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Moving Internal Audit Deeper Into the Digital Age: **Part 3**

Beyond Theory — Scaling Automation Capabilities in Internal Auditing

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Beyond Theory—Scaling Automation Capabilities in Internal Auditing

Automation and cognitive technologies open the door to a level of efficiency and throughput never experienced before. As discussed in the previous two parts of this series, internal audit (IA) has a growing number of modern automation tools at its disposal, which can be used to expand audit scope, provide data-driven insight, and increase risk coverage. However, it's one thing to deploy a digital tool to enhance a specific process or control and entirely another to implement an automation program aimed at transforming the IA organization and moving it deeper into the digital age. The devil is in the details of widescale enablement, which requires humans to change alongside the technology.

Effectively scaling analytics and automation capabilities requires a thorough understanding of what automation is and isn't, along with focus, long-term commitment, and a clear vision of what a digitally enabled IA team looks like. It also requires bottom-up engagement across the entire IA team as well as a new mindset for auditing automation, as detailed in the second installment of this series, *Moving Internal Audit Deeper Into the Digital Age, Part 2: What Internal Audit Needs to Think About When Auditing Automation.* Operational challenges such as access to data, availability of development resources, the complexity of the technology landscape, and changes in audit requirements can also stand in the way.

The following six-step approach has been designed to assist IA leaders in overcoming these common hurdles to implementing a digitally enabled IA operating model. With them, IA leaders can more confidently begin to move analytics and automation beyond theory and toward actualization of the ultimate goal: creating an agile, insightful, and resilient IA organization that adds value to the business.

Strategic Vision

As IA moves deeper into the digital age, the IA organization needs a strategic vision as its "North Star" for digital transformation. What does success look like for your program? Why are IA groups investing so heavily in analytics and automation capabilities? Common strategic goals include expanding risk coverage, decreasing manual testing hours, and gaining and sharing new insights with business clients and stakeholders. Organizations have different opportunities and motivations, and many of them can be achieved with

various types of automation and cognitive technologies, not just robotic process automation (RPA).

Achieving this strategic vision requires unwavering commitment and consistent messaging from IA leadership, as well as the appropriate acquisition and alignment of human and financial resources. Often, digital transformation is more about modifying a long-established culture than it is about acquiring new skills or buying new software. Change can be difficult, since inconsistencies and biases can be rooted deep within language, audit methodologies, and incentives.

Not only is it essential to have a sound automation and analytics operating model, it is also important to have a strategy that supports and uplifts the existing workforce. Digital tools such as scheduled scripts, RPA, and artificial intelligence (AI) should not operate in silos, but rather they should work in tandem with the IA organization as a "digital workforce." For example, AI and RPA can be used to execute business-controls automations, perform data quality checks, prefill audit workpapers with system-generated metrics, and assist with Sarbanes-Oxley testing.

When auditors work alongside the digital workforce, IA departments can go beyond traditional table views to analyze data across multiple dimensions without bias while improving audit efficiency and building organizational resilience. Furthermore, the digital workforce can be scaled up or down as the business grows without incurring many of the traditional recruiting and training costs. Over time, the organization can become progressively more efficient. As it matures, it can also move away from sample-based testing and toward full-population testing—removing the guessing game while increasing the accuracy, completeness, and timeliness of audits. See **figure 1**.

