

Phase	Pillar	Subject	Question to consider
Phase 1	Preliminary information and hypotheses	Technology trends	What are the modern technologies that are currently in the market?
Phase 1	Preliminary information and hypotheses	Technology trends	What are the emerging technologies that are currently in the market?
Phase 1	Preliminary information and hypotheses	Technology trends	What challenges and risks new technologies bring to our work?
Phase 1	Preliminary information and hypotheses	Technology trends	How use of technology impacts the audit work?
Phase 1	Preliminary information and hypotheses	Technology trends	What do professional organisations say about technologies in audit?
Phase 1	Preliminary information and hypotheses	Technology trends	How governments around the world use new technologies?
Phase 1	Preliminary information and hypotheses	Technology trends	How SAIs around the world use new technologies?
Phase 1	Preliminary information and hypotheses	Technology trends	How SAIs around the world audit new technologies?
Phase 1	Preliminary information and hypotheses	Technology trends	How private audit companies around the world use new technologies?
Phase 1	Preliminary information and hypotheses	Technology trends	How private audit companies around the world audit new technologies?
Phase 2	Examine the Ecosystem	Effective organizational & governance coordination	Is there a governance structure in our government, with roles and responsibilities, in developing the national digital strategy and coordinating and monitoring its implementation in the public sector?
Phase 2	Examine the Ecosystem	Leadership and governance	Does our government have an organization or a leader responsible for the digital / technology agenda in the government?
Phase 2	Examine the Ecosystem	Leadership and governance	Does our government have a digital/technology strategy that sets out a common vision and goals for the use of digital technologies in the public sector?
Phase 2	Examine the Ecosystem	Leadership and political development	Is there political support for the digital transformation agenda in government at central and local levels?
Phase 2	Examine the Ecosystem	Leadership and governance	Does our government have coordination mechanisms to align decisions and investments across the public sector with national priorities for digital governance?
Phase 2	Examine the Ecosystem	Leadership and governance	Does our government follow any standard procedures to simplify, digitalize, and optimize government services?
Phase 2	Examine the Ecosystem	Leadership and governance	Does any external organization perform IT, Information Security, Cybersecurity audits of government IT systems?
Phase 2	Examine the Ecosystem	Leadership and governance	Is there a data protection authority in our country?
Phase 2	Examine the Ecosystem	Leadership and governance	Is there a digital identification that can be used for identification and services?
Phase 2	Examine the Ecosystem	Leadership and governance	Is there a cybersecurity emergency response team or a computer emergency incident response team?
Phase 2	Examine the Ecosystem	Development of clear business cases	Are there clear business cases and business processes for ICT projects in our government?
Phase 2	Examine the Ecosystem	Development of clear business cases	Are there authorities responsible for the elaboration of digital government projects' business case?

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Phase 2	Examine the Ecosystem	Procurement of digital technologies	Does our government have a unit that is in charge of ICT procurement policy?
Phase 2	Examine the Ecosystem	Procurement of digital technologies	Is there an ICT procurement policy?
Phase 2	Examine the Ecosystem	Procurement of digital technologies	Are there tools that provide the government with a general overview of the existing digital government initiatives and assets at the central government level?
Phase 2	Examine the Ecosystem	Procurement of digital technologies	What are the procurements related to digital/technology done by our government in the past 5-10 years?
Phase 2	Examine the Ecosystem	Procurement of digital technologies	Are there any ongoing or planned procurements?
Phase 2	Examine the Ecosystem	Procurement of digital technologies	What are the technologies, solutions, tools that are being procured by the government?
Phase 2	Examine the Ecosystem	Procurement of digital technologies	Does our government procure technologies including data analytics, artificial intelligence, machine learning, robotic process automation, big data, cloud?
Phase 2	Examine the Ecosystem	Procurement of digital technologies	Does our government procure services like cybersecurity, IT audits, algorithm assurance, data analytics?
Phase 2	Examine the Ecosystem	Procurement of digital technologies	Do we have or can we obtain the list of technology related procurements?
Phase 2	Examine the Ecosystem	Procurement of digital technologies	Are the government ICT procurement procedures being followed for digital government expenditures?
Phase 2	Examine the Ecosystem	Engagement and participation in policymaking and service delivery	How ICT and new technologies are used in citizen engagement and participation in defining public policies and delivering services?
Phase 2	Examine the Ecosystem	Engagement and participation in policymaking and service delivery	Are government operations and decision-making processes inclusive?
Phase 2	Examine the Ecosystem	Strengthen international co-operation with other governments	Does it participate in any bilateral or multilateral cooperation mechanism dedicated to digital government?
Phase 2	Examine the Ecosystem	Strengthen international co-operation with other governments	Has one or more international legal instruments to support the development of digital government been adhered to?
Phase 2	Examine the Ecosystem	Reinforced ICT project management capacities	Are there standardized ICT project management models?
Phase 2	Examine the Ecosystem	Reinforced ICT project management capacities	Are there mechanisms to give visibility to digital government initiatives in central government, including monitoring, measurement, and evaluation structures for ICT projects?
Phase 2	Examine the Ecosystem	Reinforced ICT project management capacities	Are there monitoring mechanisms to assess ICT technical skills and ICT management needs across the public sector?
Phase 2	Examine the Ecosystem	Legal and regulatory framework	Is there a legal framework that regulates access to and sharing of digital data and resources in the public sector?
Phase 2	Examine the Ecosystem	Legal and regulatory framework	Is there a legal framework that recognizes the right to digital communication with the administration and a suitable environment for this to happen?

