Using Data Analytics to Mitigate Compliance Risk

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Today's Agenda

1. Three areas in which data analytics benefits compliance risk management
2. How to design effective analytics
3. Performing analytics yourself vs. directing an analytics program

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PART 1

Introduction and Overview of Data Analytics

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Analytics Used in Three Phases

Monitoring & Auditing

Assessing Allegations

Conducting Investigations

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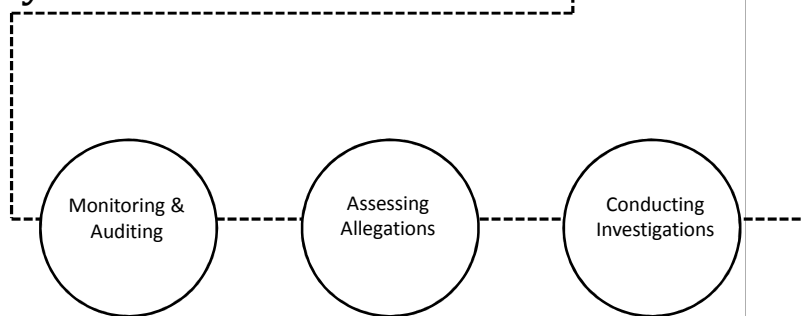
Uses of Data Analytics

1. To assess credibility of an allegation or concern
2. To determine which documents and records should be inspected
3. To identify additional individuals who may have been involved
4. To prioritize or identify suspect transactions
5. To determine where internal controls broke down or were intentionally violated
6. To assess whether noncompliance was intentional or accidental
7. To estimate the full extent of the problem

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Benefits of Data Analytics

- Ability to analyze 100% of a population rather than testing a sample
- Efficiency and effectiveness of analysis
- Can assess operating effectiveness of internal controls
- Ability to identify and monitor trends
- Improved capabilities for detecting relationships

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Biggest Challenges

- Clarifying scope
- Data accessibility/acquisition
- Data security
- Data verification and cleansing
- Privacy concerns
- Learning curve associated with performing tests
- False positives

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Types of Data

Structured	**Unstructured**
• Accounting/financial	• Journal entry explanations
• Inventory	• Purchase descriptions
• Sales/purchases	• P.O. explanations
• Payroll/H.R./timekeeping	• Variance explanations
• Security	• E-mails, IMs, etc
• Customer service	• Photo, video, audio files
• System access/use	• Social media activity
• Travel, asset use, etc	• News feeds
• Spreadsheets	

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Commonly Used Functions

- Aging
- Duplicate searches
- Filter, sort, stratify
- Compliance verification
- Frequently used values
- Join and relate (two sources of data)
- Gap tests
- Unusual times or dates
- Trend analysis
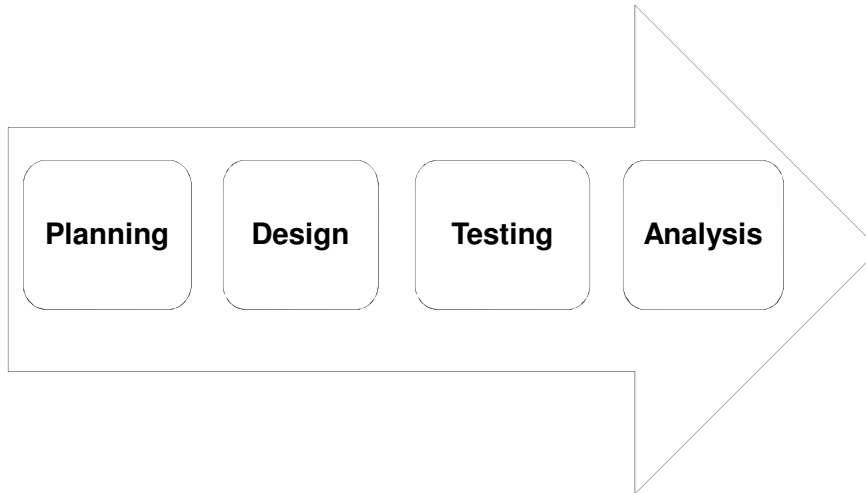- Regression/correlation
- Text analytics

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PART 2

The Process and Framework

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The Data Analysis Process

| Planning | Design | Testing | Analysis |

The Data Analysis Process

Planning

- Scope of data analytics project
- Period of time to be covered
- What types of data
- Ownership and availability of data
- Tools and personnel needed
- Timing
- Goals and objectives of the analysis

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The Data Analysis Process

Design

- What anomalies are we looking for?
- Which data is affected and how?
- Assess risk of false positives
- Complete design (set-up, programming, etc)

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The Data Analysis Process

Testing

- Obtain data
- Verify data
- Cleanse and normalize data
- Run the test(s)
- Report results

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The Data Analysis Process

Analysis

- What's it mean?
  - Are there signs of noncompliance?
  - Are there indications that the noncompliance was intentional?
- What are our next steps?
  - Pull documents?
  - Interviews?
  - Escalate?
  - Design follow-up analytics?
  - Expand scope?
  - Consider additional subjects?
  - Stop?

