Session Objectives

- Reviewing the “what and why” of Data Analysis and Continuous Auditing (CA)
- Define a common vocabulary for CA / CM
- IIA Guidance (Global Technology Audit Guides #3, #13, #16)
- Visual Risk IQ’s QuickStart™ Methodology – ways to get started
- Exercise: P-Card Audit Planning
- Internal Audit Utopia – what might it look like? How far away is it? Why?
- Maturity Model approach. People, Process, Governance, and Technology
- Q&A
- Additional DA and CA Resources
If DA / CA is easy, why aren’t we doing it...

- Ownership
- Confusion between IT and Fin / Ops Audit
- Concerns about ROI
- Balancing Performance and Compliance
- Variety and Diversity of Needed Skills

But things are tipping – significant uptick
- Fraud risks increase faster than Audit budget
- Audit’s response to doing more with less

Headlines / Fraud in the News

Condé Nast got hooked by $8 million spear-phishing scam

By Kim Zetter, wired.com

How a quiet bank executive built a lavish life on stolen money

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Review of IIA Guidance

- Continuous Auditing
  - Method used to perform audit-related activities on a continuous basis. Includes control and risk assessment
  - Activities performed by the Internal Audit function

- Continuous Monitoring
  - Process to ensure policies/processes are operating effectively and to assess adequacy of controls
  - Performed by Operational/Financial Management; audit independently evaluates the monitoring activity

- Continuous Assurance
  - Combination of Continuous Auditing and Audit Oversight of Continuous Monitoring Activities

- CAATs (Computer Assisted Audit Techniques)
  - Using data analysis in executing audit programs

Relationship between Continuous Auditing and Continuous Monitoring

- Role of continuous auditing is dependent on Management’s role in continuous monitoring
  - Inverse relationship between management and audit activities

- True continuous assurance
  - Depends on effective monitoring of internal controls by management
  - And on Audit’s independent assessment of that function

- Where is your management team?

- How is Internal Audit helping?
Evolution from CAATs to CA to CM

CAATs

Continuous Auditing

Continuous Monitoring

Internal Audit

Business

- Greater coverage than sampling
- Deep coverage from automated testing
- Core competency of internal audit
- Created on demand, reuse is considered

- Repetitive/on-going; frequent intervals
- Not based on audit project timeline
- More in-depth automated testing
- Centralized process requires cross-audit-program focus

- Monitoring controls, responsibility of business process owners
- Periodically reviewed by IA
- Includes both transaction and controls monitoring

IIA GTAG #13 - Fraud Prevention and Detection in an Automated World

- Reiterates guidance
  - 2120.A2 – The internal audit activity must evaluate the potential for the occurrence of fraud and the manner in which the organization manages fraud risk
  - The internal auditors must consider the probability of significant errors, fraud, non-compliance, and other exposures when developing the engagement objectives.

- Advocates use of technology to prevent and detect fraud
  - Provides examples of fraud schemes and data analysis tests that are designed to identify each scheme
  - Examples are vendor-neutral, meaning no specific tools are required. MS-Office can be used, or more auditor-specific tools like ACL or IDEA.
  - Introduces additional technologies that can aid in investigation, including e-discovery tools for analyzing email and other unstructured data repositories.
IIA GTAG #16
Data Analysis Technologies

- Emphasizes importance of data analysis
  - Professional standards
  - Provide more efficient assurance
  - Use for audit planning and risk and control assessment

- Provides some guidance on how to implement
  - Challenges and ways to overcome them
  - Introduces Maturity Model(s)
  - Discusses statistical analysis (e.g. sampling, ratios, aggregate data) and also exception analysis (e.g. IDEA, ACL, SAS)
  - Methodology is Plan, Prepare, Test, Review

“Internal auditors who don't use data mining and analytics should get on their horse & buggy and go home” @IIACEO

Recommended Data Analysis can take different forms
- Analytical procedures (ratio analysis, KPI's)
- Mean, variance, and outliers
- Patterns such as digital analysis / Benford’s Law
- Exception analysis like duplicates or transactions entered or approved by terminated employees

Progressing from Ad Hoc to Repetitive to Continuous

Distinction between queries performed by Audit vs. Management

Limited guidance on IA’s review of Management’s queries

Considers people, process, methodology, and technology implications

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IIA GTAG #16
Data Analysis Technologies

- Barriers
  - Poorly defined scope
  - Data location and access
  - Data understanding
  - Data preparation
  - Manually maintained data

- Introduces simple Maturity Model(s)
  - Two different models
  - Both are quite simple and can be expanded upon

Maturity measures are more analog than digital. A multi-dimensional maturity model probably makes more sense.

Continuous Auditing has been a hot topic for 5++ years. But what is continuous, really?

