



Use of technology in audits – observations, risks and further evolution

2023

This report, released on November 1, 2023, presents perspectives on the use of technology in audits.

Established in 2006, the International Forum of Independent Audit Regulators (IFIAR) comprises independent audit regulators from 54 jurisdictions representing Africa, North America, South America, Asia, Oceania, and Europe. Dedicated to serving the public interest and enhancing investor protection, IFIAR provides a platform for dialogue and information-sharing regarding audit quality matters and regulatory practices around the world and promotes collaboration and consistency in regulatory activity.

Background

IFIAR, a membership organization of independent audit regulators (“Members”) from 54 jurisdictions, with the shared goal of enhancing audit oversight globally by promoting consistently high-quality audits, has undertaken several activities on the use of technology in audits. These activities have included:

- Ongoing dialogue with the six large global audit firm networks on the Global Public Policy Committee (“GPPC networks”)¹ to understand their approach to the use of technology in audits.
- Accumulating insights on technology related inspection findings and inspection approaches from IFIAR Members through its annual survey of inspection findings.
- Sharing among IFIAR Members information on inspection approaches for audits using technology in various capacities including workshops, and task force and working group meetings.

Through these activities IFIAR has identified a number of observations and insights that we believe will be of interest to a broader audience including audit firms, standard setters, investors, those charged with governance and other regulators. These observations are intended to encourage a conversation aimed at realizing the audit quality benefits of the use of technology and appropriately addressing the associated risks.

Executive Summary

How technology is used in the audit is important as it impacts how audits are being performed today and how audits will be performed in the future. The use of technology tools in the audit has the potential to improve the quality and relevance of the audit and provide better protection to investors and other users. The integration of emerging technology in the audit remains at an early stage which presents an opportunity for auditors to build in appropriate controls and processes to ensure that risks related to the use of technology are appropriately addressed from the outset. This includes building processes to monitor the deployment of technology across global audit firm networks and to evaluate and challenge the audit quality impact proactively and respond to areas noted for improvement. To date, technology related themes from IFIAR Member inspections include verifying the accuracy and completeness of underlying data and the sufficiency of testing of exceptions identified by automated tools and techniques. As emerging technologies like artificial intelligence are integrated into the audit, it will also be important to build appropriate controls to ensure that tools and their algorithms are fully understood by the auditor and the rollout is properly managed and controlled.

¹ Each of the GPPC networks is comprised of a group of legally separate firms operating locally in countries or regions around the world. The GPPC networks participate in the Global Public Policy Committee (GPPC), represented by the following entities: BDO International Limited, Deloitte Touche Tohmatsu Limited, Ernst & Young Global Limited, Grant Thornton International Limited, KPMG International Cooperative, and PricewaterhouseCoopers International Limited.

Overview and key messages

Around the world we are seeing significant advances in the development of emerging technologies. Of particular interest to IFIAR is the audit quality impact of the use of technology by audit firms on audits and the impact of the use of emerging technologies by entities that are being audited. IFIAR Members have seen a significant focus by GPPC firms on developing and updating their audit platforms and other automated tools and techniques (ATTs). This focus has included steps to improve the user experience for audit teams, automate and simplify important audit procedures and develop and implement standardized workflows to ensure audit procedures are performed consistently.

IFIAR Members also have observed the use of automated tools and techniques in their inspections. These ATTs include data analytics, process mapping and other tools to support the audit process. Inspections have identified several areas for improvement with regard to the use of ATTs. The GPPC networks have also indicated that future technology pipelines include the use of more advanced technology such as artificial intelligence and advanced data analytics.

IFIAR is supportive of the continued evolution of the audit, including the increased integration of technology in the audit process to the extent that audit quality is not compromised. To fully maximize the positive impact on audit quality we encourage audit firms, standard setters and other regulators to consider the following actions:

- Implement/enhance processes to comprehensively monitor the deployment of ATTs and other technological resources in audits and evaluate the impact on audit quality.
- Build appropriate safeguards into the use of emerging technologies (including artificial intelligence) to ensure the integrity of the audit process including taking steps to avoid bias and ensuring the function and output of ATTs is reliable and explainable.
- Proactively develop and evaluate approaches to mitigate risks arising from the increasing use of technology including execution risk, and the risk of over-reliance on technology and a related reduction in professional skepticism.

At the same time, it is also important for the users of financial reports and those charged with governance to have a better understanding of how the information they use is being audited, even at a high level. In that context, IFIAR encourages the broader stakeholders in the financial reporting ecosystem to be aware of the evolution of the audit, including the increasing use of technology, as illustrated in the topics discussed below.