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Phase 2	Examine the Ecosystem	Legal and regulatory framework	Is there a legal framework that recognizes the right to free access to government data in a re-usable format?
Phase 2	Examine the Ecosystem	Legal and regulatory framework	Is there a data protection or privacy law?
Phase 2	Examine the Ecosystem	Legal and regulatory framework	Is there a digital signature regulation and public key infrastructure to support operations and service delivery?
Phase 2	Examine the Ecosystem	Technology Infrastructure	Do we have the contact in our government to address inquiries and questions regarding technologies in the government entities?
Phase 2	Examine the Ecosystem	Technology Infrastructure	Do we have or can we obtain a government-wide catalogue of IT solutions/systems/technologies developed or used in our government (including a brief description, technologies used, need for the system, current usage, concerned government entities)?
Phase 2	Examine the Ecosystem	Technology Infrastructure	Do we have access to a whole-of-government Enterprise Architecture (covering infrastructure, data, integration, application, presentation, operations and security dimensions)?
Phase 2	Examine the Ecosystem	Technology Infrastructure	Does our government use disruptive technologies such as Cloud services, IoT, Blockchain or AI - or is it open to the idea of doing so?
Phase 2	Examine the Ecosystem	Technology Infrastructure	Does our government digitalize financial and accounting processes?
Phase 2	Examine the Ecosystem	Technology Infrastructure	Is the organization using accounting software?
Phase 2	Examine the Ecosystem	Technology Infrastructure	What type of accounting system does the organization use?
Phase 2	Examine the Ecosystem	Technology Infrastructure	Is government technology infrastructure managed, maintained and developed by the government resources or development, maintenance, testing services are outsourced to the third party?
Phase 2	Examine the Ecosystem	Openness, transparency and inclusiveness	Is there a legal and regulatory framework that supports the use of ICT to increase the openness and transparency of government processes, operations, data and information?
Phase 2	Examine the Ecosystem	Openness, transparency and inclusiveness	Is there an “open by default” standard for government data?
Phase 2	Examine the Ecosystem	Openness, transparency and inclusiveness	What is the level of openness, transparency and inclusion in government processes and operations?
Phase 2	Examine the Ecosystem	Openness, transparency and inclusiveness	What is the level of digital inclusion and ICT skills in society and among public servants?
Phase 2	Examine the Ecosystem	Openness, transparency and inclusiveness	How is the institutional presence in social media to communicate transparency?

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Phase 2	Examine the Ecosystem	Openness, transparency and inclusiveness	Is there awareness of the relevance of technology and open data to strengthen efforts to fight corruption?
Phase 2	Examine the Ecosystem	Creation of a data-driven culture in the public sector	Is data used to improve public sector intelligence, to understand societal needs and to support policy-making and service design and delivery?
Phase 2	Examine the Ecosystem	Creation of a data-driven culture in the public sector	Are administrative datasets and data platforms interoperable?
Phase 2	Examine the Ecosystem	Creation of a data-driven culture in the public sector	Does the government have civil service with data analysis skills?
Phase 2	Examine the Ecosystem	Coherent use of digital technology across policy areas	Is there a strategy that sets out a common vision and goals for the use of digital technologies in the public sector?
Phase 2	Examine the Ecosystem	Coherent use of digital technology across policy areas	Are there coordination mechanisms to align decisions and investments across the public sector with national priorities for digital governance?
Phase 2	Examine the Ecosystem	Data Infrastructure and Availability	Is there the digitalized data available in the government that we could use in the audit processes?
Phase 2	Examine the Ecosystem	Data Infrastructure and Availability	What kind of data is available in the digital format?
Phase 2	Examine the Ecosystem	Data Infrastructure and Availability	In which types of audits, we could use digital data that is available (financial, compliance, performance)?
Phase 2	Examine the Ecosystem	Data Infrastructure and Availability	Is our government using the digital data to take decisions, improve processes, support policy-making? Are there analytical models, AI?
Phase 2	Examine the Ecosystem	Data Infrastructure and Availability	Does the government have a data management strategy (collection, storage, sharing and re-use strategy)?
Phase 2	Examine the Ecosystem	Data Infrastructure and Availability	Has the government defined, digitized and shared a set of "basic data registers"?
Phase 2	Examine the Ecosystem	Data Infrastructure and Availability	Does our government also publish Open Data?
Phase 2	Examine the Ecosystem	Data Infrastructure and Availability	Is available digital data used for any form of analysis?
Phase 2	Examine the Ecosystem	Cyber Security, Privacy and Resilience	Has our government developed a cyber security strategy and policy document?
Phase 2	Examine the Ecosystem	Cyber Security, Privacy and Resilience	Has the government established a Cyber Security unit or centre within a core entity to manage and maintain security of all digital assets and platforms?
Phase 2	Examine the Ecosystem	Cyber Security, Privacy and Resilience	Is there a Computer Emergency Response Team (CERT) capability in the government?
Phase 2	Examine the Ecosystem	Cyber Security, Privacy and Resilience	Does the government collaborate with regional and international governments or organizations to share information on and mitigate cyber threats or risks?
Phase 2	Examine the Ecosystem	Cyber Security, Privacy and Resilience	Does the government have a National Critical Infrastructure Protection Plan?
Phase 2	Examine the Ecosystem	Protecting privacy and ensuring security	Are there national Computer Security Incident Response Teams (CSIRT) and/or a data protection authority?

