

Data analytics

A Guide to Advanced Data Analytics in Internal Audit

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The Institute of
Internal Auditors



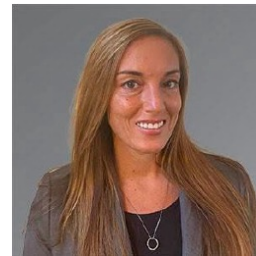
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Your Guide Forward

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Learning Objectives

- ▶ Provide a data analytics overview
- ▶ Identify key benefits of using data analytics in internal audit testing
- ▶ Discuss specific ways to utilize AI for data analytics within internal audit
- ▶ Identify key challenges of using data analytics in internal audit testing
- ▶ Discuss important considerations for successfully implementing data analytics into your internal audit department





Data Analytics Overview



What is Data Analytics?

- ▶ Data analytics is the process of sorting through and examining all the pieces of data or information provided to find patterns, trends or important details, to help us understand the bigger picture.
- ▶ Data analytics is about turning raw numbers and information into something useful and understandable to help us make better decisions.



Data Analytics Ecosystem

- ▶ A data analytics ecosystem is a network of interconnected components, including data sources, tools, and people, that work together to collect, process, analyze, and share data for informed decision-making.
- ▶ In order for Internal Audit to be able to successfully leverage data analytics within their department, the organization must **view Internal Audit as another customer of the data**, and ensure they are provided the access needed to the various data sets.



Discussion Question

Can you easily obtain integrated organizational data to support your IA data analytics?



Key Benefits of Utilizing Data Analytics Within Internal Audit Testing (BP & ITGC)



Enhanced Risk Assessment

- Data analytics allows internal auditors to analyze vast amounts of data quickly and accurately, leading to more effective risk assessments.



Improved Efficiency and Productivity



- ▶ The use of data analytics streamlines the internal audit process, reducing the time and resources required for manual data analysis.

Predictive Analysis

- ▶ Predictive analytics can forecast future trends and identify potential issues before they become problematic.



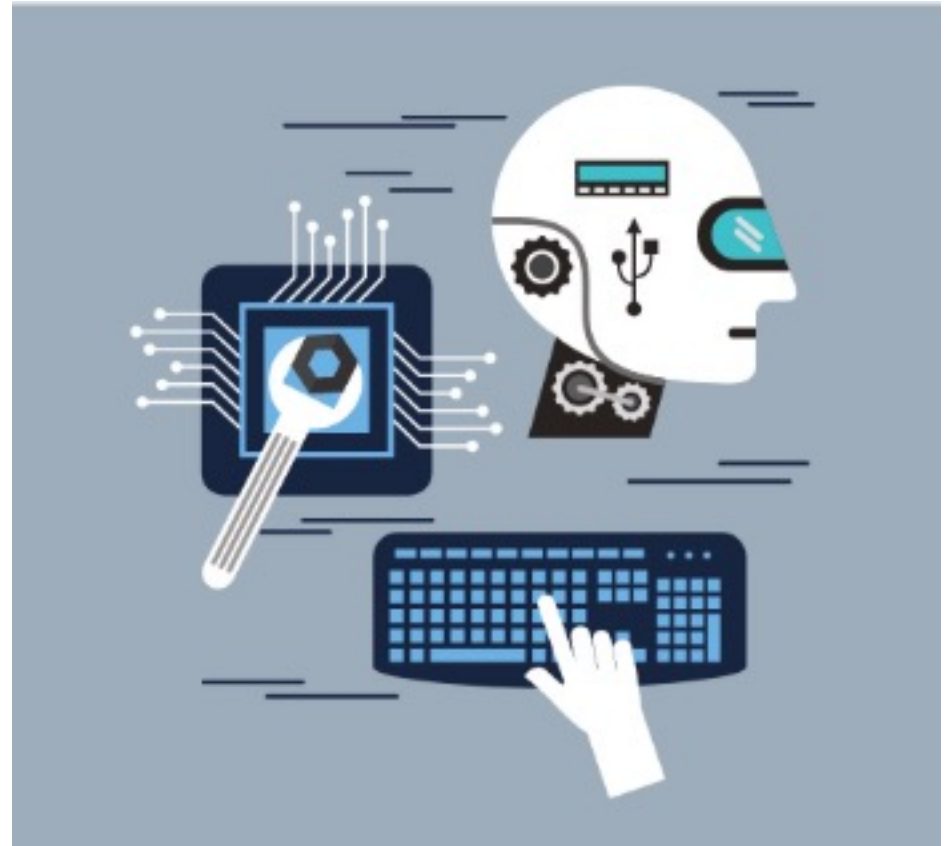
Enhanced Security Measures



- ▶ Data analytics helps in monitoring and analyzing IT systems for unusual activities and potential security breaches.

Automated Control Testing

- ▶ Internal auditors can leverage data analytics to automate control testing processes, ensuring that controls are functioning as intended.



Improved IT Governance



- Data analytics provides comprehensive insights into operations, helping companies to improve governance and oversight.