Usage of automated tools and techniques in audits of listed entities

IFIAR issues an annual inspections findings survey (“survey”) to its Members which includes questions regarding the use of technology and ATTs by the GPPC networks. As part of the information gathered during the 2022 survey, IFIAR Members reported that they observed ATTs being used to support audit work in one or a combination of the following areas:

1. The risk assessment process for a significant class of transactions or a specific financial statement line item.
2. Journal entry testing to address the risk of fraud or management override of controls.
3. Performance of further audit procedures which may include testing internal controls or performing substantive procedures.
4. Automation of audit procedures (including the use of robotic process automation) to improve the efficiency and accuracy of repetitive tasks in the audit.

Specifically, survey responses from IFIAR Members show a range of adoption of ATTs in the audits of listed entities with a high level of usage to support testing of journal entries and data analytics tools for risk assessment and further audit procedures as follows:

Types of ATTs observed in audit files	Number of Members providing a response (from a total of 54 Members)	Percentage of respondents having noted the use of ATTs in listed company audits
Journal entry testing	46	100%
Data analytics – risk assessment	43	88%
Data analytics – internal controls testing and/or substantive audit procedures	45	91%
Robotic Process Automation	36	25%

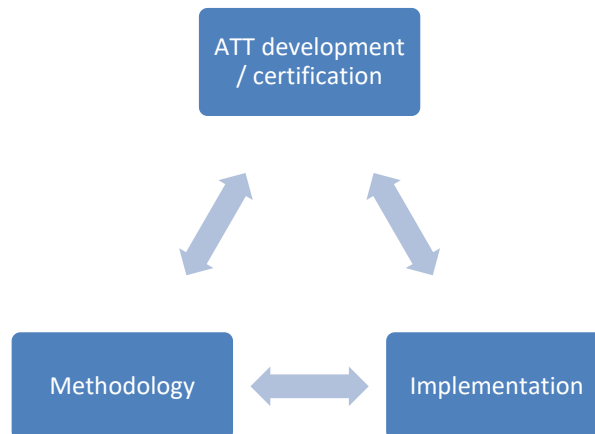
Based on the 2022 survey responses, IFIAR Members generally have not seen the use of artificial intelligence in their inspections of audits of listed companies.

Integrated approach to development and implementation

The effective development and implementation of technology in audits is reliant on effective processes and controls for each of the following:

- (1) Development/acquisition and certification of ATTs by audit firms for use by engagement teams.
- (2) Developing audit methodology that guides the use of ATTs in accordance with the applicable auditing standards.
- (3) Supporting the implementation and use of ATTs by engagement teams in accordance with their intended functional objectives. This includes adequate training of audit staff on the functionalities of ATT, monitoring of usage and deployment and taking steps to evaluate whether the related audit quality objectives are met.

This continuous cycle is illustrated by the “technology triangle” depicted below.



For global audit networks, the effective implementation of technology will need the integrated efforts of each of the network’s global entity², member firms and local engagement teams. The articulation of the responsibilities of each of these parties and effective monitoring and response to changes in the technology is essential to achieving the objective of consistently high levels of audit quality.

Findings regarding the use of ATTs in audit file inspections

Given that the use of technology is an emerging area, it is important to understand any common findings identified by IFIAR Members through their inspections. This may assist audit firms to identify where methodology, policies or procedures may need to be updated to account for and manage the appropriate use of approved ATTs. More frequently identified technology related inspection findings include:

- Insufficient testing of exceptions, such as:
 - Instances where the auditor tested a sample of individual exceptions without providing the justification that a sampling approach was appropriate.
 - Instances where the auditor concluded that exceptions were not indicative of potential misstatements without performing the necessary procedures to justify this conclusion.
- ATTs not used in accordance with its intended objective, for example:
 - ATTs used in an industry or for an entity with additional complexity or where the ATT was not designed to provide sufficient, appropriate audit evidence.
 - ATTs developed by engagement teams had not been reviewed at an appropriate level to ensure they were functioning adequately prior to their use in an audit engagement.
- Underlying data not tested appropriately (accuracy and completeness). Observations related to this area include:
 - Lack of testing to ensure the data obtained from a client was identical to the data within the client’s IT systems. Members also noted instances where data was not agreed to supporting documentation through a sampling or other testing approach.

² The legal entity that centrally coordinates the activities of a global audit firm network. The global entity does not provide audit services.

- In certain cases, the specific attributes of the data used by the ATT is dependent on the internal controls within the entity. IFIAR Members found instances where these internal controls were not subject to testing to support the accuracy and completeness of the data.
- Insufficient analysis of the results produced by the use of an ATT.
- Over-reliance on ATTs and weaker exercise of professional judgment and skepticism.
- Insufficient testing of IT general controls to support the integrity of data used by an ATT, where this was required.