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Phase 2	Examine the Ecosystem	Protecting privacy and ensuring security	Does the government have a clear strategy for assessing the risk of security incidents or breaches of privacy?
Phase 2	Examine the Ecosystem	Government Systems	Is there a government cloud available for all government entities?
Phase 2	Examine the Ecosystem	Government Systems	Is there a government enterprise architecture?
Phase 2	Examine the Ecosystem	Government Systems	Is there a government service bus or interoperability platform in place?
Phase 2	Examine the Ecosystem	Government Systems	Is there an operational financial management information system to support central government public financial management functions?
Phase 2	Examine the Ecosystem	Government Systems	Is a treasury single account linked with a financial management information system to automate payments and bank reconciliation?
Phase 2	Examine the Ecosystem	Government Systems	Is there an operational tax management system?
Phase 2	Examine the Ecosystem	Government Systems	Is there an operational customs system?
Phase 2	Examine the Ecosystem	Government Systems	Is there a human resources management information system with an online service portal?
Phase 2	Examine the Ecosystem	Government Systems	Is there an operational payroll system linked with a human resources management information system?
Phase 2	Examine the Ecosystem	Government Systems	Is there an e-procurement portal supporting public procurement?
Phase 2	Examine the Ecosystem	Government Systems	Is there an operational debt management system (foreign and domestic debt)?
Phase 2	Examine the Ecosystem	Government Systems	Is there an operational public investment management system?
Phase 2	Examine the Ecosystem	Government Systems	Is there a government open-source software policy or action plan for the public sector?
Phase 2	Examine the Ecosystem	Government Systems	Does the government have a specific national strategy for new or disruptive technologies?
Phase 2	Examine the Ecosystem	Government Systems	Are there AI, ML based information systems?
Phase 2	Examine the Ecosystem	Government Systems	Are there manual processes that are automated using RPA?
Phase 2	Examine the Ecosystem	Government Systems	Is there an open-government portal?
Phase 2	Examine the Ecosystem	Government Systems	Is there an open-data portal?
Phase 2	Examine the Ecosystem	Government Systems	Are there national platforms that allow citizens to participate in policy decision-making?
Phase 2	Examine the Ecosystem	Government Systems	Are there government platforms that allow citizens or businesses to provide feedback?
Phase 3	Technology Focus	General	Has our SAI built some in-house technology solutions for audit that are not off-the shelf products? Are these solutions repeatable for future uses or was it a one-time use solution?
Phase 3	Technology Focus	General	Does our SAI regularly scan for new technology that can help with bringing efficiencies or improvements in audit outputs or we use ad-hoc approach for technology adoption?
Phase 3	Technology Focus	General	Does our SAI derive significant advantage from technology for its audit outputs or we are mostly driven by manual procedures for audit planning, execution and reporting?

