



# Forensic Audit in Practice

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# WHAT IS FRAUD?

*“Fraud is the unlawful and intentional making of a misrepresentation with the intent to deceive and to defraud by causing actual and potential prejudice”*

*“Wrongful or criminal deception intended to result in financial or personal gain”*

*“Unfair advantage by unlawful or unfair means”*

# Fraud or Error

- The distinguishing factor between fraud and error is whether the underlying action that results in the misstatement in the financial statements is ***intentional or unintentional***.
- Unlike error, fraud is intentional and usually involves deliberate concealment of the facts.
- Error refers to an unintentional misstatement in the financial statements, including the omission of an amount or disclosure.

# What Fraud can Cost to a Company?



Corporate  
Espionage

Loss of  
Propriety  
Information

Huge  
Financial  
Loss

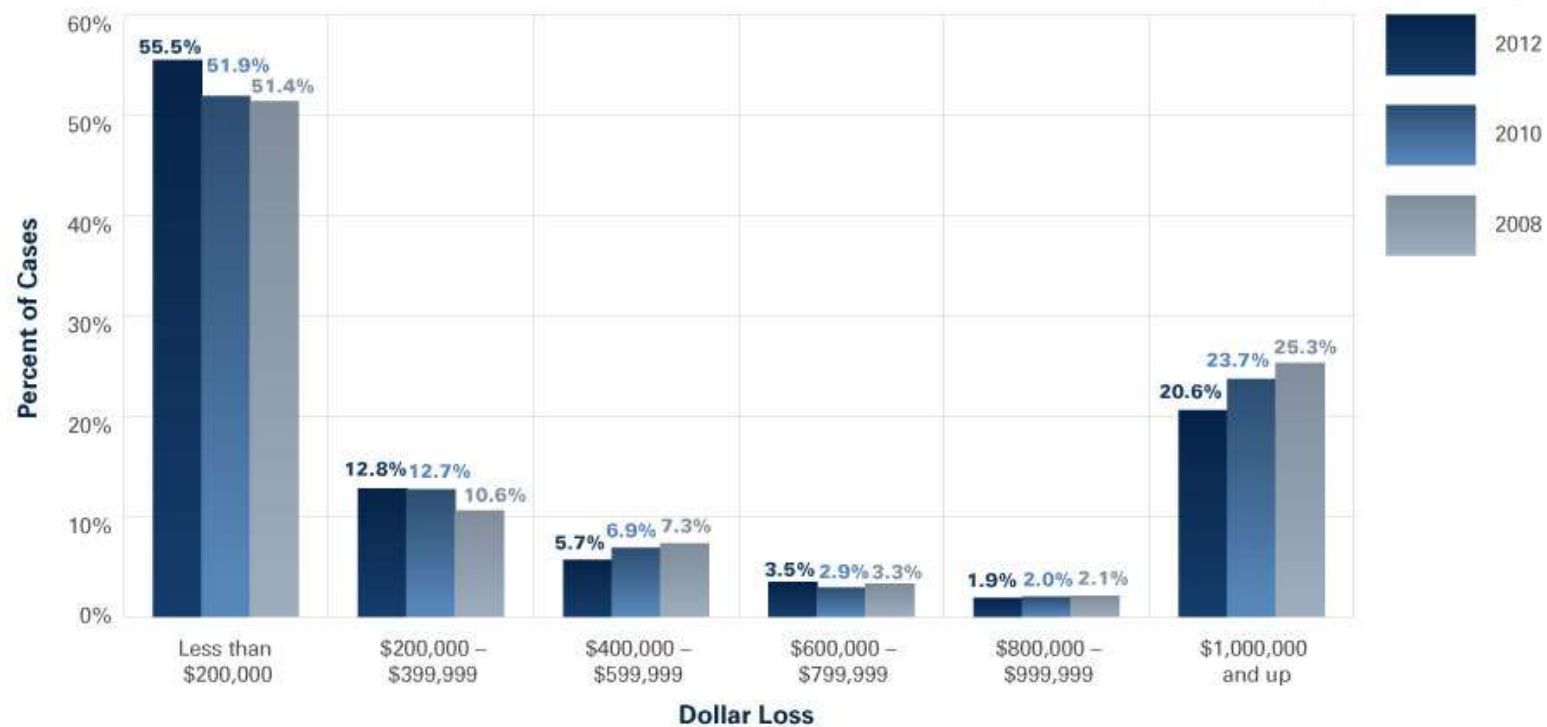
Negative  
Publicity

# The Cost of Occupational Fraud



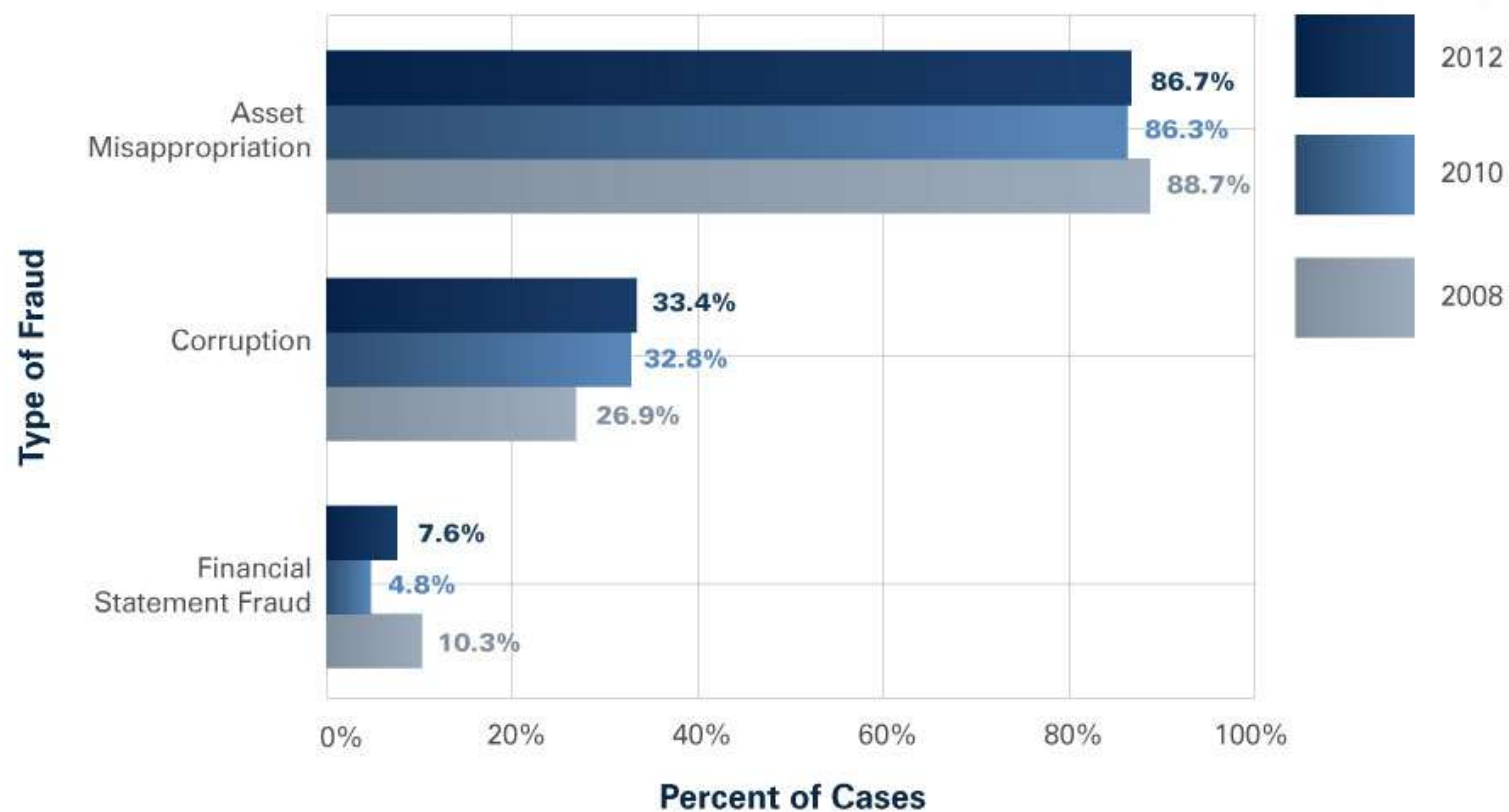
- **The typical organization loses an estimated 5% of its annual revenues to occupational fraud.**
- **Financial statement fraud is the most costly form of occupational fraud, causing a median loss of \$1 million.**

