WORLD CONTINUOUS AUDITING & REPORTING SYMPOSIUM

Update on the Rutgers AICPA Data Analytics Research Initiative

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Audit Data Analytics:

“...the science and art of discovering and analyzing patterns, identifying anomalies, and extracting other useful information in data underlying or related to the subject matter of an audit through analysis, modeling, and visualization for the purpose of planning or performing the audit.”

- AICPA Guide to Audit Data Analytics, December 2017
TYPICAL GLOBAL FIRM STRATEGY

- Supportable Methodology
- Enabling Technology
- Modern Learning
- Change Management
RUTGERS PARTNERSHIP REALIZED
INNOVATING THE AUDIT EXPERIENCE

DATA ACQUISITION

DATA STANDARDIZATION

PREDICTABLE ROUTINES

BENCHMARKING & SERVICE PENETRATION
...the auditor may decide to use groupings and filtering when a large number of notable items is identified.

...The auditor refines and reperforms the grouping and filtering process until the auditor decides that the ADA needs no further improvements to achieve the objectives of the procedure or that a different procedure is needed to achieve those objectives.

- AICPA Guide to Audit Data Analytics, para 2.16
MADS Model Build Process

Whole Transaction Data (Entire Population)

Step 1: Filters for Significant Potential Risk Factors

Step 1 Outputs (Notable Items)

Step 2: Data Analytic Techniques

Apply a set of filters to examine significant risks (i.e., What Could Go Wrong) (e.g., duplicate payment)

- Additional Filters
- Visualization Techniques (e.g., scatter plots)
- Professional Judgement (e.g., knowledge and experiences)
- Outlier Detection Techniques (e.g., classification & clustering).
Use professional judgement based on the importance of each step 1 filter and step 2 filter.

Use the step 1 and/or step 2 results.

Use a reasonable factor (e.g., dollar amount).

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- Use the step 1 and/or step 2 results.
- Use a reasonable factor (e.g., dollar amount).
TRADITIONAL SAMPLING VS. MADS

**Traditional Sampling**

- Whole Transaction Data (Entire Population)
- Statistical or Non-statistical Sampling Method
  - Tolerable Misstatement
  - Expected Misstatement
  - Sampling Risk (Risk of Incorrect Acceptance)
  - Ratio of Expected to Tolerable Misstatement
  - Tolerable Misstatement / Population
  - Sampling Size and Interval
- Traditional Sample

**MADS**

- Whole Transaction Data (Entire Population)
- Step 1: Filters for Significant Potential Risk Factors
- Step 1 Outputs (Notable Items)
- Step 2: Data Analytic Techniques
- Step 2 Outputs (Exceptional Items)
- Step 3: Prioritization
- Prioritized Exceptional Items

**Traditional Sampling Approach**

- Perform Substantive Testing
  - • Inspection
  - • Confirmation
  - • Physical Examination
  - • Inquiries
  - ... ...

**MADS Approach**

- Perform Substantive Testing
  - • Inspection
  - • Confirmation
  - • Physical Examination
  - • Inquiries
  - Test for Significant Risks

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**Notes:**

- Traditional Sampling vs. MADS
- Sampling Methods and Techniques
- Risk Factors and Prioritization
- Substantive Testing Methods
...As part of the auditor’s risk assessment procedures, the auditor used a process-mining ADA to help obtain an understanding of the entity’s internal control. This ADA involved the use of data in the entity’s transaction log...

- AICPA Guide to Audit Data Analytics, Example 2-5
EXPECTED.... AND ACTUAL PROCESS FLOW
AUDIT APPLICATION

• Thicker movements represent common transaction flow, & common transaction flow speed...
• Thinner movements represent process deviations... not necessarily adverse
• What does this tell us about internal control effectiveness?
• Is the process effective because of internal control....
  ...or in spite of it?
• Does it matter?
RADAR IS MADE POSSIBLE BY....

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Senior Manager - AICPA

Dr. Miklos A. Vasarhelyi  
(titles, titles, titles....)  
Symposium Co-Chair, Director - Rutgers Accounting Research Center (RARC) & Continuous Auditing & Reporting Lab(CAR Lab), KPMG Distinguished Professor of Accounting Information Systems

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