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Phase 3	Technology Focus	General	Why should our SAI be interested in adoption of technology in audits? Will it bring efficiency, economy, improved coverage, better reports or any other advantage?
Phase 3	Data Analytics	Data Analytics	What percentage of SAI's audit execution work involves electronic data analysis? Please select on a scale of 0 to 100.
Phase 3	Data Analytics	Data Analytics	Does our SAI use only Spreadsheet tools like Excel for analysing data or our SAI use other advanced tools like ACL, Arbutus etc. when conducting audits?
Phase 3	Data Analytics	Data Analytics	What challenges does our SAI face in analysing the data when conducting audits? Please select from skill challenges, technology challenges, lack of tools, lack of data access, unstructured data, and delayed data access.
Phase 3	Data Analytics	Data Analytics	To what extent the audit utilizes data analysis tools like ACL, IDEA, and Arbutus etc? Please select from. Every audit, limited audits, majority of audits,
Phase 3	Data Analytics	Data Analytics	Has our SAI encountered challenges in terms of auditors' skills for data analytics? Can our SAI please share our SAI's main challenges? Please share the main technologies and tools for data analysis for which our SAI feel the skill gap is the highest.
Phase 3	Data Analytics	Data Analytics	Does our SAI use visualization tools in audits? If yes, which tool/s does our SAI use for visualization
Phase 3	Data Analytics	Data Analytics	Does our SAI perform audit data analytics at a central unit/department, or every auditor performs data analytics as the need arises?
Phase 3	Data Analytics	Data Analytics	Are there guidelines in place to ensure data integrity and security of the client data that auditors have access to?
Phase 3	Data Analytics	Data Analytics	Does our SAI use customized code/programming routines for customized use of Data Analytics Tools when conducting audits?
Phase 3	Data Analytics	Data Analytics	Does our SAI use Data Analytics equally as part of all three audit types i.e. Financial Audit, Performance Audit, Certification Audit? If not, which audit type requires more Data Analytics. Please list in order of priority for the three audit types.
Phase 3	Data Analytics	Data Analytics	Does our SAI import/centralize all client data at central servers/database of SAI when conducting audits? Will our SAI recommend this or decentralized client data is better?
Phase 3	Data Access	Data Access	To what extent is our SAI able to access flat and hierarchical data in various file formats, such as .csv, .tsv, and .xml when conducting audits?
Phase 3	Data Access	Data Access	To what extent is our SAI able to use query languages (e.g., SQL, PostgreSQL, and MySQL) to access data in relational databases when conducting audits?
Phase 3	Data Access	Data Access	To what extent is our SAI able to access data in non-relational (e.g., NoSQL) databases when conducting audits?

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Phase 3	Data Access	Data Processing	To what extent has our SAI used programming languages (e.g., R, Python, and SAS) to process data when conducting audits?
Phase 3	Data Access	Data Processing	How familiar is our SAI with standard data processing packages associated with a programming language – for instance, pandas (Python), numpy (Python), and dplyr (R)?
Phase 3	Data Access	Data Processing	To what extent has our SAI used query languages (e.g, SQL, PostgreSQL) to process and manipulate data from relational databases when conducting audits?
Phase 3	Data Access	Data Processing	To what extent has our SAI processed or manipulated data in non-relational (NoSQL) databases when conducting audits?
Phase 3	Data Access	Data Processing	Does our SAI need capacity to audit advanced database systems when conducting audits? If yes, does this capacity exist?
Phase 3	Data Access	Data Visualisation	How familiar is our SAI with data visualization software when conducting audits, such as Power BI or Tableau?
Phase 3	Data Access	Data Visualisation	How familiar is our SAI with the use of common visualization packages/libraries when conducting audits, such as ggplot2, Matplotlib, and Plotly?
Phase 3	Data Access	Data Visualisation	How familiar is our SAI with the use of packages/libraries (e.g., RShiny and Dash) commonly used to produce interactive web applications when conducting audits?
Phase 3	Data Access	Data Visualisation	Which audits type out of Financial Audit, Performance Audit, Certification Audit requires the most need of data visualization?
Phase 3	Data Access	Data Visualisation	To what extent is our SAI satisfied with the available Data Visualization tools/technical skills capacity for conducting audits within our SAI?
Phase 3	Advanced Analytics	Machine Learning	Does our SAI operations utilize machine learning tools to enhance and automate its tasks when conducting audits? / If yes please mention which tools?
Phase 3	Advanced Analytics	Machine Learning	From our SAI expertise, is the type of data collected from the audit operations compatible with supervised learning techniques?
Phase 3	Advanced Analytics	Machine Learning	How familiar is our SAI with the concepts of supervised learning, unsupervised learning, and semi-supervised learning, as they apply to machine learning in the audits?
Phase 3	Advanced Analytics	Machine Learning	To what extent has our SAI used statistical techniques (e.g., Ridge Regression, Lasso, SVM, Decision Trees) in a machine learning context when conducting audits?
Phase 3	Advanced Analytics	Machine Learning	How familiar is our SAI with standard platforms and packages for machine learning, such as Tensorflow and Keras and its potential use in audits?
Phase 3	Advanced Analytics	Machine Learning	Which audits type out of Financial Audit, Performance Audit, Certification Audit has the best use-case for implementation of machine learning?

