# Increase Your Data Analytics ROI

Action Steps for Internal Audit Leaders

Internal Audit FOUNDATION

Grant Thornton

# Contents

# **Executive** Summary

**The results are in.** Nearly 200 chief audit executives and directors weighed in on how they are using data and analytics to create and enhance value. Their insights can serve as a guide for enhancing analytic success and overcoming common roadblocks. Some of the key takeaways from the CAE survey respondents include:

- CAEs reported that analytic investments translate to tangible value.
- As the usage of data analytics increases, so does the perceived value.
- Value was achieved across internal audit activities (e.g., internal controls evaluation, fraud detection, compliance monitoring).
- CAEs reported a broad range of use cases to drive value (which are described in this report).

Below are some key trends and insights from the survey:

## The Power of Data Analytics

**94%** **of internal audit teams have prioritized analytics through dedicated analytic resources and/or training.**

**85%** **reported that analytics and automation add value to internal audit. Value is reported across all sizes of internal audit teams.**

## Top 3 Areas for Adding Value Through Data Analytics

- **Internal controls evaluation**
- **Fraud detection**
- **Compliance monitoring**

## Common Inhibitors of Analytics Progress

| | |
|---|---|
| **Data** | **Time** |
| **Talent** | **IT** |

## Opportunities to Increase Value

| | |
|---|---|
| **Continuous Auditing** | **Broader Risk Sensing** |
| **Data-Driven Board Reporting** | **Reduce IT Vulnerability** |

# **Reflecting** on Analytics Value

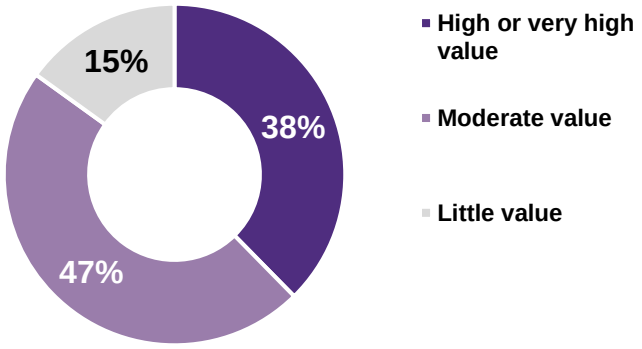
**Survey results** provide a glimpse into both the successes and challenges experienced by CAEs today.

The fact that 85% of CAEs reported moderate to very high value from their investments in analytics reinforces the benefits that can yield from the right focus and resources applied to data analytics (Figure 1).

## Value for Functions of All Sizes

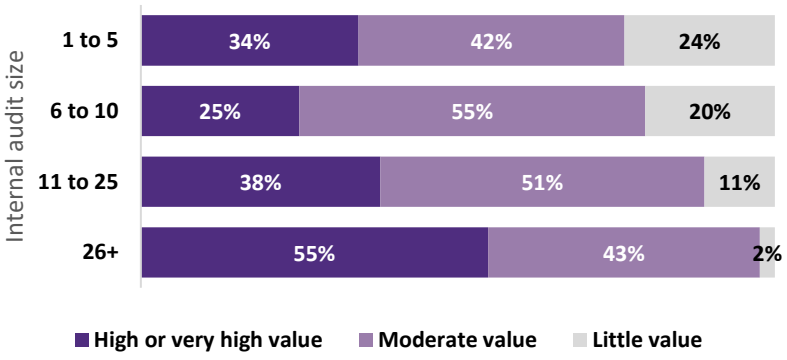
In addition, value was realized across all sizes of internal audit functions (Figure 2).

**Figure 1: Level of Value Created by Data Analytics**




*Note:* Internal Audit Foundation and Grant Thornton 2022 Data Analytics Survey, Q5: Overall, how much value has been created from internal audit's use of data analytics or automation at your organization? CAES and directors. *n* = 186.

