats.

Technical Measures. When conducting remote audits, it is recommended audit agencies:

- Use Internet security software when remotely accessing data;
- Ensure receipt of complete data from information systems of auditees; and
- Have the capacity to process and compare data in different formats.

Integrated Information Analysis System. When collecting audit data remotely, audit agencies can access different data sources, such as internal databases of audited entities; systems that aggregate and analyze data collected from different sources; and websites and publications available on the Internet. Accessing data from these sources requires an IAS equipped with a search engine to facilitate data search and sorting. To facilitate analysis, auditors can store the data in digital warehouses, which further enables criteria-based data searches, including source and time period.

Regularly updating relevant information is essential, and audit agencies can do so by:

- Tracking legal changes related to data content and format;
- Monitoring planned changes in information systems that could impact interfacing with the audit agency's IAS;
- Comparing the data received from different information systems to identify any irregularities to which auditors should pay attention; and
- Monitoring types of data analysis carried out within information systems for possible IAS incorporation.

As a data collection tool, the IAS is a single-platform source of analytical data that can be used to build data marts, aggregate data and provide prompt analysis and monitoring of various indicators contained in external information systems. Collecting information onto one platform and providing modern data analysis tools, remote audits can lead to additional cost reductions. Currently, more than 500 state organizations in Russia are connected to the automated information collection tool.

To implement this approach, the Accounts Chamber also aims to develop an automated "Digital Inspector" workplace designed to work with consolidated qualitative information on auditees in "single window" mode. A single entry point platform based on digitally stored data, Digital Inspector will also provide powerful risk-oriented analytical models and visual tools.

The Account Chamber's successful implementation of remote audits using an IAS suggests audit agencies in other countries may benefit from a similar approach. While it is important to continue improving remote audit methods and technologies, it is equally important to standardize remote audit approaches locally, regionally and internationally.

DATA, AUDITING AND STRATEGY



*Unlocking Knowledge in
Capitalizing on Opportunities,
Addressing Challenges*

by Koen Van der Bracht, Supreme Audit Institution of Belgium

Data has become a prominent auditing buzzword—as revealed through the increased use of the term throughout the global accountability community to include the International Organization of Supreme Audit Institutions (INTOSAI) and its member Supreme Audit Institutions (SAIs).

While data opens up new possibilities for SAIs, including interesting prospects for more risk-based audits, it also presents numerous conceptual, technical and organizational challenges. This article discusses some of the opportunities and challenges data brings and provides an overview of how SAI Belgium has addressed them.

Opportunities

Data availability and data analytics have affected audit—as a field and profession—particularly as financial process digitalization has brought new techniques that allow SAIs to audit 100% of transactions. This ability increases financial audit efficiency and allows auditors to differentiate between normal and anomalous transactions. Distinguishing anomalous transactions creates additional efficiencies, as auditors no longer need to audit a large sample that may (or may not) be representative.

Performance auditing traditionally focuses on determining program economy and efficiency. However, available data (and the means to more easily analyze it in large quantities) allows auditors to directly measure program effectiveness. For instance, when auditing a poverty reduction program, SAIs can now assess actual changes in poverty resulting from government intervention.

Challenges

Data proliferation and new techniques present several challenges that can generally be divided into three categories: conceptual, organizational and technical.

Conceptual Challenges

Data availability and validity remain the primary conceptual challenges. To measure policy effectiveness, auditors may often need to rely on government databases designed for different purposes. For example, labor market participation may be derived from tax databases that can miss crucial information necessary to an audit. Prior to performing assessments using information from government databases,

a study on the data's reliability and validity may be needed. Otherwise, auditors run the risk of asking the right questions and performing the right analyses only to arrive at wrong conclusions due to data flaws.

Organizational Challenges

SAs deciding to invest in data analytics may also need to adjust ways in which audits are performed. Obtaining the right skills is crucial and entails a thorough analysis of SAI needs, such as addressing the type(s) of data analytics desired and necessary support staff, including skills and knowledge in database administration, data protection regulations and data visualization. Additionally, SAs should consider how these skills can be obtained, either by training current staff or recruiting new employees.