# Distribution of Dollar Losses





# Frequency of Occupational Frauds



# Occupational Frauds— Median Loss

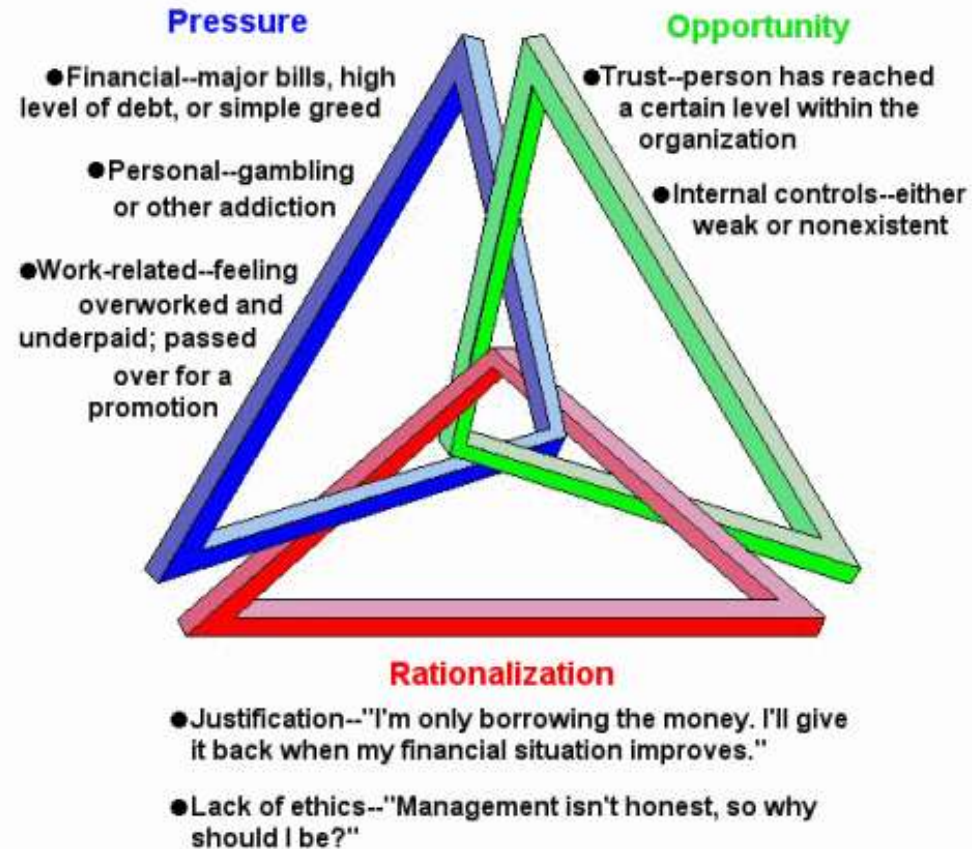




# Fraud Triangle

## The Fraud Triangle

All three components must be present at the same time for someone to commit fraud