**Figure 2: Level of Value Created by Data Analytics (Compared to Internal Audit Function Size)**



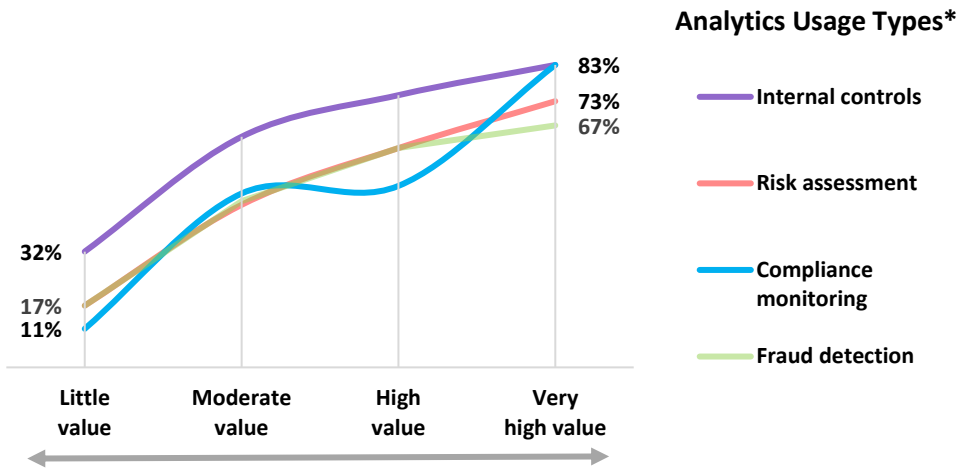

*Note:* Internal Audit Foundation and Grant Thornton 2022 Data Analytics Survey, Q5: Overall, how much value has been created from internal audit's use of data analytics or automation at your organization? CAES and directors. *n* = 186.

**Survey responses** were primarily received from CAEs and directors in North America. See Appendix A for more information.

## More Usage, More Value

Notably, as the use of data analytics increases, so does the perceived value from its usage (Figure 3). This is a positive indicator that data analytics adds value.

**Figure 3: Analytics Value Compared to Analytics Usage**
Organizations that report higher analytics value also have higher rates of analytics usage




*Note:* Internal Audit Foundation and Grant Thornton 2022 Data Analytics Survey, Q5: Overall, how much value has been created from internal audit's use of data analytics or automation at your organization? Compared to Q6: In which of these areas does your internal audit function currently use data analytics or automation? (Choose all that apply.) CAES and directors. *n* = 186.

# **Areas** of Benefit

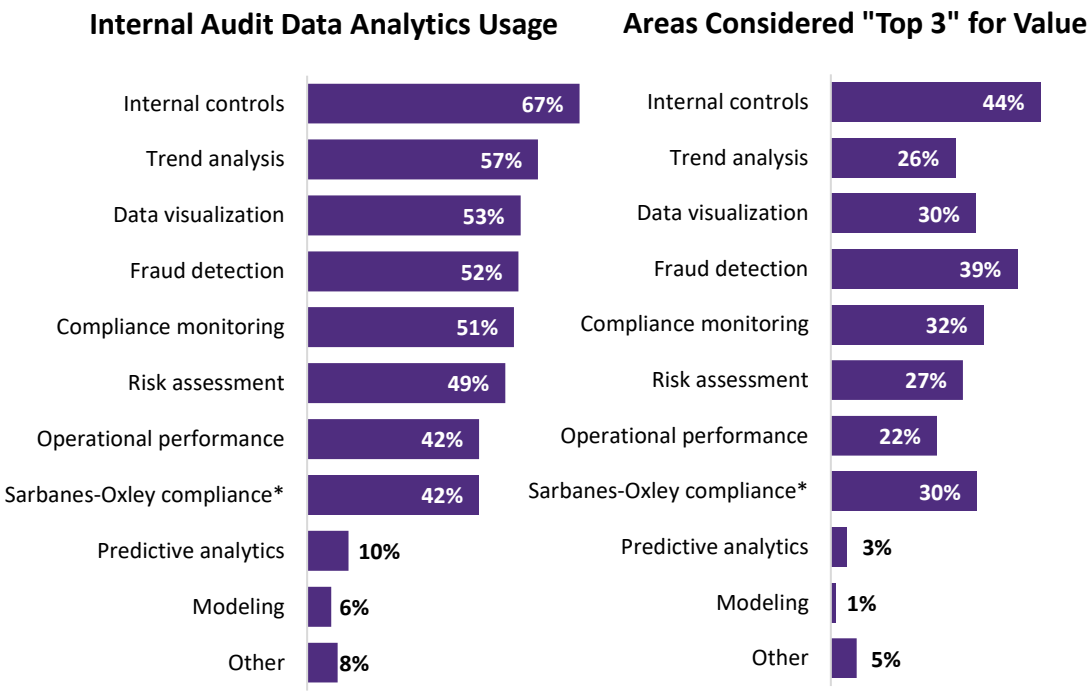
**CAEs provided key details** about how internal audit uses data analytics, the areas that produce the most value, and the specific types of data they analyze.