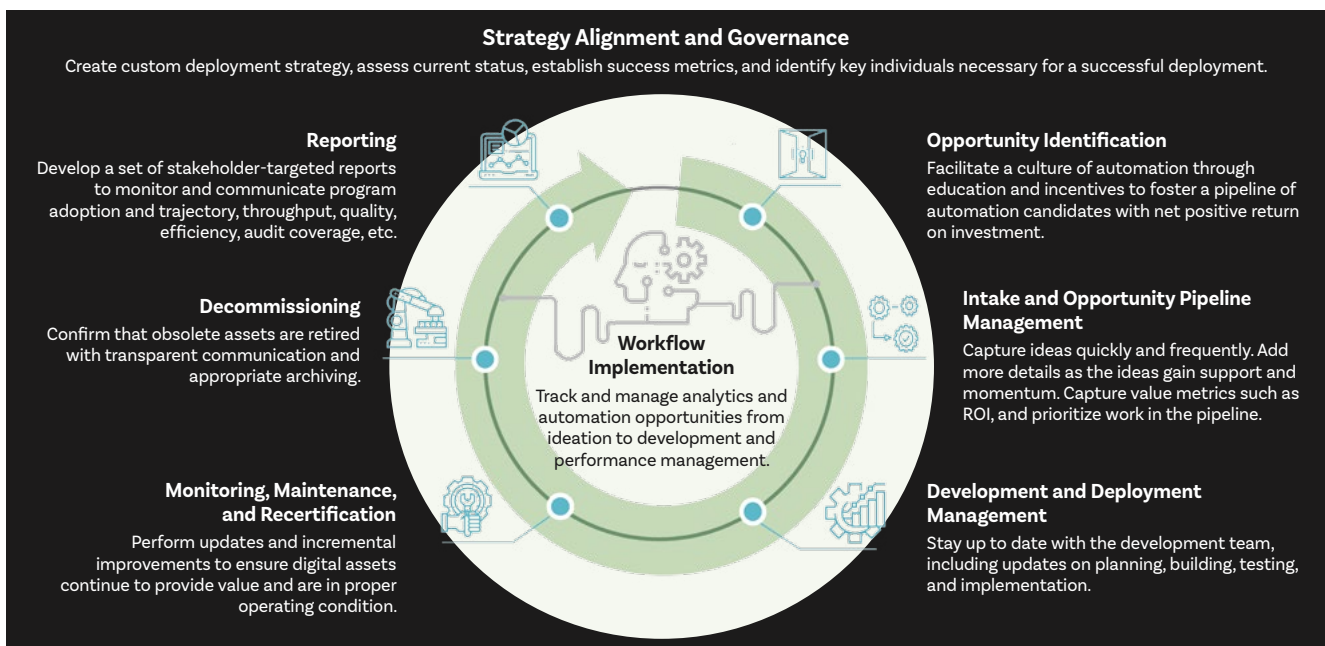**Figure 1: Workforce Transformation**
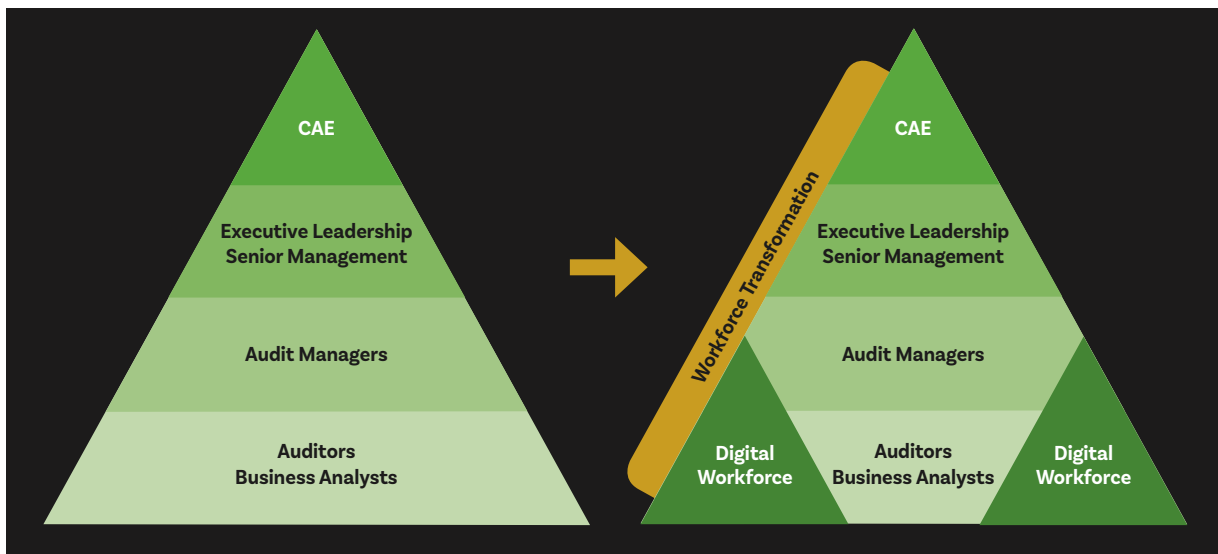
Additionally, IA's strategic vision should align with wider digital transformation initiatives underway across the organization. It's often preferable to leverage and reinforce the technology, training, and investments that the first and second lines of defense are undertaking. While objectivity and independence are part of IA's role, there are often opportunities to collaborate with other risk management functions without compromising independence. Leading organizations avoid reinventing the wheel by making the most of these relationships (for instance, by using a common risk taxonomy across the three lines of defense or by sharing development resources).

