Use of Forensic Data Analytics in Investigations

Gerry Zack, CCEP, CFE, CIA
CEO
SCCE & HCCA
Minneapolis, MN
gerry.zack@corporatecompliance.org

1

Today's Agenda

1. A framework for using analytics in compliance investigations
2. Effective design of forensic data analytics
3. What next? Following up on what the analytics tells us

2

Applications of Analytics

- Three most common applications of data analytics in connection with compliance:
  1. As a monitoring activity
     - Most common use
  2. In response to an allegation
     - To assess credibility of an allegation
  3. As part of an investigation
     - Determine extent of noncompliance
     - Extrapolate findings
     - Identify co-conspirators

SCCE Society of Corporate Compliance and Ethics

3

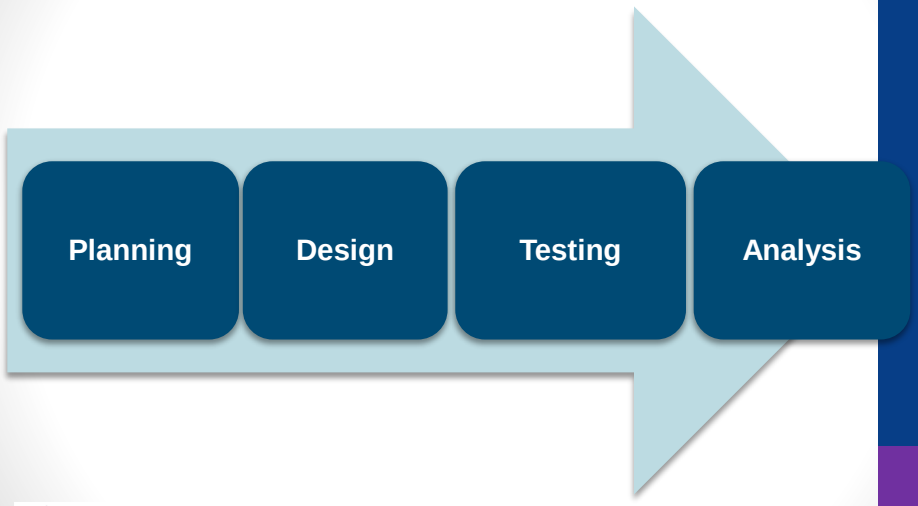
PART 1

A Framework for the Use of Data Analytics

SCCE Society of Corporate Compliance and Ethics

4

The Data Analysis Process



5

Framework for Using Data Analytics

- Which data is affected, and how, in each stage of a compliance issue:
  1. Preventive control that should have prevented the act
  2. Perpetration or noncompliance event - the act itself
     - Intentional
     - Unintentional
  3. Concealment – often separate step(s) from the act itself
  4. Detective control that should have detected the act
  5. Effects of the act (if any)

6

Framework for Using Data Analytics

- Focus on all five elements helps to:
  - Determine who was involved – co-conspirators, etc
  - Identify which controls broke down or were violated
  - Assess whether any key controls were missing or improperly designed
  - Map exactly how the subject did what they did
  - Prove intent
  - Develop a timeline
  - Assess damages to the organization
  - Prepare root cause analysis
  - Develop corrective action plan

SCCE Society of Corporate Compliance and Ethics

7

Types of Data

Structured

- Accounting/financial
- Inventory
- Sales/purchases
- Payroll/H.R./timekeeping
- Security
- Customer service
- System access/use
- Travel, asset use, etc

Unstructured

- Journal entry explanations
- Purchase descriptions
- P.O. explanations
- Variance explanations
- E-mails, IMs, etc
- Photo, video, audio files

SCCE Society of Corporate Compliance and Ethics

8

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

9

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

10

PART 2

Effective Design of Data Analytics

11

Identifying Records and Data Needed

- Develop process map of the transaction/activity cycle(s) involved in the area under investigation
  - MUST understand how the transaction cycle operates in order to identify relevant records/people needed
- Based on this process map, identify:
  - People involved in each step
  - Internal controls
    - Preventive
    - Detective
  - Documents and forms
    - Received
    - Created
  - Electronic records
  - Systems and databases affected

12

Identifying Records and Data Needed

- **Example** – For alleged 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.