Addressing organizational setup is essential, and many options are feasible based on a continuum that includes data specialists allocated to teams only performing analyses for other audit teams to data specialists fully embedded into audit teams performing audits from start to finish and only analyzing data for individual audits.

Technical Challenges

When performing data analytics in an audit context, SAs may face technical challenges and require new software or more robust computers.

Early consideration to necessary software provides numerous benefits: potentially minimizing costs while catering to current and future audit needs; providing a benchmark for skills; and selecting appropriate data protection solutions. New software solutions may also require high-performing computers—for each data analyst and/or for shared central servers or cloud-based solutions. These options may also depend on how data specialists are allocated. If data specialists, for instance, work on audits from start to finish, it may make sense to pool computing resources with central, shared servers or cloud-based solutions, as the amount of specialists that will do data analytics simultaneously will be limited.

Regardless of the software and hardware options, data protection will always need to be addressed. As more data are harvested, edited and stored, investments in protecting these data becomes more crucial, especially considering the personal and/or sensitive nature of the data.

The Belgian Solution

SAI Belgium's strategic plan focuses on directly measuring policy effectiveness, which often goes hand-in-hand with data analytics. To implement this strategic plan, the SAI has employed numerous tactics, such as:

- Hiring academically trained social scientists with data skills;
- Performing a survey to detect experiences (and interest in) data analytics among existing staff;
- Organizing a global training session on the basics of data analytics; and
- Forming a "DataLab" discussion group that helped spread data analytics agency-wide through monthly meetings incorporating organized training, advice and assistance from data specialists.

SAI Belgium chose to allocate data specialists to audit teams, where they perform audits from start to finish. However, through DataLab, data specialists also support teams that have no data analytic specialists.

Because several software packages are used simultaneously, SAI Belgium continues to face technical challenges—a result of employees with a diverse background using existing software combined with the relatively new use of data analytic techniques.

Currently, SAI Belgium is investing in high-performance, centralized computers and developing a Structured Query Language warehouse to store recurrent financial data flows from administration. Cloud-based solutions are also being investigated, and the organization's Data Protection Officer has established a data protection policy.

Conclusion

Data availability and techniques can offer useful prospects for new audit types. While SAI Belgium has fully embraced these possibilities, some lessons learned include the need to (1) thoroughly consider a data analytics strategy; and (2) consider potential conceptual, organizational and technical challenges.

While SAI Belgium experienced all of the challenges outlined in this article, the creation of DataLab proved crucial to addressing these challenges, particularly as the group provided a forum to brainstorm strategies to overcome all challenges and capitalize on all possibilities.



EUROSAI 2020

2020 EUROSAI CONGRESS TO ILLUSTRATE FUTURE OF AUDIT

In the very heart of Europe—Prague, Czech Republic—representatives from all European Supreme Audit Institutions (EUROSAI) will unite to participate in the XI EUROSAI Congress from May 31-June 4, 2020.

The Supreme Audit Office of the Czech Republic accepted the opportunity (and challenge) to host the XI EUROSAI Congress recognizing the importance of such an event, particularly in this ever-changing world where Supreme Audit Institutions (SAIs) must remain agile—capable of quickly responding to emerging trends and increased stakeholder expectations.

While the XI EUROSAI Congress will take place at locations steeped in Czech Republic history, the program will present a journey to the future of audit and will illustrate how far we, as SAIs, can go together through international cooperation.

The XI EUROSAI Congress vision (3C-3E-3I) will provide the key unlocking much-needed information for auditors to respond to change and provide continuous feedback to policymakers and the public. With the help of modern technology, communication, cooperation, comparison (3C), in combination with information exchange, innovation and interactivity (3I), can provide more targeted answers as to if economy, efficiency and effectiveness (3E) have been met.

The XI EUROSAI Congress will feature workshops that include an emphasis on the Sustainable Development Goals (SDGs); audit output visualization; benchmarking benefits and an in-depth look into the Benchmarking Information Exchange Project (BIEP); Information Technologies (IT) to facilitate translation; European Public Sector Accounting Standards (EPSAS); combating corruption; taxation; results from the International Hackathon (scheduled for March 3-5, 2020, in Prague); e-Gov project audits; implementing audit recommendations; developing fast, responsive, facts-only reports that provide valuable feedback to policymakers; successfully integrating the International Organization of Supreme Audit Institutions (INTOSAI) Framework for Professional Pronouncements into audit work; and identifying emerging issues SAIs should address.