The most common usage of data analytics by internal audit was for evaluating internal controls (67%). In addition, 42% to 57% said they used data analytics for a wide range of other activities (Figure 4).

When asked for the three areas where data analytics provided the most value, CAEs focused on evaluation of internal controls, fraud detection, and compliance monitoring. In addition, 30% of functions involved in SOX compliance said this area was among the top 3 in providing value for them (Figure 4).

Notably, trend analysis and data visualization were commonly used techniques for data analytics, but the techniques by themselves were not necessarily considered to be value drivers.

**Figure 4: Internal Audit Usage and Value Perception for Data Analytics**




* Among functions with moderate or extensive SOX involvement

*Note:* Internal Audit Foundation and Grant Thornton 2022 Data Analytics Survey, Q6: In which of these areas does your internal audit function currently use data analytics or automation? (Choose all that apply.) Q7: What are the top 3 areas where data analytics or automation have yielded the most value for your organization? (Choose up to 3.) CAEs and directors. *n* = 186.

## Benefits Obtained From Data Analytics in the Top 3 Areas of Value

CAEs shared specific examples of analytics and automation activities that fall into the areas that they view as yielding the highest value to their internal audit activities. Their responses provide more context around the value that can be derived from more data-driven approaches. For example:

- **Assessment (i.e., testing) of internal controls** is often perceived to be of low value in mature control environments and monotonous to staff assigned to review such activities. Using a data-driven approach, the assessment of controls testing can be automated and allow for a shift in resource efforts to focus on exceptions and higher value operational audits.
- **Fraud detection**, while a more traditional domain of analytic processes, is also high value because it solves the "what am I missing?" or "needle in the haystack" problem. Fraudulent transactions may be hard to prevent or detect without analytic algorithms assessing high volumes of data with targeted anomaly and risk detection.
- **Compliance monitoring analytics** provide real-time assessment and continuous data to inform views on compliance and organizational performance. Many CAEs noted that trend analysis and continuous auditing allows them to identify and address issues on a more real-time basis – while also enabling them to recognize emerging risks.

On the next page is a summary of additional responses from CAEs about the ways in which they used analytics (and the automation associated with it) to add value for their organizations.

## Types of Data Internal Audit Uses to Add Value

### Internal Controls Evaluations

- Full population testing for selection of high-risk samples.
- Exception reporting based on risk indicators.
- IT general controls (e.g., user access, segregation of duties, terminations, IT change reviews).
- Control specific (e.g., travel and entertainment, procurement card, MAR controls, financial controls, contract management).

### Fraud Detection

- Expenses (e.g., trends, A/P, credit card, checks).
- Employee fraud risk analytics (e.g., payroll, expenses, fuel card).
- Payment-related fraud analytics (e.g., duplicates, inappropriate payments).
- Vendor-related fraud analytics (e.g., overpayments, conflicts of interest, non-existent vendors, duplicate payments).
- Accounting transactions (e.g., general ledger trends or anomalies, transaction testing).

### Compliance Monitoring

- Anti-bribery (e.g., anti-money laundering, “Know Your Customer”).
- Monitoring of required training completion (e.g., ethics training, anti-bribery training).
- NIST IT compliance.
- Financial control (e.g., bank account balances and transaction monitoring for compliance with stated terms).
- Regulatory (e.g., consumer compliance regulation requirement transaction level testing, ISO, SWIFT).

### Sarbanes-Oxley Compliance

- SOX testing automation.
- Population testing.
- Sample selection.
- Testing efficiency and effectiveness.

### Data Visualization

- Board, audit committee, and management reporting.
- Finding and exception reporting dashboards.
- Risk specific (e.g., incident management, third-party analysis).

### Risk Assessment

- Monitoring audit areas and KRIs to identify potential risks.

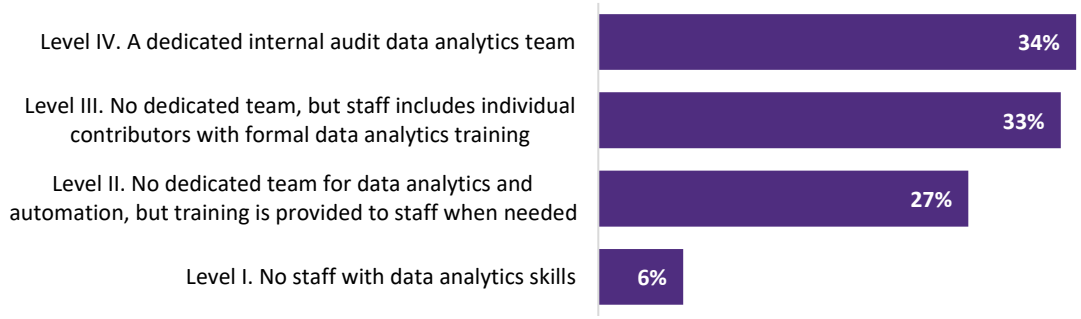
*Note:* Internal Audit Foundation and Grant Thornton 2022 Data Analytics Survey, Follow-up text responses to Q7: What are the top 3 areas where data analytics or automation have yielded the most value for your organization? (Choose up to 3.) CAES and directors. *n* = 82.