Digital Enablement in Action

Driven by a strategic vision, a mature, digitally enabled IA operating model should feature six key components that are connected by a workflow. See **figure 2**. While this list is not exhaustive, these components go a long way toward creating an environment that can address the most pressing goals for many IA organizations—namely, increasing risk coverage, reducing manual work, and producing data-driven insight.

Figure 2: Operating Model Overview

Strategy Alignment and Governance
Create custom deployment strategy, assess current status, establish success metrics, and identify key individuals necessary for a successful deployment.

Reporting
Develop a set of stakeholder-targeted reports to monitor and communicate program adoption and trajectory, throughput, quality, efficiency, audit coverage, etc.

Opportunity Identification
Facilitate a culture of automation through education and incentives to foster a pipeline of automation candidates with net positive return on investment.

Decommissioning
Confirm that obsolete assets are retired with transparent communication and appropriate archiving.

Intake and Opportunity Pipeline Management
Capture ideas quickly and frequently. Add more details as the ideas gain support and momentum. Capture value metrics such as ROI, and prioritize work in the pipeline.

Workflow Implementation
Track and manage analytics and automation opportunities from ideation to development and performance management.

Monitoring, Maintenance, and Recertification
Perform updates and incremental improvements to ensure digital assets continue to provide value and are in proper operating condition.

Development and Deployment Management
Stay up to date with the development team, including updates on planning, building, testing, and implementation.

1. **Opportunity Identification.** Also known as demand generation, opportunity identification kicks off the overall automation process by creating a pipeline of automation ideas. Having a structured methodology (which enables auditors on the front lines to better identify automation opportunities) is fundamental to the long-term achievements of an IA modernization program. This methodology should be capable of identifying high-potential automation

opportunities—those that deliver strategic value as well as cost savings, while progressively advancing the digital maturity of the organization. The idea is to move the organization beyond the low-hanging fruit to scale automation across a variety of high-value use cases. The characteristics of such a methodology are detailed in the first part of this series, *Moving Internal Audit Deeper Into the Digital Age, Part 1: A Structured Methodology for Leveraging Automation to Modernize the Audit Function.*

Beyond the methodology itself, the tone at the top, training, and culture are also important. Auditors need to be trained in the opportunity identification process and be inspired to contribute new ideas. Additionally, they should have access to technical training and technology discovery workshops so they can become familiar with both standard technical tools and newer "disruptive technologies." Such training can help auditors make the leap from "I didn't know we could do that" to "we can use X, Y, and Z techniques to enhance testing and provide insight." Moreover, idea-generation labs and auditor automation challenges, where auditors can brainstorm and work collaboratively in a spirit of friendly competition, can help to foster an innovation mindset. Also, forums, newsletters, and other communication vehicles that tout individual and group progress can be useful in building momentum.

2. **Intake and Opportunity Pipeline Management.** As automation opportunities are identified, they should be captured and queued in a pipeline for evaluation by management. This enables IA to establish an inventory of viable automation opportunities that can be vetted for potential duplicates and ultimately ranked. Once opportunities are identified and queued, the business requirements should be fully built out. Auditors should document the business justification, test objectives, systems and data sources involved, and each audit-test step of the intended automation. From here, auditors should engage with lines of business and application management to confirm that all of the systems and data sources have been identified, ideally down to the levels of database, table, and field, if applicable. Including sample reports or backend data in the documentation for the automation opportunity can be instrumental to developers as they orient themselves to the requirements. For each opportunity, several attributes should be captured for use in assessing return on investment (ROI). An approach to assessing ROI is outlined in the first part of this series. Once the ROI for each automation opportunity has been determined, audit managers can readily identify those with the highest value potential and prioritize them for development.

Proper intake and pipeline management also helps the organization to align opportunities with available resources. In an environment where development resources are often scarce, care should be taken to confirm that the size and skillsets of the resource pool match the desired overall development timeline and the diverse technology requirements of the automations.

3. **Development and Deployment Management.** Once opportunities have been queued, vetted for value, fully built out in terms of requirements, and aligned to development resources, the next step is to develop and deploy the automated solution. Automation requires a range of specialty skillsets such as data wrangling, querying, modeling, scripting/coding, and visualizing. These specialists may reside within the IA function or they may be co-sourced from external vendors or from other parts of the organization, such as a centralized data analytics group or RPA center of excellence (CoE), which often sits under IT.