The XI EUROSAI Congress will cover many important and inspiring topics that will affect the future of audit with one goal in mind—help SAIs cope with the challenges these topics present today.

To learn more about the XI EUROSAI Congress, visit <https://www.eurosai2020.cz/>.



FIGHTING CORRUPTION: OLACEFS LAUNCHES REGIONAL FORUM

As Organization of Latin American and Caribbean Supreme Audit Institutions (OLACEFS) President, the Supreme Audit Institution (SAI) of Peru, hosted the first-ever Regional High-Level Forum of SAIs (FRAN) on December 4, 2019, in Lima. The inaugural forum, which highlighted the “Fight Against Corruption: A Matter of Development—Mechanisms and Good Practices to Improve Government Control and Promote Good Governance,” responded to the need to provide a space for high-level, regional dialogue on combating corruption.

The forum welcomed international experts who encouraged debate among participants on topics designed to improve oversight and promote good governance, such as how corruption affects legitimacy, technical and ethical challenges in using new technologies, psychological perspectives, and transnational corruption. Participants included Nelson Shack Yalta, OLACEFS President and SAI Peru Comptroller General (CG); Juan Ignacio Forlón, Auditor General (AG), SAI Argentina; Dorothy Ann Bradly, AG of Belize; Dr. Henry Ara, SAI Bolivia CG; Dr. Valentina Zárate, Secretary General of SAI Ecuador; Carmen Elena Rivas, President, SAI El Salvador; Roy Pineda, Magistrate President of SAI Honduras; José Juan Pineda, SAI Honduras Magistrate; Félix Álvarez, Plenary Member, SAI Dominican Republic; and Dr. Humberto Ramírez and Dr. Martín Díaz, Deputy Comptrollers of SAI Peru.



OLACEFS PARTICIPATES IN 2019 CAII

Numerous delegates representing OLACEFS contributed to the 2019 Annual International Conference for Integrity (CAII), an event hosted by SAI Peru.

In his opening address, Nelson Shack Yalta, OLACEFS President and SAI Peru's Comptroller General, stressed the most harmful effect of corruption and functional misconduct is the citizen mistrust toward authorities, an aspect that negatively impacts national stability and economic growth.

This year's CAII focused on the “Detection of Corruption: Mechanisms and Strategies for Action” and included keynote sessions, panels and forums that highlighted big data analytics, open data, science and technology, the Sustainable Development Goals (SDGs) and transnational collaboration.

With more than 2,000 participants, CAII 2019 included specialized experts in using information technology to detect and fight corruption, as well as Auditors General and representatives from SAIs worldwide.

OLACEFS members participated on several panels where they shared findings and experiences in using technological tools to optimize government auditing, including Dr. Carlos Córdoba Larrarte, CG, SAI Colombia, on “Interoperability Systems, Predictive Analytics and Intelligence Systems to Detect Risks of Corruption”; Dr. Valentina Zárate Montalvo, SAI Ecuador's Secretary General, on the panel dedicated to “Transnational Collaboration: Transparency to Strengthen the Detection of Capital Flows from Corruption”; and Dr. Camilo Benítez Aldana, CG, SAI Paraguay, on “Anti-bribery Laws: Lessons in Application in Latin America.”



ARABOSAI GENERAL ASSEMBLY HIGHLIGHTS DEVELOPMENT AT ALL LEVELS

The State Audit Bureau (SAB) of Qatar hosted the Arab Organization of Supreme Audit Institutions (ARABOSAI) 13th General Assembly in Doha, Qatar, November 10-14, 2019.

The week-long event kicked off with the 58th Governing Board meeting, where delegates discussed past progress, as well as operational and administrative improvements aimed at guiding the region to future success.