# **Technology Enablers** for Success

**Ninety-four percent of survey respondents** had dedicated staff with analytics skills, or they provided analytics training to staff when needed (Figure 5). This indicates a high level of commitment to achieve the high-value data analytics that was cited by CAEs.

Specifically, for 34% of survey respondents, there is a dedicated team for internal audit data analytics.* Another 33% of respondents have staff members with formal data analytics training, but no dedicated team. And 27% say they provide training in analytics to staff when needed. Only 6% say they completely lack staff with data analytics skills.

**Figure 5: Analytics Skills on Staff**



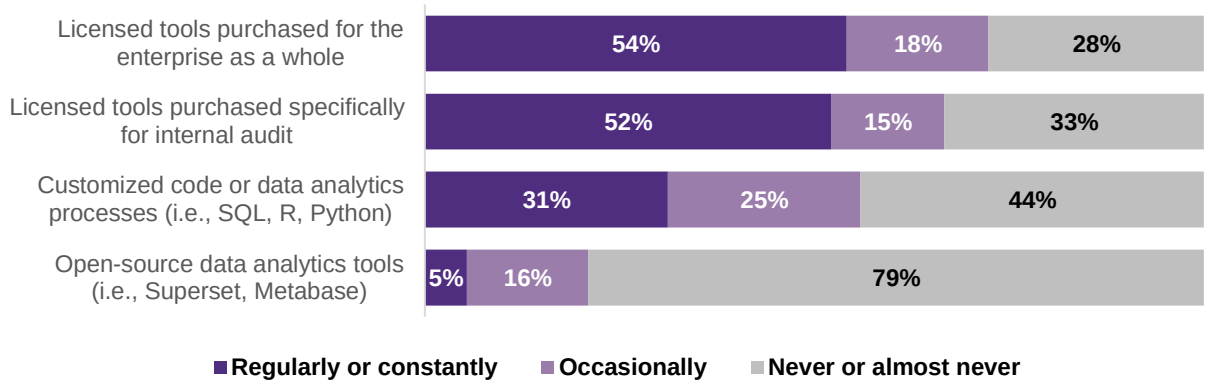

*Note:* Internal Audit Foundation and Grant Thornton 2022 Data Analytics Survey, Q10: Which option best describes your internal audit function's inhouse staff skills related to data analytics or automation? CAES and directors. *n* = 181.

With such an investment of time and resources, it is essential to think strategically about the technology that will be used to enable analytics and automation. Most internal audit teams leverage a combination of tools – both for the enterprise and tools procured specifically for internal audit (Figure 6). The most commonly used tools among survey respondents are listed in Figure 7.

However, there is an increasing need to align internal audit tools to IT's enterprise data strategy and data governance initiatives. The enhanced focus on an aligned data strategy commonly impacts or influences internal audit's analytics and automation approach and tools.

* Those with a dedicated team for internal audit analytics were generally from larger internal audit functions. Fifty-eight percent had 26 or more FTEs, 27% had 11 to 25 FTEs, and the remaining had 10 or fewer FTEs.

**Figure 6: Types of Tools Used**




*Note: Internal Audit Foundation and Grant Thornton 2022 Data Analytics Survey, Q14: How often do you use each of these broad types of data analytics tools? CAES and directors. n = 188.*

**Figure 7: Tools Most Commonly Used by Internal Audit for Data Analytics**

*Note:* The tools listed were used by at least 20% of respondents.

**Tools Used for General Internal Audit Analytics**

- Microsoft Excel.
- Microsoft, various applications (i.e., PowerBI, SQL Server, Power Automate, Power Apps).
- Tableau.
- Diligent (encompassing Galvanize, ACL, Caseware IDEA, and High Bond).
- Python.
- Alteryx.