# Who is a typical fraudster?

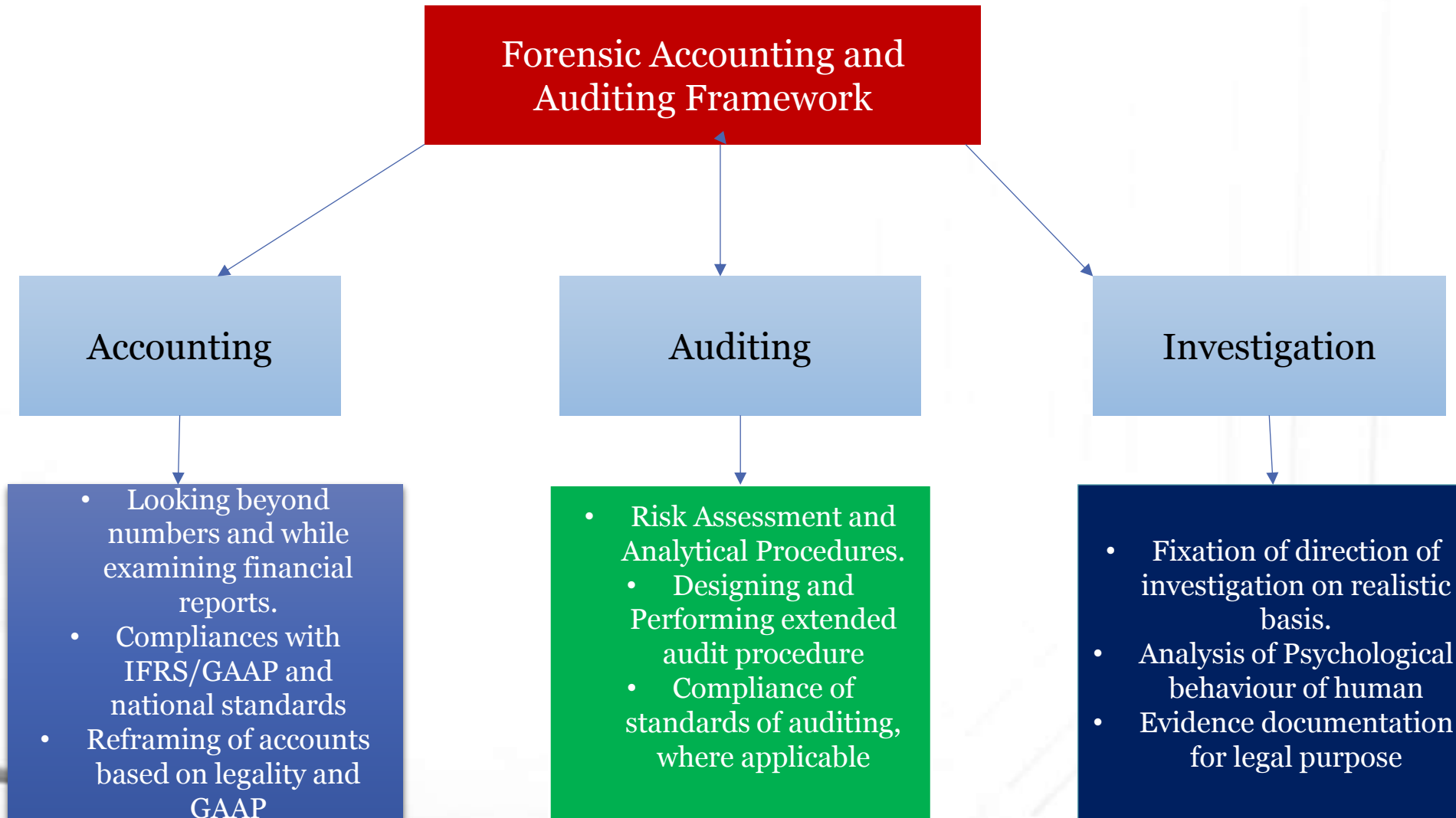
- Perceived as someone greedy and deceitful by nature.
- it's someone driven by influencing factors – financial worries, job dissatisfaction, aggressive targets or simply an opportunity to commit fraud.



# Deterrence of Fraud

- 
- Reduce the pressures to commit financial statement fraud
  - Reduce the opportunity to commit financial statement fraud
  - Reduce rationalization of financial statement fraud

# Forensic Accounting and Auditing Framework



# Categories of Financial Forensic Engagements

- Economic damages calculations, whether suffered through tort or breach of contract;
- Post-acquisition disputes such as breaches of warranties;
- Bankruptcy, insolvency, and reorganization;
- Securities fraud;
- Tax fraud;
- Money laundering;
- Business valuation; and
- Computer forensics/e-discovery.