    One challenge to note when co-sourcing work internally, such as from an automation CoE, is that these teams often use their own ROI models to prioritize requests. With large revenue-producing and cost-saving initiatives routinely coming into CoEs from across the enterprise, projects that generate smaller returns may get lost in the shuffle. For instance, their ROI models may overlook the value of increased assurance, or fail to recognize a moderate reduction in manual testing hours. Because the metrics used by these groups are generally not tuned for risk and assurance activities, some IA shops prefer to use their own developers, supplemented by external partners as needed. This approach is often preferable to vying for CoE resources.

    Effective implementation of a digitally enabled IA operating model requires strong collaboration with development resources. Workflow tracking should be handed off to the developers during the development and deployment phase, and key milestones should be reported back in the form of status updates. This back and forth allows developers to use tools that are best for their team while keeping the workflow up to date. This phase of the lifecycle ends by moving the developed product into a production environment that protects the digital assets from unintended or unapproved changes.

4. **Monitoring, Maintenance, and Recertification.** Moving an automated solution or dynamic report into production may mark the end of the development and deployment phase, but further commitments will still need to be met. The automation will need to

be monitored by operations for proper execution. Exceptions will need to be addressed, which may require additional development to refine the automation. Auditors often request updates and enhancements due to changing business processes or data sources. These maintenance jobs should be prioritized in the workflow like new requests. Given the relatively high value-to-effort ratio for updates and enhancements, these requests can often be addressed quickly.

An effective digitally enabled IA operating model also prescribes periodic recertification of every digital asset in production. Recertification periods may vary based on the product type or other factors. Recertifications have two main components: 1) an attestation by an *auditor* that the digital asset provides business value, and 2) an attestation by a *developer* that the digital asset is performing as intended.

Without recertification, resources can be wasted. For instance, an automation could be checking user-access list attributes for an application that has been retired. Or, an algorithm could be running queries against a data warehouse that stopped receiving live feeds when a new data lake came online.

Auditors and developers have joint responsibility for recertification. An effective workflow has the ability to maintain the recertification calendar and assign tasks to specific auditors and developers.

5. **Decommissioning.** Due to insurmountable maintenance costs, failure to be recertified, or other factors, digital assets will eventually need to be retired. Decommissioning procedures confirm that these assets are taken offline for the right reasons, that communication about the changes is thorough, and all documentation and relevant history have been archived.

6. **Reporting.** The successful long-term management of a digitally enabled transformation program hinges upon meeting goals and anticipating upcoming needs. That is why reporting should be robust, combining input from auditors, business analysts, developers, and IA leaders. It should also be visually compelling and offer a dashboard or portal for leaders to review several layers of performance information. Some potential reporting metrics include:

Metric	Phase of Operating Model	Description
Automation program progress	Strategic vision	Assess all controls to determine those that have automation potential. Tag controls as: 1) to be reviewed for automation potential, 2) no automation potential found, and 3) has automation potential. Further tag the latter as either automation in progress or automation complete. Express the aforementioned tags as percentages of the total number of controls in order to measure the progress of the automation program against the initial and ongoing strategic goals.
Value	Strategic vision	Determine how the organization defines value (e.g., risk/control coverage, audit efficiency and effectiveness, coverage of audit assertions such as completeness, hours saved, etc.).
Cost	Strategic vision	Track the hours involved from ideation to deployment. While developers are automatically expected to track their hours, IA personnel should also track the time they spend on developing or researching ideas, defining requirements, creating documentation, and managing changes.
Intake and opportunity pipeline status	Intake and opportunity pipeline management	Report on the number of automation opportunities identified, the relevant business areas, and the auditors who are involved. Track the opportunities approved for development, their progress within the automation lifecycle, and opportunities waiting for assignment. Organize the opportunities by business area and technology required and identify the types of automations in the pipeline. Use the annual time-savings estimates, which are part of the overall ROI calculation, and compare to a current baseline.
Capacity	Intake and opportunity pipeline management Development and deployment management	Track automation opportunities in the pipeline that are pending requirements definition or associated documentation, identify what is causing the delay, and determine why they are unassigned. State how long the opportunity has been in the pipeline and assess its current state (i.e., percentage of completion). List developers without projects as well as those currently engaged and provide insight into what they are working on.
Prioritization	Intake and opportunity pipeline management	List the prioritization queue and provide the status of the opportunities in the queue.
Development	Development and deployment management	Compile all completed, in-progress, and pending automation opportunities. Add details around types of technologies involved, access requirements, and developers assigned.
Monitoring, maintenance, and recertification	Monitoring, maintenance, and recertification	Develop metrics to gauge automation performance, including the number of automation failures and fixes. Explore root causes of these issues. Develop metrics related to automation recertifications. As the automation program matures, resources will need to be allocated to address the increasing volume of ongoing recertifications.
Decommissioning	Decommissioning	Track how many automations are decommissioned in a given period. Examine the time between deployment and decommissioning to determine the average lifespan of an automation.