**Tools Used for SOX-related Analytics**

- Microsoft Excel.
- AuditBoard (e.g., SOXHUB).
- BlackLine.
- Diligent (encompassing Galvanize, ACL, and High Bond).

*Note:* Internal Audit Foundation and Grant Thornton 2022 Data Analytics Survey. Q16: Which specific tools does your internal audit function use for general data analytics or automation? *n* = 186. Q15: Which specific tools does your internal audit function use for Sarbanes-Oxley data analytics or automation? *n* = 42.

## Most Valuable Technology Characteristics

With a vast array of tools and technologies to choose from, CAEs assess technology characteristics to select the right tool for their team. So, what are the most important characteristics when selecting a technology to support internal audit? The results are in, and CAEs cited the following as the most valuable technology characteristics:

- **Data access** – Ability to pull data directly from systems for analysis.
- **Ease of user experience** – Ease of use and ease of implementation for auditors (i.e., need for an intuitive and user-friendly tool).
- **Functionality** – In particular: 1) ability to process large data sets with minimal human intervention and 2) ability to normalize and combine data into usable formats.
- **Training** – Availability of on-demand trainings for team members to learn at their own pace.
- **Cost** – The cost of analytic software tools (plus, any incremental cost for skilled practitioners with experience with the selected tools and technology).

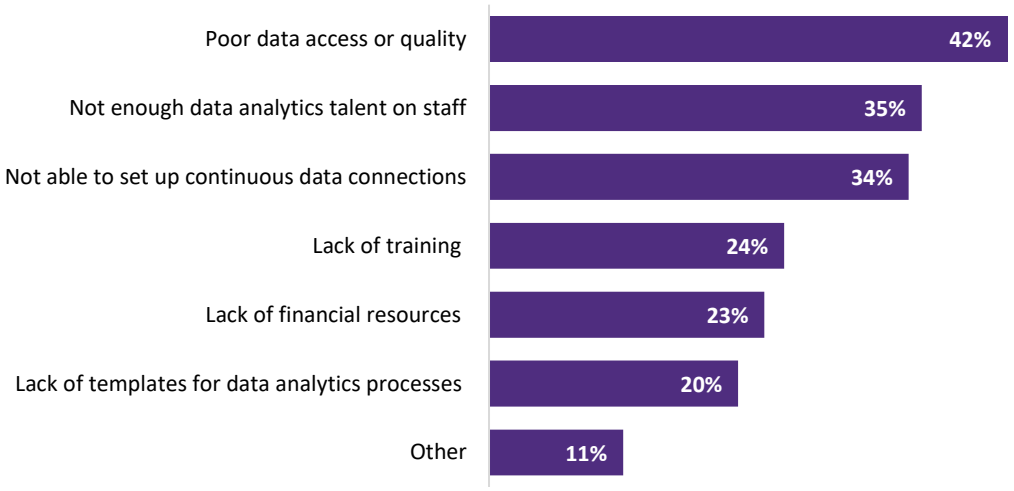
Notably though, not all technology characteristics are equally important. The ability to align the technology to data in systems is a critical priority. If not appropriately accounted for, lack of data access can be a limiting factor to success. Similarly, as packaged analytic tools (i.e., tools available to an organization by virtue of their cloud operations) have evolved, the cost of analytic software has been reduced; however, the cost associated with investment decisions may be impacted by the need for highly skilled practitioners to support these technologies.

# **Inhibitors** to Success

**Have data challenges** and the lack of analytic talent inhibited your progress with analytics and automation? You are not alone. When we asked CAEs about the biggest inhibitors to getting more value out of data analytics, the top 3 were:

- Poor data access or quality – 42%.
- Not enough data analytics knowledge within the internal audit staff – 35%.
- Not able to set up continuous data connections – 34% (Figure 8).