# Forensic Audit Tools





# Tools of Forensic Auditing

1. Benford's Law
2. RSF (Relative Size Factor)
3. SSS
4. Data mining techniques
5. Big Data
6. Gel1 and Gel 2

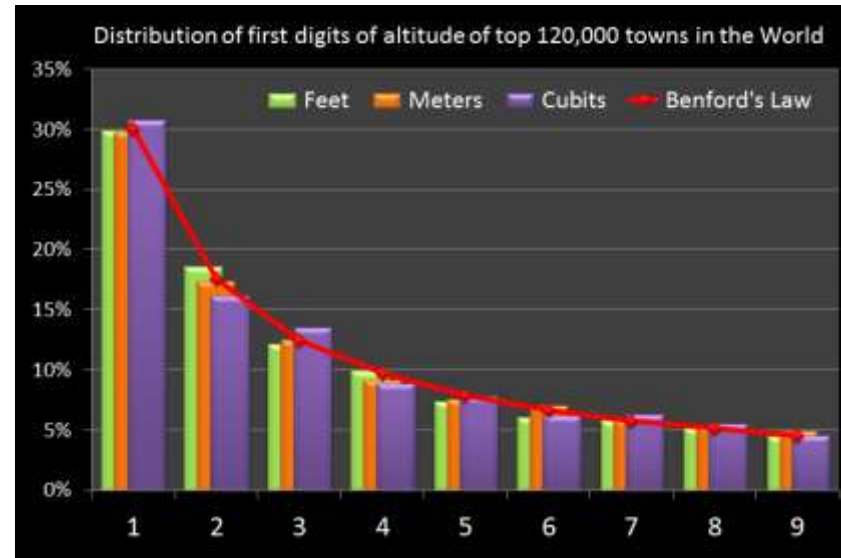
# Benford's Law

- **Benford's formula** states that the probability of the leading digit being of a certain value can be described by the following function:

$$\Pr(d) = \log_{10}(d+1) - \log_{10}(d)$$

This simplifies to:

$$\Pr(d) = \log_{10}\left(1 + \frac{1}{d}\right)$$



## Interesting Applications

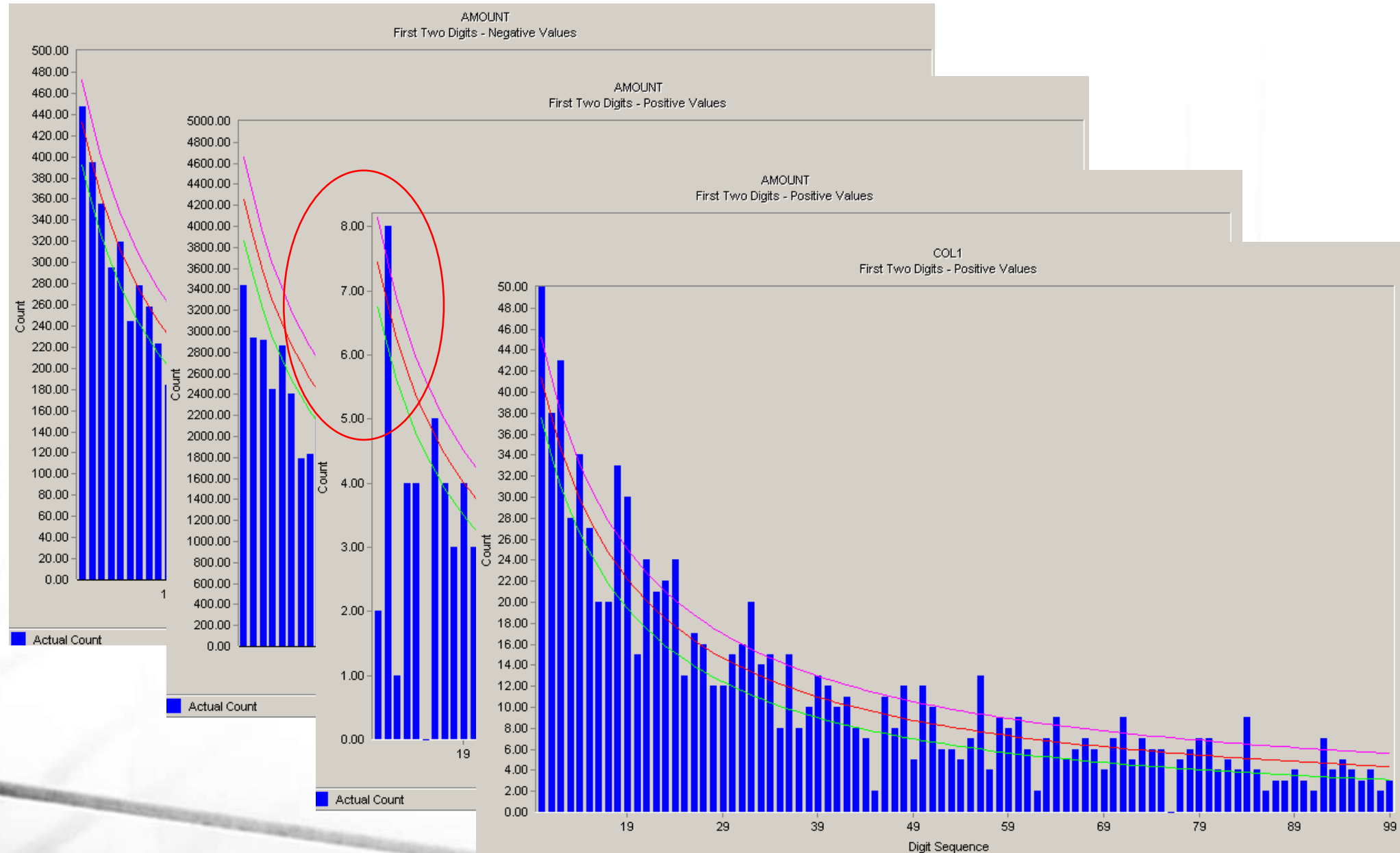
Most people who commit fraud with numbers are not aware of **Benford's Law**.