Key Benefits in Practice: Some Specific Examples of Utilizing Data Analytics Within Internal Audit Testing

Continuous Monitoring
of Transactions

Risk Assessment and
Prioritization

Data-Driven Sampling
for Audits

Fraud Detection and
Prevention

Inventory Management
Audits

Expense and Spend
Analysis



Discussion Question

Of the six examples provided, how many of you currently utilizing within your internal audit department?



Ways to Utilize AI for Data Analytics Within Internal Audit



Utilizing AI for Data Analytics

- ▶ The convergence of AI and data analytics is transforming how we derive insights, make predictions, and drive strategic decisions, fundamentally altering the business landscape.



Utilizing Data Analytics

Example #1: Data Ingestion and Cleansing

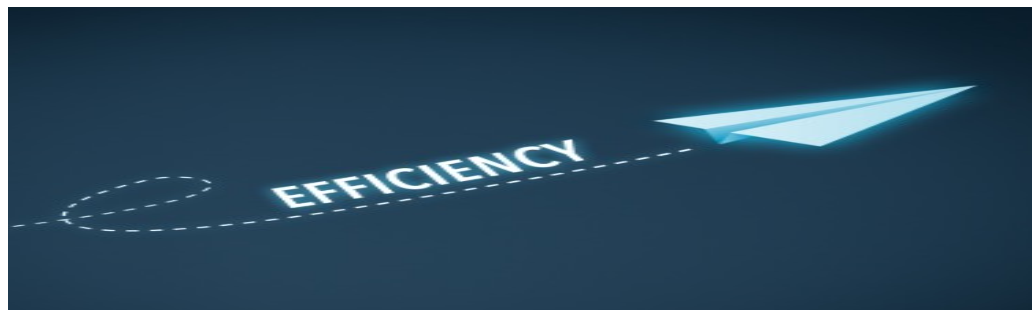


- ▶ AI-powered tools can automate data extraction, transformation, and loading processes, identify anomalies, correct errors, and harmonize data formats.

Utilizing Data Analytics

Example #2: Efficiency in Audit Sampling and Testing

- ▶ AI can generate intelligent samples by identifying clusters, correlations, and anomalies within massive datasets.
- ▶ Audit tests can be automated, with AI systems performing repetitive procedures at scale and reporting exceptions for human review.



Utilizing Data Analytics

Example #3: Process Documentation



- ▶ AI-powered natural language generation can convert raw process data, flowcharts, and interview transcripts into coherent, well-structured narratives.
- ▶ AI-powered natural language system example: Microsoft Copilot

Key Challenges of Using Data Analytics in Internal Audit Testing



Key Challenges of Using Data Analytics in Internal Audit Testing



- ▶ Skill Gaps
- ▶ Change Resistance
- ▶ Overreliance on Technology

Technology should enhance, not replace, the auditor's critical thinking.

Discussion Question

Have you run into any of these challenges while trying to utilize data analytics within your organization?

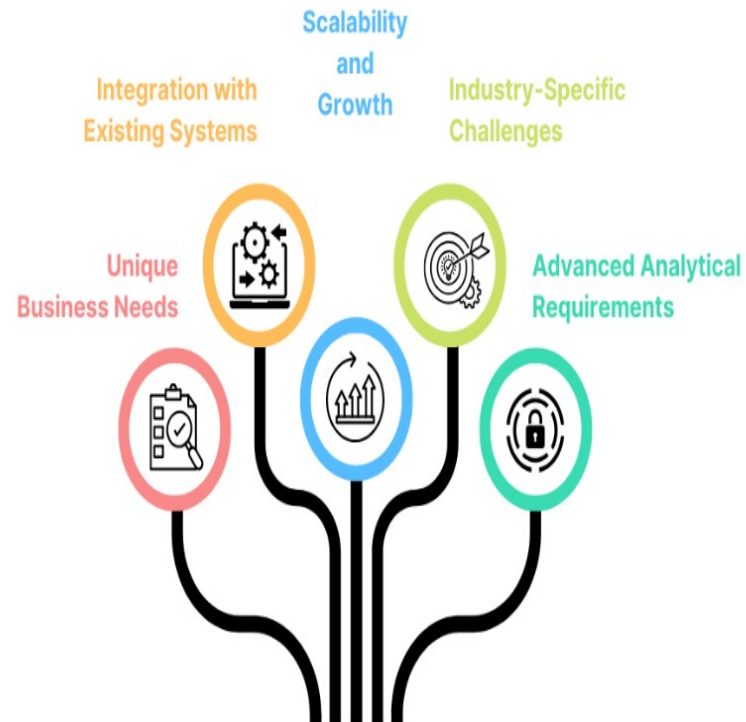


Important Considerations for Successfully Implementing Data Analytics Into Your Internal Audit Department



Customized Data Analytics Solutions

- ▶ It's important to consider tailoring solutions to meet the unique needs of your organization
- ▶ Aim to have a well-defined strategy.
- ▶ Take your time to select the right tool before spending any money.



Training and Support



- It's critical to provide comprehensive training and ongoing support to ensure that employees can effectively utilize data analytics tools.

Integration With Existing Systems

- ▶ Be sure to work with your IT and Change Management teams during the implementation to ensure seamless integration with other systems, applications and infrastructure components.





Questions?