**Figure 8: Data Analytics Usage Inhibitors**



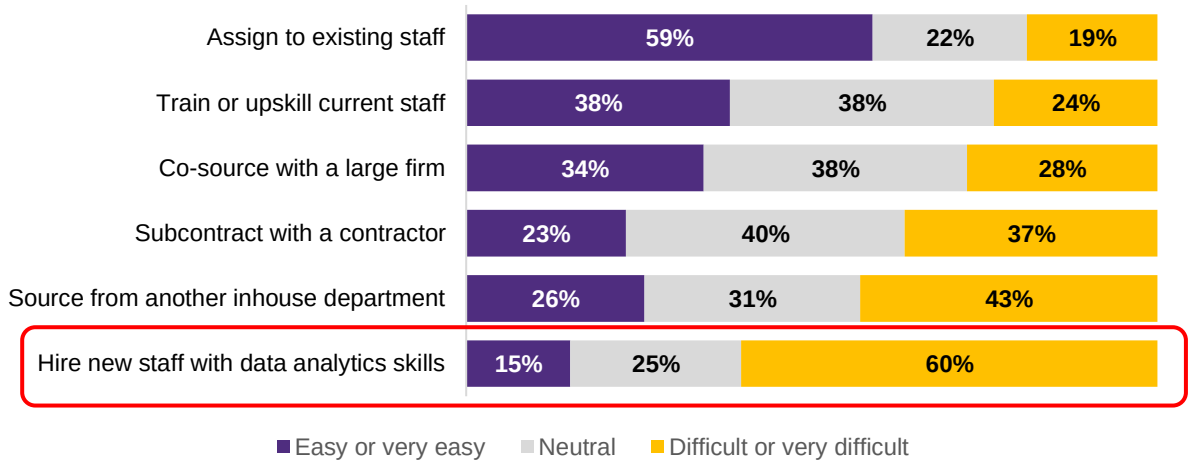

*Note:* Internal Audit Foundation and Grant Thornton 2022 Data Analytics Survey, Q19: What have been the biggest inhibitors for progress in using data analytics and automation for internal audit work? (Choose all that apply.) CAEs and directors. *n* = 186.

While the majority of CAEs have invested in training to enable analytic progress, the survey highlights shortcomings in both experience of their current internal audit teams and challenges hiring staff with data analytics skills. In fact, 60% of CAEs reported that they have found it difficult to hire staff who have data analytics skills (Figure 9).

If you are currently seeking data analytics resources, take note of the feedback from CAEs regarding their most effective factors for hiring and retaining data analytics talent. CAEs noted that success in the areas of hiring and retention were positively impacted by:

- Highlighting a differentiated culture and/or opportunity.
- Competitive compensation.
- Remote work options.

**Figure 9: Strategies for Obtaining Data Analytics Skills – Level of Ease/Difficulty**




*Note:* Internal Audit Foundation and Grant Thornton 2022 Data Analytics Survey, Q12: How easy or difficult is it for you to obtain data analytics or automation skills using the following methods? *n* = 186.

## Drivers for Success

Despite these challenges and limitations, CAEs reported three drivers of success. Figure 10 shows the activities that yielded the most success for survey respondents.

**Figure 10: Three Drivers of Success for Data Analytics**

| Success Drivers | Implementation Ideas to Consider |
|---|---|
| 1. Assign analytics to existing internal audit staff | • Identify internal audit team member(s) with a strong IT background and/or interest in analytics.<br>• Select audits that are good candidates for analytics.<br>• Ask them to build at least three tests (i.e., scenarios, queries) to identify high-risk characteristics or high-risk samples across the full population of data that are aligned to audit objectives.<br>• Have them report their process, assumptions, and findings. |
| 2. Train or upskill current internal audit staff | • Leverage free training available from IT (internally) or technology partners (externally).<br>• Invest in on-demand training options, which can enhance data acumen and allow for practical application of tools in a training environment. |
| 3. Partner with resources (internally or externally) | • Collaborate with IT and/or data analytics teams internally.<br>• Leverage external partners to augment your team. |

# **Increasing** Your Analytics ROI

**In a world driven** by return on investment (ROI), organizations must focus on where internal audit can provide assurance, reduce risk, and create value. With increasing access to data, there are huge opportunities to use that data to identify and monitor risk, increase assurance, mitigate regulatory compliance violations, and recover costs for the organization.

Five opportunities to drive analytic progress and increase your ROI are:

### 1. Use key risk indicators (KRIs) and continuous auditing to monitor risks and exceptions.

Internal audit teams often yield the greatest benefits when focused on transaction-centric use cases (e.g., travel and entertainment, accounts payable, payroll, claims). These use cases often have good quality data and are also commonly of interest to business partners in the first line (i.e., management) and second line (i.e., compliance). Because this data tends to be systematic, analytics can be built and continuously monitored so that exceptions and outliers (e.g., KRIs, fraud indicators) can be identified and actioned quickly. Additionally, transactional use cases may create the opportunity for cost recovery when internal audit identifies potential fraud, potential policy non-compliance (e.g., Foreign Corrupt Practices Act), and/or duplicate transactions.

### 2. Enable risk sensing beyond internal audit.

While data-driven activities within internal audit are often closely aligned to the audit plan, best-in-class teams collaborate across the three lines to enhance value and outcomes.