Reporting frequency, format, and associated level of detail should be tailored to the audience and support decision-making. Managers charged with running the automation program will require more granular detail, perhaps daily. Audit automation-program leadership will require more of an overview, perhaps monthly, to confirm the program is on track.

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Workflow Design

Like the hub of a wheel, a structured workflow ties the six components above together into a cohesive cycle. An effective workflow tracks the automation lifecycle from opportunity identification to development and ultimately to decommissioning, and it is essential for scaling analytics and automation capabilities within IA. The workflow can be implemented using various applications, from spreadsheets or collaboration sites on the one end to custom-built systems or enterprise web platforms on the other. Ideally, the workflow system will have built-in reporting capabilities.

Regardless, the chosen workflow-enablement tool should give IA leaders the ability not only to track and monitor potential ideas and automation opportunities but also to review and approve them. There should also be a way to readily assign opportunities to developers who have the skills and the availability to develop the automated solutions. And, to close the loop, the tool should give IA leaders the ability to periodically review all of their digital assets and upgrade or decommission them as necessary.

A well-designed workflow is essential for unifying the overall process and holding all stakeholders accountable for their roles in the transformation. In addition, it accelerates automated solution deployment and provides the foundation from which to derive valuable process metrics. Such metrics include the number of ideas generated, prioritization lists, and anticipated ROI—not to mention development tracking, timing, and resource matching.

The Human Factor

Designing a digitally enabled IA operating model and developing automation and cognitive technologies is only half the story. The other half is auditors' ability to adapt to a different way of interacting with technology and information—and their capacity to think about the audit lifecycle and their role within it—in entirely new ways. For instance, automation and cognitive technologies can enable auditors to rethink their approaches to risk assessment and audit design while completely transforming fieldwork and reporting through full population testing and exception-based analytics. When approached with the relevant mindset, automation and cognitive technologies can provide increased accuracy, completeness, insight, and operational resilience by freeing auditors from mundane tasks so they can focus on analyzing and understanding risk.

However, effective adoption of a digitally enabled IA operating model depends largely on the organization's willingness to shift its culture. First and foremost, auditors should see cognitive and automation technology as a driver for positive change. Here, the tone is set from the top. IA leaders

should communicate the expectation that automation and cognitive technologies are permanent additions to the team that will increasingly enable IA's mission. They should also set strategic goals and communicate the vision for the organization, clearly defining a multiyear plan while providing adequate resources to support it.

Bottom-up engagement is equally important to the effectiveness of a digitally enabled IA operating model. Auditors should be incentivized not only to participate in the program but also to set high standards for planning and execution and to promote adoption of automation and cognitive technologies. Often, the incentives to use automation and cognitive technologies within an audit, and therefore take on extra risk, are misaligned with performance criteria, such as completing the audit on time and within budget. This misalignment can both discourage individual auditors and impair the overall program, since it sends mixed messages about the importance of digitally enabled transformation.

Conclusion

The three parts of this series collectively address how to move audit deeper into the digital age. More specifically, the first part examines how to leverage automation to modernize the IA function; the second part explores what IA needs to think about when auditing automation; and this third part, the final installment, offers a blueprint for scaling digital capabilities and transforming the audit lifecycle.

The three parts of the series share a common theme: ready or not, automation and cognitive technologies are here to stay. As such, these digital resources should be adequately governed and fully integrated into the operating model of the IA function. While the challenges of managing a digital workforce alongside a human one are significant, IA organizations that fail to incorporate these capabilities may be disrupted. Without the help of digital resources and talent, it is unlikely they will be able to keep up with the changing risk landscape and the evolving needs of the business.

As the velocity of change accelerates, the IA function has a fundamental choice: it can lead by embracing the future of work and showing other business functions how to develop and integrate digital resources, or it can follow and risk being left behind.