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Phase 3	Advanced Analytics	Internet of Things	How will new technologies such as internet of things affect the audit operations in the future? Is our SAI building capabilities to learn/incorporate this technology or does it plan to react/learn from its audit implications?
Phase 3	Advanced Analytics	Robotic Process Automation	Has our SAI organization experimented with Robotic process automation for audit processes?
Phase 3	Advanced Analytics	Robotic Process Automation	Does our SAI consider Robotic Process Automation to be an effective tool for its own use when conducting audits?
Phase 3	Advanced Analytics	Robotic Process Automation	Do our SAI need to build capacity for use of RPA technology in audits?
Phase 3	Advanced Analytics	Robotic Process Automation	Which audits type out of Financial Audit, Performance Audit, Certification Audit would be ideally suited for application of RPA technology?
Phase 3	Advanced Analytics	Blockchain	Does our SAI have current or planned capacity to audit a Blockchain system?
Phase 3	Advanced Analytics	Blockchain	Does our SAI need Blockchain audit capacity within next 5 years?
Phase 3	Advanced Analytics	Blockchain	Is our SAI's government implementing Blockchain based applications in public sector?
Phase 3	Advanced Analytics	Cyber Security	Is Cyber Security audit included in our SAI's audit scope?
Phase 3	Advanced Analytics	Cyber Security	To what extent is our SAI satisfied with its Cyber Security/Information Systems Audit capacity?
Phase 3	Advanced Analytics	Cyber Security	Does our SAI need to perform advanced cyber security audits?
Phase 3	Advanced Analytics	Cyber Security	Does our SAI use any tools (e.g., penetration testing tools) to preform cyber security audit?
Phase 3	Advanced Analytics	Cyber Security	Is our SAI mandated to conduct audits of advanced cyber security government infrastructure or a separate entity conduct those audits? If a separate entity conducts the audit, does our SAI review the extent, appropriateness and coverage or such audits during our own routine post audits.
Phase 3	Advanced Analytics	Cyber Security	Does our SAI have the relevant expertise within its cyber security audit teams?
Phase 3	Advanced Analytics	Natural Language Processing	To what extent has our SAI used standard techniques to process and clean text data – e.g., web-scraping, stemming, lemmatization, stop-words when conducting audits?
Phase 3	Advanced Analytics	Natural Language Processing	To what extent has our SAI used common algebraic techniques for vectorising and comparing words and documents – e.g., document-term matrix, term frequency-inverse document frequency, cosine similarity when conducting audits?
Phase 3	Advanced Analytics	Natural Language Processing	To what extent has our SAI used machine learning algorithms for creating word and document embeddings – e.g., Word2Vec, Doc2Vec, GloVe when conducting audits?
Phase 3	Advanced Analytics	Natural Language Processing	Which audits type out of Financial Audit, Performance Audit, Certification Audit would be the best use-case for Natural language processing implementation when conducting audits?
Phase 3	Advanced Analytics	Process Mining	To what extent has our SAI used data science techniques to mine and improve operational processes that are in scope of our audits?

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Phase 3	Limitations	Limitations	To what extent does the SAI have a mandate to audit Information Systems?
Phase 3	Limitations	Limitations	To what extent does the SAI face challenge in auditing Government Information Systems?
Phase 3	Limitations	Limitations	To what extent is there a need to change legislation on the SAI for an explicit mandate to audit IS?
Phase 3	Limitations	Limitations	To what extent does our SAI have the mandate to audit advanced and emerging technologies like Blockchain, Artificial Intelligence etc? Or we will need enabling legislation?
Phase 3	Limitations	Limitations	To what extent does our SAI get unhindered access to electronic data at government, or we face challenges of refusal (citing sensitivity/confidentiality of data) or delays?
Phase 3	Limitations	Limitations	To what extent are there any limitations on us that restricts the SAI from storing historical electronic data of government for more than a number of years?
Phase 3	Limitations	Limitations	To what extent are there any limitations on our SAI for merging and comparing data from different sources and performing drill-across analysis of data from different sources/government entities?
Phase 3	Limitations	Limitations	Can our SAI share data across different audit teams from different audit clients?
Phase 3	Limitations	Limitations	To what extent does our SAI have the necessary workforce skills and experiences in auditing emerging technologies?
Phase 3	Organization and processes	Leadership and governance	Is there representative that is responsible for leveraging on technological advancement in audits at our SAI? Who owns the tech agenda at our SAI?
Phase 3	Organization and processes	Leadership and governance	Is there a clear view on the technical SAI capabilities requirements across the SAI to support use and audit of technology?
Phase 3	Organization and processes	Leadership and governance	Does our SAI have a vision for leveraging on technological advancements when conducting audits?
Phase 3	Organization and processes	Leadership and governance	Is technology dimension included in the Strategy of our SAI?
Phase 3	Organization and processes	Leadership and governance	Is the SAI's tech strategy based on identified needs? How are needs identified?
Phase 3	Organization and processes	Leadership and governance	Is technology aspects included in the Operational plans at our SAI?
Phase 3	Organization and processes	Leadership and governance	Are technological components included in the audit plans at our SAI?
Phase 3	Organization and processes	Leadership and governance	Were technological aspect of strategy and/or operational plan clearly communicated to audit employees?
Phase 3	Organization and processes	Leadership and governance	Do auditors agree with the current technological plans and believe in the expected outcomes?
Phase 3	Organization and processes	Leadership and governance	Do tech and audit employees know how their job contributes to the success of the established tech components?