Given the data amassed by companies today, there are significant opportunities to evolve the way teams collectively identify and monitor risk. Those who have been successful with a holistic risk approach have been intentional and proactive about collaboration – with focus on the high risks (e.g., financial, operational, reputational), available data (e.g., required data, accessible data), and desired outcomes (e.g., actionable monitoring, transparency).

When executed effectively, integrated monitoring and reporting can surface emerging risks, provide context into root causes, and enrich board and management reporting.

### 3. Shift to data-driven management and board reporting.

Survey respondents were asked to describe the requests they receive from management, the board, or other stakeholders for enhanced reporting using data analytics. More than 60% of respondents to the question cited an increasing expectation from the board for more data-driven reporting.

In particular, CAEs highlighted requests for:

- Shorter, more insightful reporting.
- Visuals supported by data (i.e., trends, key metrics).
- Enhanced reporting on performance and risks (i.e., repeat findings, risk indicators, key drivers for issues).

The desire for more data-driven reporting aligns nicely with enhancement opportunities in the areas of KRIs and risk sensing. As such, be mindful of the common requests for reporting that may arise. Management and boards will likely ask where else they can be applying such data-driven reporting and approaches.

**Figure 11: Data Analytics Requested by Management/Board**

- **Key performance indicators (KPIs) for internal audit** – Risk monitoring, key open audit findings/exceptions with aging details, report on audit coverage mapped to top risks, risk and control related performance.
- **Data-driven risk sensing** – Fraud investigations; repeat findings; key drivers for issues; accounts receivable analysis for deterioration, aging of inventory, capacity analysis, contract types and trends, employee compensation and bonuses, vendors' billing accuracy scorecard, inventory adjustment monitoring, cycle counts program.
- **Audit-driven reporting** – Cybersecurity KPIs; risk profiling of dealers/distributors; expense reporting, travel & expense and corporate credit card compliance, accounts payable disbursement evaluation; fraud analytics for process governance; use analytics to cover smaller remote locations that are not subject to traditional operational audits.

*Note:* Internal Audit Foundation and Grant Thornton 2022 Data Analytics Survey. Q9: What requests are you receiving from management, the board, or other stakeholders for enhanced reporting and/or new uses of data analytics or automation? Describe briefly. CAEs and directors. *n* = 111.

## 4. Mitigate the impact of IT vulnerabilities.

In order for internal audit to use data analytics, internal audit must be able to depend on the resources and data that are managed by the IT functions of their organizations as a whole. These dependencies come with vulnerabilities. For example, survey respondents indicated that poor data access or quality and the inability to establish continuous data connections were inhibitors for their use of data analytics.

**Figure 12: Common IT Vulnerabilities**

- **Information technology resources** – The capacity or bandwidth of IT team members.
- **Data architecture and access** – Reliance on IT to access and analyze data.
- **Data management** – Variability of data sources and formats, which can impact data quality.

It is important to acknowledge that the combination of good analytic talent *and* good data can be hard to come by. This resource and IT reality makes the prioritization of analytic activities even more important. Without a clear picture of your talent or IT constraints, your analytic plan may be unrealistic or unachievable.

### 5. Validate and prioritize before starting a data analytics project.

To validate priorities and assist with resource planning, you can assess projects using the VORSA framework:

- **V**alue
- **O**perational **R**eadiness
- **S**trategic **A**lignment

This approach can be applied to any aspect of data analytics.

### 6. Apply an ROI calculation to every data analytics initiative.

Consider a proactive measurement of your return on investment for every analytic or automation activity. Measures of ROI may include:

- **Value** – for example, enhanced assurance.
- **Efficiencies** – for example, time savings.
- **Scalability** – for example, use inside and outside the audit team.

Too often companies spend significant time on data integration efforts before validating the data's value and importance. Once you have your analytics and automation priorities, we recommend developing a prototype based on any available data extracts. A timely prototype will provide both a quick win and validation of the value of the analytic or automation. If the value is confirmed, data integration efforts can then be better prioritized and executed.