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Automation takes many forms, delivers many benefits at FedEx

The word "automation" often evokes thoughts of end-to-end robotics process automation (RPA). But, automation and advanced analytics can take many forms, all of which can potentially add value. As Francisco Bertorini, Manager of Audit Analytics for Internal Audit (IA) at FedEx, explained, progressively building automation capabilities and generating user-centered value step by step is often the method for highly complex organizations such as FedEx.

Given that both audits and applications vary greatly across operating segments and regions, the audit analytics team at FedEx is not seeking to automate complex global scenarios. Instead, it is leveraging automation across three straightforward, high-value use cases that were identified via demos and feedback sessions with audit teams.

1) Risk-assessment dashboards: These tools employ task automation with key risk indicators (KRIs) embedded in the models to enhance the IA department's risk-profiling capabilities. As Francisco explained, the idea is to identify emerging risks so the audit team knows where to allocate audit resources. At the push of a button, auditors can use the dashboards to identify where risks are emerging (for instance, in operating segments, cost centers, or geographies).

2) Next-level deep dive: Once auditors have a sense of where risks are emerging, they need to know more about what is taking place. Using automation and analytics, this next-level solution helps the IA team perform a deeper dive into the initial risk profile so auditors can see anomalistic activity and better understand what is happening at a more detailed level.

3) Task automation: Task automation tools focus on giving auditors the capability to quickly perform common audit test steps, such as fuzzy matching or key control testing. This can help reduce the time needed to build a testing plan, since auditors can jump right in and perform testing within the tool itself (for instance, by having the capability to quickly isolate and review vendor invoices).

The FedEx IA department built out these digital capabilities and is now planning for future ones. The initial work focused on building an analytics team that primarily did ad hoc analytics consulting on a project-by-project basis. Over time, the department's analytics acumen increased and now the analytics team has begun pivoting to its next phase, which focuses on providing greater insight and foresight to the business through digital innovation.

The analytics team leapt into this phase faster than anticipated due to the pandemic. "After COVID-19 forced many of us to work remotely, we started leveraging Agile principles to collect user stories and assess the needs of our audit team members across the globe," Francisco commented. "Whether those needs pertain to risk assessments, audit planning, audit-script testing, or something else, we are creating transparency across IA by using Agile-based approaches to understand what our audit team members need. We then rationalize and prioritize those requests to get the most bang for our buck in developing tools with the highest return on investment."

Once the automation opportunities have been identified and prioritized, the analytics team goes to work, essentially acting as developers. Periodically, they report back to the end users, showing them what they have developed so far and then incorporating their feedback into the next iteration. "Agile enables us to approach analytics and auditing like application development," observed Francisco.

Implementing a progressive, digitally enabled IA operating model would not have been possible, however, without strong executive leadership. Francisco elaborated, "Our chief audit executive (CAE) has provided the vision for audit automation. Also, our company CEO and chairman established three operating principles, one of which is to innovate digitally and bring automation to the way we work." This strong tone at the top has allowed the IA department to lay the foundation for robust analytical and digital capabilities, and it has also enabled the analytics team to leverage the enterprise's overarching cloud financials and analytics package. "By leaning into the enterprise data strategy and analytics applications, there are no licensing or technology costs for our audit analytics program—zero," said Francisco. "And, since we don't have to focus on the data management piece, we can spend more time in user-centered design thinking, which allows us to deliver speed to value at scale."

In communicating the value of this digital approach to the board and audit committee, Francisco explained that the CAE emphasizes the enhanced quality and effectiveness of the audits as well as the efficiencies gained in various phases of the audit lifecycle. He elaborated that IA may not be able to pinpoint the types of issues they do without using automation and advanced analytics. Thus, risk identification is essential to the value equation, along with the department's commitment to being trusted business advisors. "When presenting our stakeholders with audit findings and corrective action plans, it is about focusing on solutions that make a positive impact to the business, and I think we're doing a phenomenal job of leveraging technology to deliver insight and foresight," emphasized Francisco.

We expect the future state of the analytics program at FedEx will likely focus on gaining even greater efficiencies. Remote auditing has prompted the IA function to think differently about automation, particularly how they can tap into the various data sources that exist at FedEx. "We are working to develop an arsenal of analytics that give us the information we need without having to disrupt our audit stakeholders—in other words, our goal is to make planning, fieldwork, and reporting as efficient as possible for the end user," he concluded.

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