Expressing hope for increased regional cooperation, H.E. Sheikh Bandar Bin Mohammed Bin Saoud Al Thani, SAB President, officially opened the assembly, which included representatives from 17 ARABOSAI member nations, the International Organization of Supreme Audit Institutions (INTOSAI) General Secretariat, INTOSAI Development Initiative (IDI), African Organization of English Speaking Supreme Audit Institutions (AFROSAI-E), Asian Organization of Supreme Audit Institutions (ASOSAI), Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and the World Bank.

"Major pillars of INTOSAI activities rest on the shoulders of ARABOSAI members," expressed Herbert Baumgartner in his speech at the assembly's opening ceremony.

Baumgartner, representing the INTOSAI General Secretariat, added, "INTOSAI would not have successfully implemented its four goals without ARABOSAI support."

The assembly included several highlights shaping the region for years to come, such as SAB Qatar assuming ARABOSAI Chairmanship from SAB Kuwait; declaring the General Audit Bureau of Saudi Arabia as the assembly's First Deputy Chair; electing new Governing Board members and committee chairs; and approving amendments to the region's statutes.

A special signing ceremony took place between ARABOSAI and AFROSAI-E extending the partnership between the two regions to increase cooperation on areas of mutual interest.

The event's robust agenda also included regional progress reports, dialogue on issues of global importance, and panel-led discussions and presentations focused on the assembly's two major themes:

- Organizational and Institutional Development; and
- Professional Development.

Panel participants sparked dialogue by sharing relevant Supreme Audit Institution (SAI) projects, oversight guidance, strategic plan implementation, and professional training efforts designed to achieve maximum effectiveness and efficiency while also addressing capacity, collaboration, independence and relevance.

While participants noted the importance in linking organizational strategies with national policies, they also pointed to International Standards of Supreme Audit Institutions (ISSAI) 12, "The Value and Benefits of Supreme Audit Institutions: Making a Difference in the Lives of Citizens," as a significant INTOSAI resource and reference that calls for SAIs to be model institutions.

Assembly delegates indicated improving organizational, institutional and professional development initiatives remain essential to enhancing competencies, enriching performance, refining work mechanisms and strengthening values. Attendees also expressed such efforts are not simple, short-term solutions—they must be comprehensive and continuous.

On the assembly's final day, awards were presented to winners of the 12th Scientific Research Contest and to the author of the best article published in the Journal of Financial Auditing since the previous ARABOSAI General Assembly in 2016.

Members formally adopted the Doha Declaration as the 13th General Assembly came to a close. The declaration reaffirms the region's commitment to accountability, anti-corruption initiatives, institutional development and transparency.

The next ARABOSAI General Assembly, which is a triennial event, is scheduled to take place in Mecca, Saudi Arabia, in 2022.





CHARTING THE BEST PATH FORWARD: PASAI HIGHLIGHTS SDG IMPLEMENTATION

In 2015, 193 nations of the United Nations General Assembly put pen to paper and agreed to sign on to implement 17 Sustainable Development Goals (SDGs). They were ambitious goals, targeted for 2030 and envisioned, among other things, ending poverty and hunger, improving health and education, making cities more sustainable, combating climate change, and protecting oceans and forests.

But for goals to be met, action must follow. How does a country chart its progress? How can citizens be sure a nation’s government follows through on these commitments? This is where a nation’s Supreme Audit Institution (SAI) can play a critical role. Through high-quality audits, SAIs can help governments examine preparedness for implementation and help generate a focus on an integrated, “whole of government” approach.

One segment of the world’s SAIs spent a week laser-like focused on these questions and how best to execute the important roles SAIs can play. The Pacific Association of

Supreme Audit Institutions (PASAI) held its annual Congress in Fiji, where member SAIs and development partners shared best practices in what SAIs are already doing, as well as help SAIs chart an effective path forward.

“The role of the SAI in auditing SDGs is critical, and it is our role as PASAI’s Secretariat, to ensure that every SAI is equipped to rise to that challenge,” said Tiofilusi Tiueti, the PASAI Executive Director.