# **Key** Takeaways

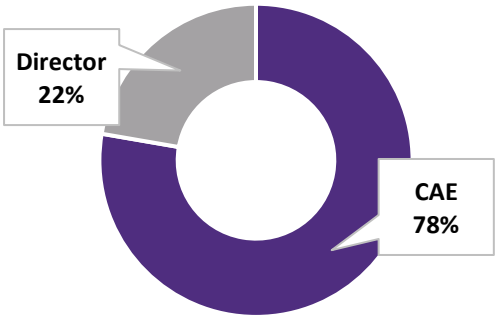
### How to Increase Your Analytics ROI

1. **Add value beyond just assurance** – Use KRIs and continuous auditing to monitor risks and exceptions.
2. **Enable broader risk-sensing** – Shift from siloed analytics to a holistic view of risk and root causes.
3. **Shift toward data-driven reporting** – Enable data-driven management by providing data analytics to management, boards, and stakeholders.
4. **Mitigate the impact of IT vulnerabilities** – Make realistic plans based on organizational resources.
5. **Validate and prioritize** – Achieve quick wins by focusing on high-value use cases and prototypes.
6. **Track ROI** – Show the value, progress, and results of your data analytics activities and investments.

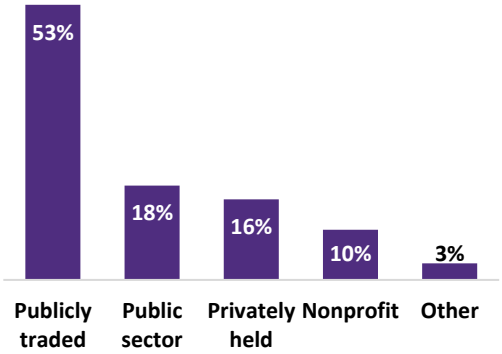
# Appendix A

This survey was conducted as a joint project with the Internal Audit Foundation and Grant Thornton from August 9 to August 31, 2022. Email invitations were sent to CAEs and directors in North America in The IIA contact list. The link was also distributed by Grant Thornton through their contact channels. The survey was completed by 186 respondents from a variety of industries and organization sizes.

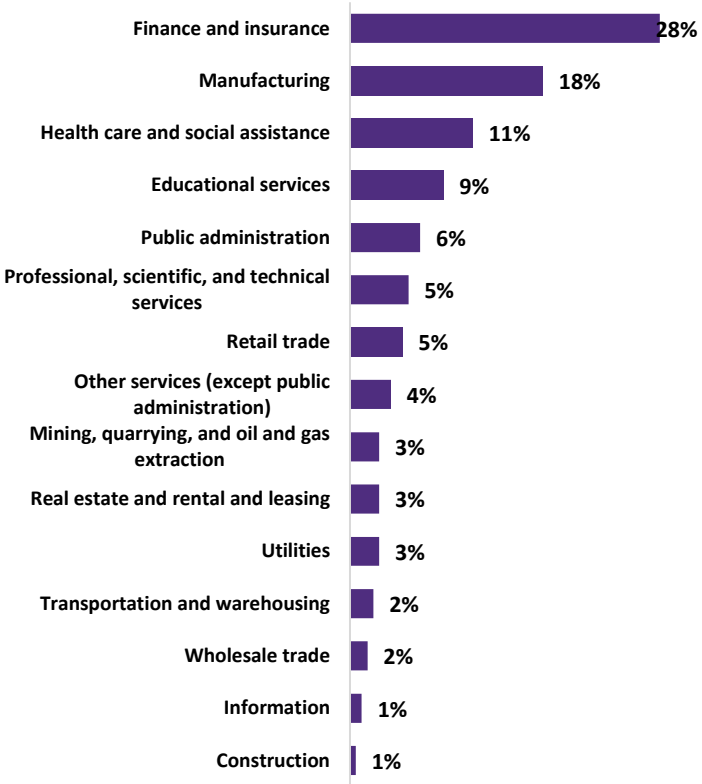
**Internal Audit Position**



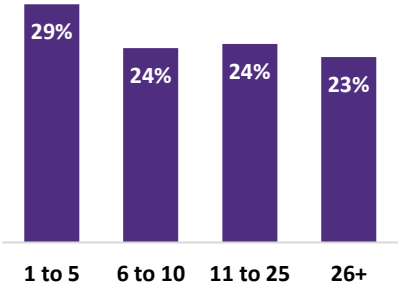

**Organization Type**




**Industry**




**Internal Audit Function Size**



# Acknowledgments

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## About the Internal Audit Foundation

The Internal Audit Foundation strives to be an essential global resource for advancing the internal audit profession. The Foundation's research and educational products provide insight on emerging topics to internal audit practitioners and their stakeholders, promoting and advancing the value of the internal audit profession globally. Through the Academic Fund, the Foundation supports the future of the profession by providing grants to support internal audit education at institutions of higher education. For more information, visit theiia.org/Foundation.

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## Report Development

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