Tables of figures in tax-returns, expense reports, sales records and voting record volumes, for instance, should all follow a Benford distribution. A deceptive person, trying to fabricate "*Random*" values to insert into a report will, most likely, select numbers that *appear* to them as unsuspicious.

They will probably select numbers with initial digits that are more uniformly distributed across the number range. As we now know, this is very, very wrong!

There is an entire industry specializing in forensic accounting and auditing which uses these phenomena to look for inconsistencies in data.

# Benford's Law: IDEA



# Relative Size Factor Test

The test identifies subsets where the largest amount is out of line with the other amounts for that subset.

RSF=

**Largest Record in a Subset**

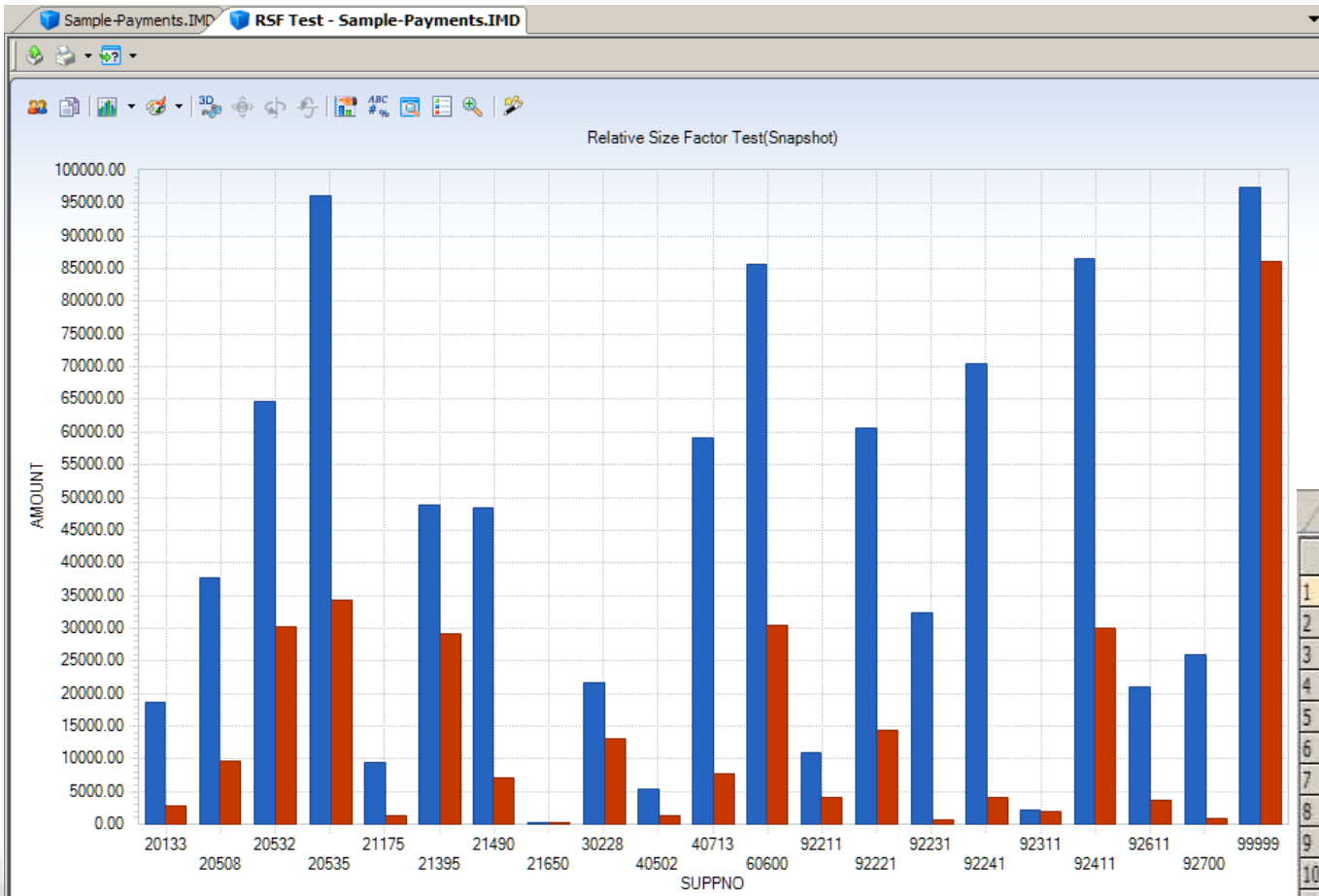
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**Second Largest Record in a Subset**