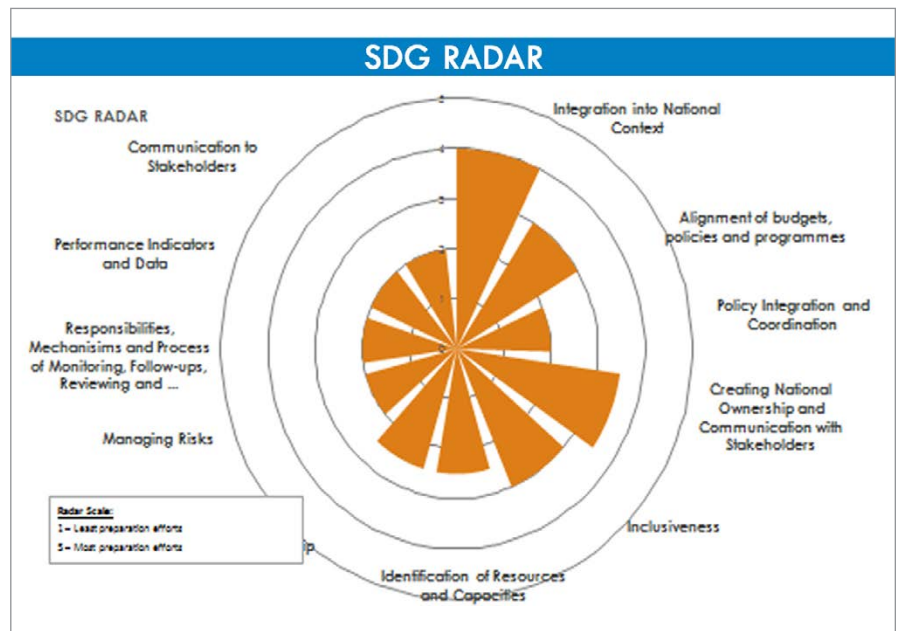
“We are already responding to the shifts in learning delivery emphasized by the independent Mid-Term Review at the half-way point of the PASAI 2014-2024 strategy by providing the right support, at the right time, in the right way. With regard to auditing SDGs, the Secretariat will build a learning and knowledge platform for SAIs to provide information and guidance on SDG-related matters, while also sharing SAI successes and ‘more-work-to-do’ SDG stories through its communications network.”

What is a “whole of government” approach? The INTOSAI Development Initiative (IDI) points out a single SDG can

impact areas across many different ministries, plans, policies and budgets (horizontal) and across different governance levels (vertical), so a comprehensive approach is required.

“Whole of government” is an overarching term for a group of responses to the problem of increased fragmentation of the public sector and public services and a wish to increase integration, coordination and capacity. It has three audit objectives:

- To what extent has the government adapted the 2030 agenda into its national context?
- Has the government identified and secured resources & capacities (means of implementation) needed to implement the 2030 Agenda?
- Has the Government established a mechanism to monitor follow-up, review and report on the progress towards implementing the 2030 Agenda?



The SAIs in PASAI have learned a great deal about performance audits and working on cooperative initiatives and plan to consolidate this learning into the strategic planning processes of their offices. Ten SAIs in the Pacific region are taking part in a Cooperative Audit on Preparedness for the Implementation of the SDGs, five of which have already published audits or submitted them to Parliament.

In Tonga, Auditor General Sefita Tangi developed a compelling visual tool to track that nation’s efforts on implementation (see SDGs Radar graphic top right of page).

“The SDG radar shows that Tonga has best performed in integrating the SDGs into its national context and least performed in policy integration and coordination; identification of responsibilities, mechanisms, process of monitoring, follow-ups, reviewing and reporting; performance indicators and data, and communicating to stakeholders.”

Neither Tonga, nor any of the SAIs around the world, are facing these SDG audit challenges alone. IDI is supporting SDG implementation, and, in cooperation with the INTOSAI Knowledge Sharing Committee, IDI launched a capacity development program on “Auditing Sustainable Development Goals.”

“IDI envisions effective, accountable, inclusive SAIs making a difference through high-quality audits of SDG implementation,”

said Archana Shirsat, Deputy Director at IDI. In fact, IDI is currently developing an audit model—the IDI SDG Audit Model (ISAM)—to help SAIs in auditing SDGs.

