

# **Data Analytics Overview**

## **Audit Committee – Open Agenda Item 6**

### **March 1, 2017**

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# Data Analysis Defined

- Breaking relevant problems and questions down into manageable sizes
- Using factual evidence to solve problems and deduce answers to questions



# Audit Analytics

- Data analysis is used to create routines and provide visualization of the data
  - enabling internal auditors to gather and analyze raw digital evidence from the organization's information systems.
- Data analysis is used to conduct more comprehensive, objective, repeatable and efficient assessments of risks and controls.

Digital Evidence



Algorithms



Technology

# Why Data Analytics?

- Full population testing rather than sampling
- Efficiency in continuous auditing
- Better fraud indicators (“red flags”)
- Better understanding of underlying data

# Institute of Internal Auditors' (IIA) Definition

***Continuous Auditing*** — the combination of technology enabled ongoing risk and control assessments. Continuous auditing is designed to enable the internal auditor to report on subject matter within a much shorter timeframe than under the traditional retrospective approach.

# Institute of Internal Auditors' (IIA) Definition

***Continuous Monitoring*** — a management process that monitors on an ongoing basis whether internal controls are operating effectively.

# Use of Audit Analytics and Continuous Auditing

- Ongoing Risk Assessment
  - Trends, comparisons, outliers
  - Compare current to past performance
  - Compare entity to others in the company
- Ongoing Control Assessment
  - Evaluate against baseline condition
  - Early warning of control deficiencies
  - IAD performs initial testing
    - Eventually transitioning ongoing monitoring to management

# Continuous Auditing/Monitoring

- Automated or partially automated scripts in analytics tools to analyze large datasets
- Exceptions are delivered and reported to management
- Improves coverage of areas not already well monitored by management
- Goal is to build out processes and hand-off to management to maintain (“Continuous Monitoring”)



# IIA Continuous Assurance Roles

## Internal Audit

- Plan continuous auditing jointly with first and second lines of defense.
- Perform continuous auditing:
  - Relate analytics to assertions and business objectives.
  - Align risk factors and control activities.
  - Add value as a trusted adviser by assessing emerging enterprise risks.
- Perform audit testing of continuous monitoring.
- Provide continuous assurance in connection with audit objectives such as completeness, accuracy, and security.
- Maintain effective data security arrangements.

## Management

- Design and perform continuous monitoring to assess the adequacy and effectiveness of risk management and control.
- Draw on process expertise and act on risk. Develop and implement management resolutions that address root causes.
- Shorten the time to management action.

# Full Population Sampling

- Leading industry practice
- Full population vs. small sample
- Provides more accurate assurance
- Eliminates skepticism related to sampling



# Fraud Red Flags

- Irregularities are more apparent
- Problems found more quickly
- Collaboration and partnership with SIU on tools and training
  - Internal vs. External fraud



# Understanding the Data

- IAD may provide comprehensive risk analysis if we fully understand the data
- Data can be complex and interrelated
- Internal Audit Department has dedicated staff learning and focused on understanding how to analyze it
- Staff is developing relationships with IT Data Management team to:
  - access data and help develop routine for transition to business unit.