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Phase 3	Organization and processes	Leadership and governance	Do all employees know the future of the organization - how it intends to leverage on technology when conducting audits?
Phase 3	Organization and processes	Leadership and governance	How technological aspects in strategy, operations and audit plans are developed and monitored?
Phase 3	Organization and processes	Leadership and governance	Were technology experts involved in strategy, operational and audit plan development?
Phase 3	Organization and processes	Leadership and governance	Does the organization have a strategic plan that identifies resource needs for use and/or audit of technology?
Phase 3	Organization and processes	Leadership and governance	Is there a budget allocated to the technological aspects of using and/or auditing technology at our SAI?
Phase 3	Organization and processes	Leadership and governance	Is top leadership involved in the work related to use and audit of technology at our SAI? How?
Phase 3	Organization and processes	Organization and processes	Do audit employees have the necessary tool and technologies to do their job successfully?
Phase 3	Organization and processes	Organization and processes	Do audit employees have the access to information necessary to do their job successfully?
Phase 3	Organization and processes	Organization and processes	Is there a procedure or methods for sharing the information within the organization?
Phase 3	Organization and processes	Organization and processes	How are we organized internally (e.g., centralized technology team, tech expert within audit teams, outsourcing tech-related work)?
Phase 3	Organization and processes	Organization and processes	Are there people in place with the required skills to implement the activities related to use and/or audit of technology?
Phase 3	Organization and processes	Organization and processes	How audit and technology departments delegate responsibility?
Phase 3	Organization and processes	Organization and processes	How communication between tech and audit teams and management is organized?
Phase 3	Organization and processes	Organization and processes	Is tech staff involved in all 3 audit types (financial, compliance, performance)?
Phase 3	Organization and processes	Organization and processes	Are we efficient in the cross-team communication and involvement of the tech staff in audits?
Phase 3	Organization and processes	Organization and processes	What are the key activities that we are taking now in order to use and audit technologies?
Phase 3	Organization and processes	Organization and processes	Do we have documented operational audit and tech processes? Are they easy to understand? Are they detailed enough?
Phase 3	Organization and processes	Organization and processes	Is the workflow clearly outlined and understood in technology, audit and cross teams?
Phase 3	Organization and processes	Organization and processes	Are lines of authority established so employees know who to go for what information?
Phase 3	Organization and processes	Organization and processes	Are lines of responsibility defined between tech and audit teams?
Phase 3	Organization and processes	Organization and processes	Is there a common understanding of technology use and audit across the organization? Does everyone understand the role of tech people in the audit project?
Phase 3	Organization and processes	Organization and processes	Are our processes for use and/or audit of technology standardised and repeatable?

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Phase 3	Organization and processes	Organization and processes	Is use of technology streamlined in the audit projects (FA, CA, PA) or technology is used ad hoc?
Phase 3	Organization and processes	Organization and processes	How is the audit project initiated and how is technology taken into account?
Phase 3	Organization and processes	Organization and processes	How do we identify a need for use of technology or technology audit in the audit projects?
Phase 3	Organization and processes	Organization and processes	At what stages of audit process tech staff is involved into the audit project?
Phase 3	Organization and processes	Organization and processes	What is the process to involve tech personal in the audit project?
Phase 3	Organization and processes	Organization and processes	What is the role and responsibilities of tech staff in the audit project?
Phase 3	Organization and processes	Organization and processes	How results of work done by tech staff is incorporated in the final audit deliverables?
Phase 3	Organization and processes	Organization and processes	How are internal resources planned in the audit engagements? How is the resource capacity managed?
Phase 3	Organization and processes	Organization and processes	Is the need-gap analysis to identify organizational needs for additional staff, software licenses, hardware required for use and/or audit of technology is organized? How often and how is it conducted?
Phase 3	Organization and processes	Organization and processes	How is the tech audit knowledge managed and exchanged?
Phase 3	Organization and processes	Organization and processes	How is quality control process organized in our organization?
Phase 3	Organization and processes	Organization and processes	How do we evaluate performance of technology use or technology audits?
Phase 3	Organization and processes	Organization and processes	How do we continuously monitor and improve our existing processes related to use and/or audit of technology?
Phase 3	Organization and processes	Organization and processes	Is there an established feedback process between audit and technology team?
Phase 3	Organization and processes	Organization and processes	Do tech employees feel involved in the audit process?
Phase 3	Organization and processes	Organization and processes	Do tech employees feel involved in the decision making?
Phase 3	Organization and processes	Organization and processes	Do tech employees feel they can disagree and openly share own opinion?
Phase 3	Organization and processes	Organization and processes	Do tech employee feel ownership for the whole piece of work delegated to them?
Phase 3	Organization and processes	Organization and processes	Are tasks assigned to tech employees are well understood and agreed upon?
Phase 3	Staffing and Resources	Staffing	What type of people talents do we need in order to be able to use and audit technologies that are in our scope?
Phase 3	Staffing and Resources	Staffing	What percentage or number of audit staff are aware of emerging technologies?
Phase 3	Staffing and Resources	Staffing	What percentage or number of audit staff are trained to conduct Information Technology Audits?
Phase 3	Staffing and Resources	Staffing	What percentage or number of audit staff are able to conduct audits involving emerging technologies?
Phase 3	Staffing and Resources	Staffing	What percentage or number of SAI audit staff have data analytic skills?

