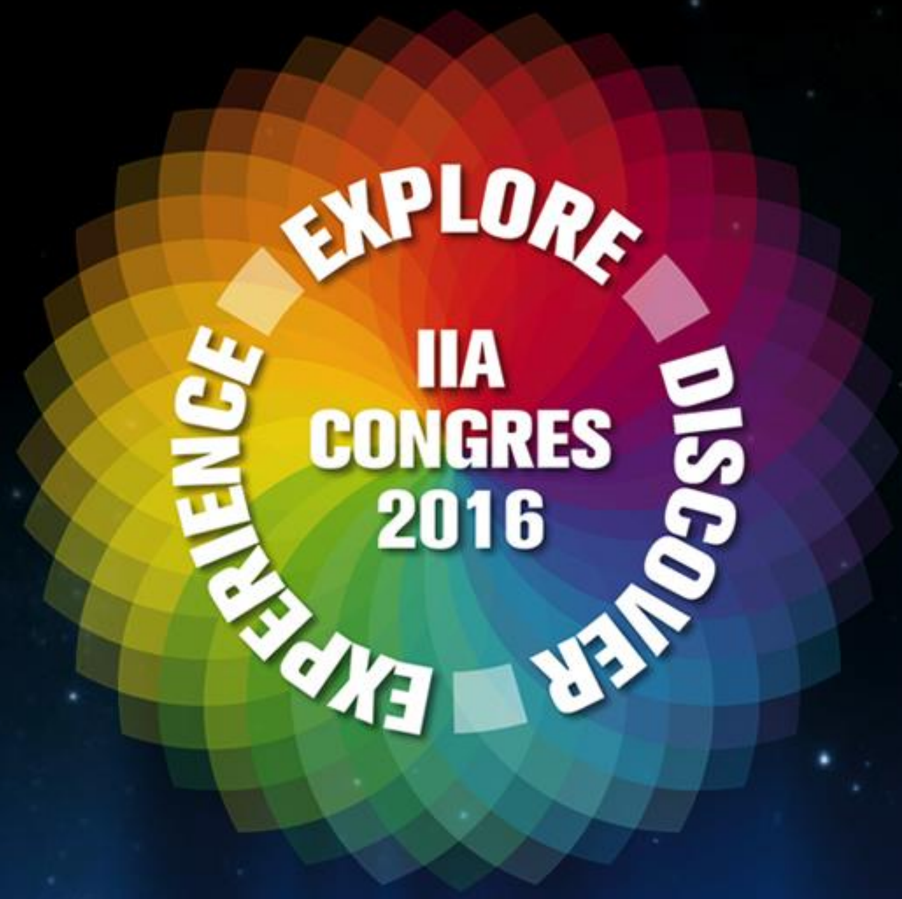
Data Analytics: Adding value to internal audit



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Agenda

- Introduction: What and Why?
- Enhancing Internal Audit Value
  - Data volumes
  - Risk assurance
  - Reporting
- Steps to Applying Data Analytics
- What to look for in Data Analytic software

Introduction: What and Why?

What is Data Analytics?

Simply: process of gathering and analysing data so as to **USE** those results to make better decisions.

Introduction: What and Why?

IIA Standards

- Attribute Standard 1220.A2 - In exercising due professional care internal auditors must consider the use of technology-based audit and other data analysis techniques.
- Various other standards exist that imply the need to use data analysis
  - As access to technology increases, the expectation to use it follows

More with less

- 100% of the population

Test what would otherwise not be possible or practical

- Comparing/contrasting lists and tables

Four types of Data Analytics

Descriptive

- analysis of a/p shows all disbursements on Saturdays over $1,000

Diagnostic

- analysis of a/p identifies that it is Bill Smith from London who processed each Saturday disbursement over $1,000

Predictive

- analysis of a/p in multiple cities identifies all Saturday disbursements over $1,000 and assigns common attributes to each occurrence to aid in prediction

Prescriptive

- analysis that builds and tests scenarios around different policies to determine what course of action would reduce the number of Saturday disbursements over $1,000

From the new IIA book, “Data Analytics: Elevating Internal Audit’s Value”

What people are saying

- EY – Global IA Survey 2013
  - "The number one response of the most important skills lacking is data analytics."

- PWC – State of the IA Profession 2015
  - "Three years ago, the bank's internal audit function committed to investing in the use of data analytics. Today, as its use of data analytics expands, it is finding itself an **agent of change** that is continuously solicited by other functions for guidance.... Internal audit now partners with the business, routinely brings its **analytics-based insights** to the business, and foresees greater collaboration in the future. The relationship between internal audit and the business has been forever changed"

Why is data analytics not used more widely?