“The ISAM will support SAIs, across INTOSAI regions, in reflecting on key strategic considerations at the SAI level and in conducting ISSAI compliant audits of SDG implementation,” Shirsat said.

“In keeping with SDG principles, ISAM will provide guidance on examining policy coherence, inclusiveness and multi stakeholder engagement in implementing nationally agreed upon targets linked to SDGs.”

PASAI’s Development and Regional Partners are committed to supporting these efforts and have already undertaken significant work in these areas, which can act as an accelerator.

Keshwa Reddy, Program manager for Regional Government and Economic Growth for the Australian High Commission, said “development partners are committed to sharing expertise, approaches and lessons learned to help shape SDG advancement in the Pacific.”

As the PASAI Congress wrapped up, the host, Fiji Auditor General Ajay Nand, said he “hoped that the Congress will allow PASAI member countries to share their success stories on audit preparedness, on implementation of SDGs, and also bring to the forum challenges faced for discussion and resolution. In this way, the member countries would be better prepared to carry out the audit of SDG implementation, which is the next phase.”



TECHNOLOGY: OPPORTUNITIES TO BUILD CAPACITY, ENHANCE OVERSIGHT

by Nelson Shack Yalta, Comptroller General of the Republic of Peru and President of the Organization of Latin American and Caribbean Supreme Audit Institutions

Technology has changed how we do business, how we conduct public administration and human relations, and how we analyze information. Technological advances have also affected the auditor's role with huge implications in government oversight.

Using new tools, such as data analytics, Artificial Intelligence (AI) and related technologies, Supreme Audit Institutions (SAIs) can now (with greater probabilities of success) analyze existing risks in public management; prioritize interventions in the riskiest processes; allocate operational capacity more efficiently; and obtain greater results in preventing,

detecting and sanctioning acts of functional misconduct and corruption.

In the last two years, the Office of the Comptroller General of the Republic of Peru (SAI Peru) has transformed how government control is implemented. Based on information analyses and data recorded in computer applications, SAI Peru now plans and executes audits with greater efficiency and effectiveness.

For instance, large-scale projects (megaprojects) tend to be the riskiest public interventions due to funding and economic viability, along with the social, political and environmental risks they entail. Given this, SAI Peru restructured the organization to assertively target megaproject audits—a transformation that included creating an exclusive division advocating oversight of sizable projects, including specialized investment modalities, such as public-private partnerships.

SAI Peru developed an audit prioritization model based on:

- A “Matrix of Relative Importance” consisting of criteria related to a project’s socioeconomic impact—investment amount, number of beneficiaries, investment phase or project term; and
- A “Risk Matrix” identifying risk factors that increase the likelihood of negative consequences, including those

potentially resulting in loss or damage to the State. Risk factors, such as the existence of previous audits; quantity of addendums to signed contracts; number of project-related whistleblowing reports; degree of internal control system implementation in the sector; and physical and financial progress, are weighted to establish degrees of importance.

Within each criterion and risk factor, a score is assigned (and validated by expert judgment) as to the socioeconomic impact, magnitude of loss or damage, and probability of occurrence.

In 2019, all megaprojects underway in Peru (900 projects totaling approximately \$63.3 billion United States Dollars (USD)) were analyzed based on the audit prioritization model. Results demonstrated which prioritized projects had the highest social, environmental and economic impact and allowed SAI Peru to better focus available operational capacity to those projects having the greatest socioeconomic risks.

As SAIs employ more technology and are better able to analyze public procurement processes, oversight demand will, inevitably, require new audit services responding to the quantity, frequency, complexity and opportunity in which risks are presented and detected. As such, a change potentially transforming government oversight will mean transitioning from a collection of past facts (*ex post*) toward a simultaneous, or concurrent, control of risks reported in real time (*ex dure*).

While risk models help define where and when to intervene, identifying the most significant milestones or stages within specific public intervention processes enhances oversight efficiency. SAI Peru complements its risk models through its Concurrent Control Model (CCM)—a simultaneous, systematic, multidisciplinary, non-binding mechanism that employs various techniques and exploits Science and Technology (S&T) to evaluate process phases and targets. The CCM helps assess the degree to which processes are carried out according to regulations, internal and contractual provisions and other applicable stipulations.