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Phase 3	Staffing and Resources	Staffing	Has each tech-related audit job been analysed for corresponding competency needs?
Phase 3	Staffing and Resources	Staffing	Have the skills necessary for each tech-related audit position been identified?
Phase 3	Staffing and Resources	Staffing	Do the technological changes warrant a review of staff profiles?
Phase 3	Staffing and Resources	Staffing	Has the organization documented tech-related audit positions needed and staffing status?
Phase 3	Staffing and Resources	Staffing	Does each tech-related audit position have an updated position description or outline of roles and responsibilities?
Phase 3	Staffing and Resources	Staffing	Are all key tech-related audit positions filled or is there active recruitment to fill gaps?
Phase 3	Staffing and Resources	Staffing	Is there a staffing plan to ensure availability tech-related audit resources? Short or long term?
Phase 3	Staffing and Resources	Staffing	Does our SAI have enough skilled, qualified audit staff (with technical capabilities) to effectively use and audit technologies?
Phase 3	Staffing and Resources	Staffing	Is there audit staff with the required skills (may include data analytics, data science, machine learning, big data, data visualisation, natural language processing, process mining, robotic process automation, cloud, IoT, IT audits, penetration testing, ethical hacking and/or cybersecurity skills) in our SAI?
Phase 3	Staffing and Resources	Staffing	Do we have ICT dedicated audit staff? Do we have enough?
Phase 3	Staffing and Resources	Staffing	What are the key capabilities already present in our audit department at the SAI from technological aspect, data science and analytics (data access, data processing, data visualization, machine learning, natural language processing, process mining), understanding recent developments in technology (for auditing), using specific programs (GIS, financial databases, audit testing or audit operation software etc)?
Phase 3	Staffing and Resources	Staffing	Do our financial, performance and/or compliance auditors have a good understanding of modern technologies, its implications and potential use cases in the audit projects?
Phase 3	Staffing and Resources	Staffing	Does our HR staff have tech understanding to deal with tech-related audit candidates?
Phase 3	Staffing and Resources	Staffing	Does our audit staff know the field - are they able to find right professionals for data analysis when there is need?
Phase 3	Staffing and Resources	Staffing	What process is there to ensure that audit staff have the qualification and skills for their positions?
Phase 3	Staffing and Resources	Staffing	Is there enough technology-related work to utilize our tech-related audit professionals to the full extent?
Phase 3	Staffing and Resources	Staffing	What kind of training we need for our audit staff in order to be able to use and audit technologies that are in our scope (for both - obtaining new and maintaining existing skills)? Any certification required?

Phase	Pillar	Subject	Question to consider
Phase 3	Staffing and Resources	Staffing	Are our audit professionals well trained on how to use and audit technologies through internal/external training programmes? How often technology-related audit staff participates in training and skills development programmes?
Phase 3	Staffing and Resources	Staffing	Is there a tech syllabus for auditors at our SAI?
Phase 3	Staffing and Resources	Staffing	Is there a documented policy for recruiting, selecting, engaging, and managing/supervising volunteers and interns for the audit department?
Phase 3	Staffing and Resources	Staffing	Are there clear career paths for audit staff with technical qualifications?
Phase 3	Staffing and Resources	Staffing	Are there an evaluation practices to assess tech-related audit staff performance and identify potential developments?
Phase 3	Staffing and Resources	Staffing	Do we have a tactic for keeping technical audit staff from moving to the private sector or other organisations?
Phase 3	Staffing and Resources	Staffing	What is the current state of the employment market? How easy it is to recruit and retain audit staff with required technical skills?
Phase 3	Staffing and Resources	Staffing	Can we access new specialized talent from local universities or industries for specific projects?
Phase 3	Staffing and Resources	Resources	Is the SAI equipped with the necessary tools to incorporate data analytics in its audit processes?
Phase 3	Staffing and Resources	Resources	Do we have enough workstations (e.g., desktop computers, laptops) or other required technological appliances for the purpose of use and/or audit of technology?
Phase 3	Staffing and Resources	Resources	Is our hardware powerful enough to run the required audit and analysis tools?
Phase 3	Staffing and Resources	Resources	What tools/licenses we have for auditing? What IT tools/technologies are used in each audit type (FA, CA, PA)?
Phase 3	Staffing and Resources	Resources	What tools/licenses we need to use and audit technologies that are in our scope?
Phase 3	Staffing and Resources	Resources	Do we have enough software licenses (e.g., audit software, analytics tools) for conducting audits?
Phase 3	Staffing and Resources	Resources	Do we have servers / cloud storage that are used in the audit projects (e.g., for analysis of the large data volumes)?
Phase 3	Staffing and Resources	Resources	Do we have a sufficient infrastructure to extract, store, process, analyse data from the audited entities?
Phase 3	Staffing and Resources	Resources	Do we develop IT solutions for audit purposes internally? What are these solutions? Are they reusable?
Phase 3	Staffing and Resources	Resources	Are our auditors satisfied with the current IT resources and capabilities?