Continuous auditing / continuous monitoring programs

Today's continuous auditing frequency

- **Source:** 2009 State of the Internal Auditing Profession
- **Copyright:** PricewaterhouseCoopers LLP 2009

Continuous auditing and continuous monitoring become “right time” when the timing and frequency of evaluation matches business requirements. What frequency is right for your revenue transactions? Supply chain?
QuickStart\textsuperscript{sm} Methodology

Brainstorming

- Brainstorm
  - Review Audit Objectives
  - Explore Internal Data Sources
  - Compare vs External Data Sources
  - Consider with other Audit Tests
  - Use Trending and Exception Queries

Brainstorm

Acquire and Map Data

Refine and Sustain

Analyze and Report

Write Queries

Data Analytics is the Connect between thoughtful Questions, and (Digital) Data

- What business or control questions would you like to answer? Why?
- How would you identify the answer today?
- Would knowing the answer in greater depth be useful?
- What about knowing the answer more often (i.e. greater frequency)
- Disparate data files, especially external ones, often hold the key.
QuickStart™ Methodology

Acquire and Map Data

- Identify specific sources
- Explore direct vs. flat file access
- Submit written data request, including control totals
- Tie out record counts and control totals
- Trace control totals back to ledger or other source systems

Write Queries

- Virtual Fields
- Join
- Summarize
- Stratify
- Extract
- Filtering Criteria
- Trending
- many other command and techniques

Analyze and Report

Refine and Sustain

Brainstorm
QuickStart℠ Methodology

Analyze and Report

• Consider Trends and Exception Queries
• Graphs and Tables
• Correlation analysis
• Pivot Tables
• Other Techniques
• Charts / color / directionality

Refine and Sustain

• After-Action Review
• Re-use Queries for Follow-up Tests
• Re-use Queries for Risk Assessment
• Transition Queries to Management
Refine and Sustain Examples

- After Action Review
- Consider timing of key audit tasks
  - What should we do earlier?
  - What could we do later?
  - Who else should we involve? Why?

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Case Study 1 – Research University (Beginning to Intermediate)

- Where was “here” for them?
  - New software / no experience using it
  - Difficulties getting data from IT
  - Excellent analysis and reporting skills

- Where was “way point” (an interim “there”) for them?
  - Practical success using the new software
  - Methods and templates for broadening use of the software on their team
  - Repeatable methods and scripts for getting data from IT

Focus for QuickStart℠ – Research University
Case Study 2 – Health Insurance / Payer (Intermediate to Advanced)

- Where was “here” for them?
  - No confidence in experience with business process targeted
  - No experts in ACL to which they have a license
  - No knowledge of their ERP or how to request data required
  - No knowledge of writing complex duplicate search queries
  - Excellent analysis and reporting skills (with SAS / SQL)

- Where was “way point” (an interim “there”) for them?
  - Practical success using SQL skills they had
  - Methods and templates for broadening use of SQL for other similar data analysis projects
  - Better understanding of their ERP and repeatable methods and scripts for getting data from IT

Focus for QuickStart℠ – Health Insurance / Payer

- Brainstorm
- Acquire and Map Data
- Analyze and Report
- Write Queries
- Refine and Sustain
Exercise – P-Card Audit Planning

Assumptions:

• Data acquisition is easy and free. Any interesting data file, whether internal or external, can easily be made available on our audit department server (PC, USB Drive, etc.)
• Programming resources are plentiful. Most any query that the team brainstorms can be developed at a reasonable cost.
• There is sufficient time between planning and fieldwork, such that the queries can be developed, tested, and executed.

So….

• Begin with audit objectives. What questions should we answer?
• Besides P-Card data, what else is useful to answer those questions?
• And what interesting queries would you want to write?
• How should we organize our questions and queries?

Exercise Results: Cross-reference Questions to Data Sources in Excel
What might Audit “Utopia” look like? How far away are we?

Implementing continuous auditing across your audit methodology is not about technology
...it's about a model that acknowledges the impact of People, Audit Process, and Governance

We advocate that risk assessment should be the centerpiece of the audit process
What does a Continuous Auditing or Monitoring solution look like?

The Platform

Knowledge Maintenance Console

Extract, Map & Load

Audit Database

Reasoning & Analytics Engine

Workflow Engine

Visual Reporting / User Interface

Platform Data & Logs

Systems of Record

AP, HR, and/or GL Data

Contract or Project Data

Watch List data

Extract & Mapping Rules

Common Data Models

Risk and Performance Checks

Workflow & Platform Configuration

Knowledge Maintenance Console

Extract, Map & Load

Audit Database

Reasoning & Analytics Engine

Workflow Engine

Visual Reporting / User Interface

Platform Data & Logs
Key Capabilities of CM Solutions

- Non-invasive extraction from systems of record
- Ability to define and easily map into common data models
- Identify and track revisions to master data
- Modern, easily configured data analytics engine
- Interactive review, filtering, and assignment of exceptions
- Dashboard with click- and drill-through to row-level exceptions
- Query results can be configured to track exceptions AND activities / results of exception research

Wrap-up Thoughts

- Assess where your audit team is on the Maturity Curve. Where do you want to be? Find a small win opportunity and get started.
- Begin with more frequent risk assessment. What questions should we ask each quarter to tell us whether our risk assessment is still on target?
- Identify an audit where you can be data-driven in your analysis. What questions do you want to answer? How does management know?
- Identify management reports that audit can use to validate financial or operational performance? Would accessing the data sources directly answer other questions?
- Challenge your teams to be the R&D lab for innovation in continuous monitoring and data analysis
For Additional Information

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Read our blog at: http://ContinuousAuditing.Blogspot.com
Or follow us on Twitter at: www.twitter.com/VisualRiskIQ

Additional Reading and Resources

http://www.theiia.org/guidance/technology/gtag3
www.acl.com/blog
www.Audimation.com/Monitor
www.oversightsystems.com

LinkedIn Groups:
- Continuous Controls Monitoring
- Continuous Auditing