SAI Peru has experienced several benefits through concurrent control efforts, such as increased capacity in alerting officials to potential risks and adverse situations, which aids in timely mitigation; addressing citizen concerns through timely reporting, which facilitates stakeholder engagement, improves transparency, builds trust and enhances credibility; and using multidisciplinary teams to apply specialized

methods (topographic tests, geodetic measurements, and aerial photogrammetry), which greatly enriches audit work through real-time data gathering.

By improving public work supervision or enforcing penalties, simultaneous control increases the ability to correct adverse situations in a timely manner.

For instance, SAI Peru invested less than \$2.7 million USD in executing the CCM to construction and reconstruction works following the 2017 “El Niño” phenomenon. Applying the CCM resulted in avoiding a potential \$26.5 million USD in losses to the State.

The CCM also comprises indirect implications relevant to public management performance. The model’s multidisciplinary team approach using S&T to expose real-time evidence supplements capabilities to identify and assess risks, improves oversight, enhances managerial capacity development, and reduces the probability of committing infringing behavior (through the perception of immediate detection).

Conclusion

Technology brings visibility to managerial processes and behaviors, which translates into an increase in SAI capacities to enhance good governance. Opportunities new technologies offer to audit work will certainly continue to modify oversight today and well into the future. This imminent reality compels us to continue automating audit procedures and innovating with an alignment toward achieving measurable results that benefit citizens.

SAI Peru’s recent experience has generated important lessons learned in developing and implementing risk models that guide audit performance and has resulted in a new control model (the CCM) further improving oversight efforts through risk prevention and avoidance.

S&T challenges, common to all SAIs, call for collaboration as a fundamental instrument to innovate, transfer knowledge and share successful practices.

Learn more about SAI Peru by visiting the SAI website at <http://www.contraloria.gob.pe/>.

References

- (1) Section 7.1 of Directive No. 002-2019-CG-NORM “Simultaneous Control Service” approved by Comptroller’s Resolution No. 115-2019-CG and amended by Comptroller’s Resolution No. 269-2019-CG.
- (2) Shack, Nelson (2019). Working paper “The Concurrent Control Model as the Central Axis of a Preventive, Swift and Timely Approach to Public Audit in Peru.”

INNOVATION LABS: EMBRACE CHANGE TO REAP REWARDS

by Jan Roar Beckstrom, Chief Data Scientist, Office of the Auditor General of Norway

Potentially, useful data are piling up everywhere. Scientific and Technological (S&T) advances are happening quickly and are, just as quickly, becoming difficult to follow. Discussions on topics—such as audit automation, Machine Learning, Artificial Intelligence and Blockchain—abound, as does advice to move everything to the infamous cloud, and these trends are certainly affecting audit work.

The International Organization of Supreme Audit Institutions (INTOSAI) recently established the Working Group on Impact of Science and Technology on Auditing (WGISTA) to focus on key S&T developments, and Supreme Audit Institutions (SAIs) also feel the need to do *something*—but what and why?

In 2019, the Office of the Auditor General (OAG) of Norway established an Innovation Lab, which, much like a chemistry experiment, involved a hefty amount of trial and error to find the right formula for success. The OAG pulled together three technologically capable people (who also had creative minds, some coding skills, a touch of audit knowledge and a hint of quantitative methods comprehension) and added a heaping spoonful of freedom.

An Innovation Lab—one that truly cultivates a creative, entrepreneurial spirit—is at the very heart of modernization and improvement. Though a bit risky (as outcomes are uncertain), innovation is a necessity for SAIs to transform into first-class audit offices, and the OAG shares its experience, along with some best practices, in establishing and operating an Innovation Lab.

Focus on Concrete Problems

Armed with empathy and flexibility, an effective Innovation Lab detects (and solves) concrete problems with which auditors struggle. As an Innovation Lab for a public audit organization, working with, and understanding, auditors helps generate pioneering solutions to emerging S&T trends affecting the audit community. The prime target: make the real audit work more efficient and easier.