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Framework for Using Data Analytics

- Which data is affected, and how, in each stage of a compliance issue:
  1. Leading indicators (if any)
  2. Preventive control that should have prevented the act
  3. Perpetration/violation - the act itself
  4. Concealment – is often separate from the act itself
  5. Detective control that should have detected the act
  6. Lagging indicators (effects of the act, if any)
- How would data associated with an improper transaction/activity differ from that of a legitimate one?

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PART 3

Use of Analytics for Monitoring & Auditing

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Identifying Records & Data Needed

- Develop process map of the transaction/activity cycle(s) involved in the target area of the monitoring
  - MUST understand how the transaction cycle operates in order to identify relevant records needed
- Based on this process map, identify:
  - People involved in each step and what each person does
  - Internal controls
    - Preventive
    - Detective
  - Documents and records created or processed
    - Received
    - Created
  - Electronic records
  - Systems and databases affected

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Identifying Records & Data Needed

- **<u>Example</u>** – For corruption in the purchasing cycle:
  - Identification and documentation of need
  - Development of specifications, if necessary
  - Solicitation of bids or negotiation with alternative vendors
  - Selection of vendor
  - Contract, statement(s) of work, etc
  - Purchase orders
  - Change orders, subcontracts, etc
  - Receipt of goods or services
  - Submission, review and approval of invoice
  - Payment
- In addition, what other internal records would we expect along the way? E-mails, electronic approvals, etc.

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What Next…

- Anomalies found in performing data analytics rarely prove intentional acts of noncompliance
- What anomalies might identify:
  - That an internal control was not followed as designed
  - That specific transactions/activities should be looked at further
  - That certain documents should be reviewed

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Example

- Analysis of data from an online travel expense reporting system found two anomalies:
  - Several supervisors reviewed their workers' expense reports without ever opening the PDF supporting documents
  - One supervisor (included above) "approved" 17 expense reports while logged into the system for 37 seconds!
- What's it mean?
  - A critical detective internal control (identifying whether employees with corporate credit cards charged inappropriate items to the cards) is not operating as designed
- What to do?
  - Notify supervisors (or their supervisors)
  - Training
  - Deeper dive to assess whether fraud is occurring? Collusion?

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Deeper Dive

- Possible next steps:
  - Review expense reports and supporting documents
  - Additional analytics:
    - Assess correlation with specific salespeople, customers, or supervisors
    - Compare to PTO or timekeeping records
    - Compare to SalesForce or similar customer contact management systems
  - Interviews

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Multi-Factor Analytics

- Excellent method of reducing false positives to make analytics more precise
- Involves identifying multiple possible anomalies that are consistent with a particular risk
- Follow up only if a certain number of red flags result
- Might also consider weighing factors differently and using a pass/fail score to determine whether to follow up on transactions/activities

The Devil's in the Data

- When fraud or corruption is involved, concealment leaves a digital trail:
  - Deleting electronic records
  - Altering electronic records
  - Adding electronic records
- Sometimes, unintentional noncompliance still leads to concealment
- Don't overlook "the curious incident of the dog in the night-time"
  - Sometimes the lack of a record is important

PART 4

Use of Data Analytics

For Investigations

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Data Analytics to Assess the Allegation

- Data analytics can be used to assess the credibility of an allegation, helping to determine whether to launch an investigation
- If the allegation is true:
  - What data would be created or touched in the processes involved
    - Use the framework explained earlier
  - How would characteristics of the data associated with noncompliant activities differ from data involved with compliant activities
  - Perform data analytics to see if these characteristics are present, consistent with noncompliant activity
  - Data analytics does not prove fraud, corruption, noncompliance, etc; But it can provide evidence of characteristics that are consistent with such improper activity

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Analytics During the Investigation

- Can be used to extrapolate findings to a population
- Useful in calculating damages
- Anomaly/noncompliance can be used to model the known event to scan other populations for similar events
- Helpful in assessing how a break-down occurred; Which internal controls broke and how

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Other Useful Tools

- Forensic imaging
- Hand-held devices
- eDiscovery
- Link analysis
- Graphic depiction of data

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QUESTIONS ??

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