SCCE Society of Corporate Compliance and Ethics

13

Example Data Sources: Bribery Payment Schemes

SOURCE	USES
Vendor master file	Identifies all approved vendors
Accounts payable ledger	Lists when and to whom payments are due
Cash disbursements journal	Lists all cash disbursements
Purchases journal	Reports requests for purchases
Selected GL accounts • Charity/donations • Agent/consulting payments • Marketing expenses	Identifies accounts where payment of a bribe could be hidden
Travel and entertainment	Itemized T&E submissions

SCCE Society of Corporate Compliance and Ethics

14

Go Back to the Framework

- What data is involved in each of the following, and how would an improper transaction differ from a proper one:
  1. Preventive control that should have prevented the act
  2. Perpetration or noncompliance event - the act itself
  3. Concealment
  4. Detective control that should have detected the act
  5. Effects of the act (if any)

15

Example

- Allegation – that a controller was submitting and being reimbursed for personal travel and other expenses
- First step – learn the process for how expense reports are processed for the organization
- Identify relevant data to confirm understanding and to capture population of data to analyze
- The results:
  - Pulled data for all expense reports for a period of time
  - Noticed an anomaly associated with the subject's expense reports
    - Every expense report was input by one of two people (based on User IDs) except for the subject, whose reports were processed by someone else
  - Led to a deeper dive of both employees' time and expense reports

16

The Results

- The other employee had access to the A/P system used to process expense reports
- The other employee was in collusion with the controller
- Since the other employee also was involved in the payroll function, we analyzed payroll data
- Found that the two employees also perpetrated a payroll fraud that was much bigger than the expense reimbursement fraud

17

Group Discussion

- **Allegation**: That our company is improperly billing a government agency by (1) charging for certain products we did not deliver and (2) misclassifying certain services provided to the government in order to charge at a higher rate than the contract would allow.
- Using the 5-part process introduced earlier, how might data analytics be used to show:
  - Break-down of a detective control
  - Commission of the act
  - Concealment of the act
  - Break-down of a detective control
  - The effect of the act

18

Group Discussion

- **Allegation**: That one of our employees is paying bribes in exchange for preferential treatment resulting in sales for our company.
- Using the 5-part process introduced earlier, how might data analytics be used to show:
  - Break-down of a detective control
  - Commission of the act
  - Concealment of the act
  - Break-down of a detective control
  - The effect of the act

SCCE Society of Corporate Compliance and Ethics

19

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

SCCE Society of Corporate Compliance and Ethics

20

Example

- Factors that could be present in sales transactions in which our company violated FCPA:
  - Customer is a government agency
  - Previously unused subcontractor
  - Lack of key identifying information for subcontractor or third party (e.g. no street address, etc)
  - Address of subcontractor or third party out of range for where work is to be done
  - Portion of contract for services versus hardware is higher than usual range
  - Pricing in final quote is higher than second to last quote
  - Unusual profit margin on contract
  - Service line item in final quote that was not in previous quotes
  - Many others !! Use your imagination !!

SCCE Society of Corporate Compliance and Ethics

21

PART 3

What next?

Following up on the results of analytics

SCCE Society of Corporate Compliance and Ethics

22

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

23

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?

24

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

SCCE Society of Corporate Compliance and Ethics

25

"Reverse Proof"

- The concept of considering each of the legitimate (i.e. no compliance problem) explanations for an anomaly/red flag
- If after considering all explanations, each has ben ruled out, the only remaining explanation is that a violation occurred

SCCE Society of Corporate Compliance and Ethics

26

Example – Reverse Proof

- Anomaly: Properties of a PDF document indicate the document is dated 4/15/2018 supporting an expense report and other PDF supporting docs all dated 2/25/2018
- Possible legit explanations:
  - Document was missing from initial submission
  - Initial document was insufficient, supervisor requested better documentation
  - What else?
- If none can be proven, it might be fraud – subsequent alteration of a document to conceal an improper expenditure

27

QUESTIONS ??

Gerry Zack, CCEP, CFE, CIA
CEO
SCCE & HCCA
Tel: +1 952.567.6215
gerry.zack@corporatecompliance.org

28