- Internal Audit departments aren’t equipped
  - Don’t have any dedicated DA software
  - Don’t have the right DA software
  - Don’t have the skills to use the software
- Software too complex
  - This is a myth…
  - With the right software and the right training, Data Analytics is straightforward!

Enhancing Internal Audit Value:

Three concerns and how data analytics addresses them

Enhancing Internal Audit Value: Data Volume

Concern: Ever-increasing volumes of data

- More data being created than ever before
- New systems coming online generating new data sources
- Pressure to increase scope of reviews
- Sampling not effective
  - Time consuming
  - Very low coverage
- Traditional audit methods no longer appropriate in a computerized world

Enhancing Internal Audit Value: Data Volume

Data Volume: How data analytics helps

- Audit huge transaction volumes as quickly as testing a single transaction
- Reduce time consuming tasks and free up resources
  - Manual testing
  - Sample checking
  - Document hunting
  - Ticking & Bashing
- New testing capabilities
- Facilitates continuous auditing/monitoring

Enhancing Internal Audit Value: Risk Assurance

Concern: Expectations around risk assurance

- Expectations from Management and Audit Committee around risk assurance ever increasing
- Audit Risk = Inherent risk x Control risk x **Detection Risk**
- Auditors have no influence of inherent risk
- Auditors can identify control weaknesses and recommend changes, but it is up to management to implement them
- Detection risk is the only area that Auditors have direct control

Enhancing Internal Audit Value: Risk Assurance

Risk Assurance: How data analytics helps

- 100% coverage in controls effectiveness tests
- Identify every anomaly, error and omission
- Eliminate sampling and sampling risk
- Where necessary use robust statistical samples
- No more manual Excel errors
- Increase effectiveness of audits, with greater coverage and comfort

Enhancing Internal Audit Value: Reporting

Concern: Reporting

- Difficult to quantify the value added by IA
- Test results cannot put a monetary value on a recommendation
- Estimates/extrapolations used are not hard figures
- Difficult to provide financial impetus to make changes
- Improvements cannot be traced to the bottom line
- Difficult to present information in an easy to digest manner
- Time taken to produce reports

Enhancing Internal Audit Value: Reporting

Reporting: How data analytics helps

- Present every anomaly, error and omission
- Summarize information into tables and charts
- Back findings up with hard numbers
- New tools facilitate new capabilities
- Improvements can be measured and tracked
- Enable cash recovery
- Demonstrate tangible value and encourage investment

"We tested **30** samples and found **1** duplicate payment of **€826**. Extrapolated over the population, we estimate the actual duplicate payments to be **significant**"

or

"We tested all **850,000** transactions and found that the control failed to operate on **1,426** occasions resulting in duplicated payments **to the value of €1,506,882**. A **full list** of these is attached."

Step’s to Applying Data Analytics

1) Define your Objective

2) Understanding your Data Source

3) Data Preparation

4) Analysing Data

5) Reporting Results

Step's to Applying Data Analytics: Step 1

Define your Objective

- Ask the following questions:
  - ✓ What are you trying to achieve?
  - ✓ What could the result look like?
- The ACFE and The IIA both offer courses on data analytics theory that provide examples on the types of analytics and when to use each one.

Step’s to Applying Data Analytics: Step 2

Understanding your Data Source

- Ask the following questions:
  - ✓ What information do I need?
  - ✓ Can I get the data myself, or do I need to ask an IT resource?
- Depending on the data sources, you may need to combine information from multiple sources.

Step’s to Applying Data Analytics: Step 3

Data Preparation

- Ask the following questions:
  - ✓ Does the data need to be cleaned?
  - ✓ Does the data need to be normalized?
- Cleaning data addresses the quality of the information, while normalization eliminates redundancies (e.g. O’Brien, O_Brien, OBrien).

Step’s to Applying Data Analytics: Step 4

Analysing Data

- Ask the following questions:
  - ✓ What tests can I run on the data?
  - ✓ Is help available to understand results?
- Your data analytics tools will help you summarize the information, but you will probably need to work with the business to understand the results.

Step’s to Applying Data Analytics: Step 5

Reporting Results

- Ask the following questions:
  - ✓ Will management understand the results?
  - ✓ Can you represent the results in a visual?
- Avoid presenting management with tables full of numbers. We need to effectively communicate results without lengthy explanations. Use charts and graphs with simple notes.

Let’s take a closer look

Here is a quick visual on a tool example: TeamMate Analytics

- We have chosen an Excel-based overlay:
- Get the most auditors using it as possible
- Don’t have to learn a new “language” or scripting
- Quick to adopt and experiment with

If you have any questions, I’m happy to help:

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