The purpose of the Relative Size Factor test (RSF) is to identify anomalies where the largest amount for subsets in a given key is outside the norm for those subsets.

This test compares the top two amounts for each subset and calculates the RSF for each.

RSF Test highlights all unusual fluctuations in accounts. It compares the highest value transaction to the second highest in each Ledger. The Factor can trigger further investigations to correct any errors/discrepancies, yielding a more precise audit.



Sample-Payments.IMD RSF Test - Sample-Payments.IMD

	SUPPNO	SUPPNAME	LARGEST_AMT	SECOND_LARGEST_AMT	AVERAGE_X_LARGEST	COUNT	RELATIVE_SIZE_FACTOR ▼
1	92231	ROBERT BLUM GMBH	32,293.40	545.09	545.09	2	59.24
2	92700	SAGE PUBLICATIONS INC.	25,943.21	795.59	795.59	2	32.61
3	92241	ROSS RIVER SERVICE CENTRE LTD.	70,509.14	4,073.20	4,073.20	2	17.31
4	21175	CORPORATE EXPRESS	9,474.74	1,198.00	1,198.00	2	7.91
5	40713	MACKENZIE PETROLEUM LTD.	59,109.76	7,804.97	3,748.19	4	7.57
6	20133	BISHOP PUBLISHING INC.	18,682.41	2,713.16	2,713.16	2	6.89
7	21490	BULOVA INC.	48,399.72	7,106.92	7,106.92	2	6.81
8	92611	MORRIS GOLD INC	21,053.24	3,685.75	3,685.75	2	5.71
9	40502	LOCKSMITH SERVICES LTD	5,432.93	1,263.89	1,263.89	2	4.30
10	92221	RIO HORA INC	60,539.44	14,370.05	7,784.03	3	4.21
11	20508	FOSSIL INC.	37,754.37	9,620.16	9,620.16	2	3.92
12	92411	SAAN STORES LTD.	86,441.66	29,990.31	16,492.66	3	2.88
13	60600	MULTI-LINGUAL TEK INC.	85,728.78	30,457.59	30,457.59	2	2.81
14	20535	JOHN PETERSON	96,166.49	34,259.55	18,238.37	7	2.81
15	92211	RICARDO BAL	11,001.66	4,091.17	2,068.26	3	2.69
16	20532	WERNER KG	64,592.51	30,097.05	15,641.26	3	2.15
17	21650	DIALOG CORPORATION	251.58	144.34	144.34	2	1.74
18	21395	D A TOWNLEY & ASSOCIATES LTD	48,911.96	29,033.80	29,033.80	2	1.68
19	30228	FABRICA TOSONI	21,632.22	13,041.42	13,041.42	2	1.66
20	99999	PENNY CILLIN	97,376.40	86,117.39	19,371.30	81	1.13
21	92311	ROYAL TRUST CORPORATION	2,072.54	1,916.80	1,916.80	2	1.08