Phase	Pillar	Subject	Question to consider
Phase 3	Staffing and Resources	Resources	Are we able to identify need and choose the right software for use in the audit projects and for auditing IT?
Phase 3	Staffing and Resources	Resources	Are we able to procure the right software for use in the audit projects and for auditing IT?
Phase 3	Staffing and Resources	Resources	Do we have remote working capacity for processing and analysing audit data?
Phase 3	Key partners	Knowledge exchange	Are there national universities or institutes that offer majors and programs in digital business and technology audits?
Phase 3	Key partners	Knowledge exchange	Are we members of the knowledge-based communities of practice on use and/or audit of technologies?
Phase 3	Key partners	Knowledge exchange	Are we partnering with other audit organisations for knowledge exchange purposes on technology use and audit?
Phase 3	Key partners	Knowledge exchange	Are we partnering with universities or other educational institutions on the knowledge exchange on the technology use and/or audit?
Phase 3	Key partners	Knowledge exchange	Are we partnering with government agencies or civil society organizations on the knowledge exchange on the technology use and/or audit?
Phase 3	Key partners	Project delivery	Do we partner with organizations within SAI community (e.g., another SAIs, regional secretariat, INTOSAI, IDI) for delivering audit projects where technologies are used or audited?
Phase 3	Key partners	Project delivery	Do we partner with organizations outside SAI community (e.g., government agencies, educational institutions, civil society organizations) for delivering audit projects where technologies are used or audited?
Phase 3	Key partners	Project delivery	Do we contract external private organizations (e.g., government agencies, educational institutions, civil society organizations) for delivering audit projects where technologies are used or audited?
Phase 3	Key partners	Project delivery	Are we open to outsourcing parts or whole technology function to the local private sector (e.g., outsourcing data analytics, IT audit services) when conducting audits?
Phase 3	Key partners	Project delivery	What is the current state of expert market? Are we able to find and contract the right private tech organization when conducting audits?
Phase 3	Key partners	Project delivery	Is there an international private sector partner ready and willing to support us on use or audit of technology in audit projects?
Phase 3	Key partners	Risk Management	Did we perform an analysis on what is the most resource-effective way for us to use external partners (e.g., adhoc outsourcing contracts, framework agreements) when conducting audits?
Phase 3	Key partners	Risk Management	Are our current partnerships with local private sector organizations formalized?

Phase	Pillar	Subject	Question to consider
Phase 3	Key partners	Risk Management	How are the operational (e.g., data security) and contractual risks (e.g., delays, overcharge) are being managed and mitigated?
Phase 3	Key partners	Risk Management	How dependent we are on external suppliers?
Phase 3	Key partners	Risk Management	Are we successful on saving the experience and knowledge on the project delivery when working with external partners?
Phase 3	Key partners	Risk Management	Are we managing our strategic partners effectively, including list of primary and back up suppliers?
Phase 3	Key partners	Risk Management	How external technology services for the audit projects are being procured now?
Phase 3	Key partners	Project delivery	Do we have a possibility to promptly include external professionals when conducting audits?
Phase 2	Examine the Ecosystem	Outcome	How can we prepare and regularly update a list of government technologies?
Phase 2	Examine the Ecosystem	Outcome	What are the technologies in the government that we need to audit?
Phase 2	Examine the Ecosystem	Outcome	What are the audit project where we could benefit from use of technology?
Phase 2	Examine the Ecosystem	Outcome	What technology-related projects I should include into Audit Strategic Portfolio?
Phase 2	Examine the Ecosystem	Outcome	Should we review the audit plans to include technology component?
Phase 2	Examine the Ecosystem	Outcome	What are our needs in terms of technology, skills, experience to do the required job?
Phase 3	Internal environment	Outcome	How efficient we are now with auditing technologies in the government? Why?
Phase 3	Internal environment	Outcome	How efficient are we with use of technology in audits? Why?
Phase 3	Internal environment	Outcome	What are the gaps between needs and current capacities of our SAI?