Provide Exploratory Freedom

Putting three wiz-kids in the same room with an expensive espresso machine does not necessarily lead to magic. The team must understand the organization's mission and be positioned to promote creativity. OAG Norway's Innovation Lab, which resides in the Support and Development Department, interacts daily with auditors and receives minimal supervision.

Establish Priorities

All ideas are not necessarily good ones. Thus, potential Innovation Lab initiatives requiring additional resources should include cost/benefit analyses. These analyses can be as simple as thinking through the necessary resources and identifying added value should the effort be implemented.

Not Just An(other) IT Unit

An audit office Innovation Lab will, most likely, use different types of technology for varying tasks. This does not turn the Innovation Lab into an Information Technology (IT) unit. An effective Innovation Lab employs a balance of analytical and methodological capabilities, business knowledge and coding skills—it's about data science, cutting-edge analysis, tool fabrication and problem solving.

Goodbye Formality, Hello Informal Collaboration

Innovation Labs should be, of course, innovative. This means avoiding excessive documentation and formal processes, which can slow invention. New ideas can (and should) develop rapidly, and priorities can (and should) change. In this sense, "showing" (putting new products, processes and services on display) can be more efficient than "telling" (relying on memos to convey new ideas). Say goodbye to formal meetings and say hello to direct, informal collaboration with others.

Show Value Quickly

Innovation Labs, particularly those operating in a change-averse culture, will be met with skepticism. It is important to show value-adding capabilities early on by producing a useful product, process or service in the first few months.

Innovation Labs lead to invention, and there are few greater professional pleasures than creating products, processes and services that actually do or fix something. As a SAI looking to provide cutting-edge solutions to emerging S&T trends, we must embrace change, embrace risk and embrace the great rewards that follow.

For more information about Innovation Labs, contact the author at jan-roar.beckstrom@Riksrevisjonen.no.

INNOVATION LABS TO ADDRESS S&T IMPACTS ON AUDITING

INNOVATION LABS DEFINED



Innovation labs, also often referred to as accelerators, hubs or incubators, are units or teams that employ creativity and flexibility aimed at inventing ideas, products, processes and services to help solve problems, create work efficiencies and address emerging trends. They can function in a variety of ways—operating as a completely separate unit from the organization or functioning as an internal team staffed with existing employees.

THE NEED AND RESPONSES

Scientific and Technological (S&T) advances are happening quickly. Discussions surrounding S&T abound, and these trends are affecting audit work. The International Organization of Supreme Audit Institutions (INTOSAI) recently established the Working Group on Impact of Science and Technology on Auditing (WGISTA) and Supreme Audit Institutions (SAI) want to do something, but what? The Office of the Auditor General of Norway suggests establishing an Innovation Lab and shares its experience along with some best practices.

BEST PRACTICES IN ESTABLISHING, OPERATING SUCCESSFUL INNOVATION LABS



Collaborate with INTOSAI and its working groups, including the Working Group on Big Data (WGBD), Working Group on Information Technology Audit (WGITA) and WGISTA.



Employ team members who are technologically capable who also possess creative minds, some coding skills, a touch of audit knowledge and a hint of quantitative methods comprehension.



Focus on concrete problems and work with auditors to help generate pioneering, helpful solutions to current issues, as well as forward-looking ideas to address emerging trends.



Provide exploratory freedom—position the team for creativity by placing the unit within the organization to limit bureaucracy while allowing for regular interaction with auditors.



Establish priorities and analyze the costs and benefits associated with each potential initiative to determine the requirements and possible returns on investment if implemented.



Say goodbye to formal meetings and say hello to direct, informal collaboration, as "showing" is often more valuable than "telling" when it comes to sharing Innovation Lab initiatives.



Show value quickly! As Innovation Labs may be met with skepticism, it is important to show early successes (within the first few months) to demonstrate organizational value.



Have fun and embrace change and risk along with the great rewards that follow!



INTERNATIONAL JOURNAL

OF GOVERNMENT AUDITING

Visit us online: intosaijournal.org

Follow us on twitter: twitter.com/intosaijournal

Follow us on instagram: [instagram.com/intosaijournal](https://www.instagram.com/intosaijournal)