Monitoring deployment of ATTs and the audit quality impact

The use of technology has significant potential to improve audit quality and efficiency through supporting audit teams in better understanding the entity and its transactions and to increase the focus of audit efforts on areas of higher risk. However, the increased use of technology creates additional risks including over-reliance on technology, failure to appropriately apply professional skepticism and inappropriate use of technology tools or in situations where a tool is not fit for purpose.

It is important that each network's Global entity management team understand how this technology is being used in practice by member firms on audits and its impact on audit quality.

Monitoring deployment of ATTs

In most cases, IFIAR members have observed that the network Global entity will have a small number of ATTs or other technological resources that member firms and their engagement teams are required to use. The most common example is the audit firm's core audit platform. Beyond this, specific decisions on which ATTs and/or optional modules are used and how they are deployed are generally at the discretion of network member firms but mostly individual audit teams.

For some GPPC networks the tracking and understanding of how frequently ATTs and other technological resources are being used is generally the responsibility of the member firm without specific tracking at the network level, limiting the network firm's insights into deployment trends. Generally, global efforts at GPPC networks to track and understand the frequency of deployment of ATTs remains at an early stage. This approach is partly driven by technological limitations and/or jurisdictional confidentiality restrictions.

Evaluating the impact of technology and ATTs on audit quality

Based on IFIAR discussions with the GPPC networks, the primary method for the assessment of how engagement teams are using ATTs and the audit quality impact is through the network's quality monitoring program. This includes both the member firm and network monitoring programs, as applicable.

IFIAR observes that the annual quality monitoring program at each GPPC network is designed to achieve a variety of objectives, of which technology may form a subcomponent. Furthermore, the use of technological resources is one of many variables that can impact audit quality. As a result, it is difficult to identify a direct correlation between the use of technological resources and results from the network's

monitoring program or external inspection results. Accordingly, many firms do not have information to determine the link between the use of a particular technology and audit quality inspection results.

Future opportunities

The increased use of cloud-based audit platforms creates an opportunity, subject to jurisdictional confidentiality restrictions, to re-evaluate the tracking of deployment of ATTs and the evaluation of the audit quality impact of the use of these resources. A more targeted approach to the evaluation of the impact of technology on audit quality that is performed on a more real-time basis could identify issues on a timely basis leading to more effective and proactive responses.

The use of cloud-based platforms also has the benefit of faster and more efficient roll outs of new methodologies or changes in the audit approach, enabling scalable data analysis; this enables GPPC networks to more quickly respond to emerging issues and/or concerns raised through internal or external reviews on a continuous and close to real time basis. Cloud-based platforms may also improve the ability to track the usage of ATTs and other technological resources over a broader population of audit engagements.

Impact of technology evolution

The use of technology in audits will continue to evolve and change. This evolution presents the opportunity to improve the effectiveness and efficiency of the audit, provided that risks to audit quality are appropriately identified and managed.

At present, IFIAR Members have generally not seen the use of artificial intelligence (AI) in audits of listed entities. However, we are aware from discussions with the GPPC networks there are active projects to develop use cases and evaluate how AI can be incorporated into audits in the future.

The development and use of these emerging technologies creates opportunities and challenges for auditors and audit regulators including:

- Opportunities
 - Increased opportunity to understand the business and operations of entities being audited.
 - Increased opportunity to identify fraud.
 - Increased opportunity to automate routine procedures and focus on more complex transactions with higher audit risk.
 - Improvements to recruiting and retention of audit professionals.
- Challenges
 - Increasing complexity of audits impacting the skills, practical experience and expertise needed on audit teams.
 - Challenges for audit teams to understand and explain how the technology works and whether the conclusions reached or output provided by the technology is reliable.
 - Further over-reliance on tools with less professional skepticism applied.
 - Ensuring engagement teams have adequate training and knowledge of the use of ATTs in the audit.

Specific areas where changes could be expected over the short and medium term include:

Area	Changes / evolution	Potential areas of focus
Expanded / advanced use of data (including advanced analytics)	Increased capabilities to extract and use data will provide new opportunities to identify areas of audit interest and to allow an auditor to more effectively focus on areas of higher audit risk.	<ul style="list-style-type: none"> • Performing sufficient procedures to be comfortable with the reliability of external data used in models. • Understanding how the models identify areas of interest. • Addressing possible reduction in the application of professional skepticism.
Artificial intelligence (AI) and machine learning	Using emerging technologies to support the auditor, provide useful information and allow for better focus on significant issues (including better identification of areas of audit interest, improving fraud detection, etc.).	<ul style="list-style-type: none"> • Understanding AI algorithms including how the AI model was trained and tested and how it reaches its conclusions (explainability) and how the risk of bias is addressed. • Addressing over-reliance on technology and reduction in application of professional skepticism.