# Same-Same-Same (SSS) Test

- Identifies records that contain fields of information that are exact duplicates of other records
- To identify abnormal duplications as potential indicators of errors or fraud

## Application

- Assists in detecting duplicate expenses claimed
- Same payment to vendors made in error
- Multiple warranty claims
- Duplicated service fees paid by private or government health plans

Sample-Payments.IMD SSS - Sample-Payments1.IMD									
	SUPPNO	SUPPNAME	PAY_DATE	AUTH	INVOICE_DATE	INVOICE	AMOUNT	CHEQUE	PURCH_ORDE
1	20508	FOSSIL INC.	04/02/2008	HMV	14/01/2008	100139	37,754.37	A52645	100082100
2	20508	FOSSIL INC.	04/02/2008	HMV	08/01/2008	TJ9729	9,620.16	A52646	100082000



# GEL-1 and GEL 2 Tests

- Detects the relationship or link within the data file as a potential indicator of fraud (GEL-1 and GEL-2)
- Establishes the link between two selected fields, with the first field being the key field and the second field being the element factor over the entire data set

*An example of the usage for the GEL tests is to detect bribery or improper relationships. Since most entities do not have access to the records of the payer company, their own data can be analysed to detect improper relationship patterns.*

# Big Data



•**Volume.** Many factors contribute to the increase in data volume. Transaction-based data stored through the years. Unstructured data streaming in from social media. Increasing amounts of sensor and machine-to-machine data being collected. But with decreasing storage costs, other issues emerge, including how to determine relevance within large data volumes and how to use analytics to create value from relevant data.

•**Velocity.** Data is streaming in at unprecedented speed and must be dealt with in a timely manner. RFID tags, sensors and smart metering are driving the need to deal with torrents of data in near-real time. Reacting quickly enough to deal with data velocity is a challenge for most organizations.

•**Variety.** Data today comes in all types of formats. Structured, numeric data in traditional databases. Information created from line-of-business applications. Unstructured text documents, email, video, audio, stock ticker data and financial transactions. Managing, merging and governing different varieties of data is something many organizations still grapple with.

## 2 New Dimensions-At SAS

- **Variability.** In addition to the increasing velocities and varieties of data, data flows can be highly inconsistent with periodic peaks. Is something trending in social media? Daily, seasonal and event-triggered peak data loads can be challenging to manage. Even more so with unstructured data involved.
- **Complexity.** Today's data comes from multiple sources. And it is still an undertaking to link, match, cleanse and transform data across systems. However, it is necessary to connect and correlate relationships, hierarchies and multiple data linkages or your data can quickly spiral out of control.

# Application of Big Data Analytics

- Slicing up lots of data into meaningful one.
- Application of data analytics
- Capability of checking of complete set of records ( complete population) and not just sample.

# **Relevant Act –Related to Forensic Audit and Investigation**

- 1. Indian Penal Code 1860**
- 2. Criminal Procedure Code 1973**
- 3. Indian Evidence Act 1872**
- 4. Indian Contract Act 1872 ...**
- 5. The Negotiable Instrument Act 1881 ..**
- 6. Prevention of Money Laundering Act 2002**
- 7 The Banker Evidence Act**
- 8. Information Technology ACT,2000**
- 9. Prevention of Corruption Act 1988 – India**
- 10.Foreign Corrupt Practice Act – US (imp for MNC – USA subsidiaries in India (FCPA)**
- 11. Sarbanes Oxley Act**
- 12. UK Bribery Act 2010**



# Forensic Audit Report



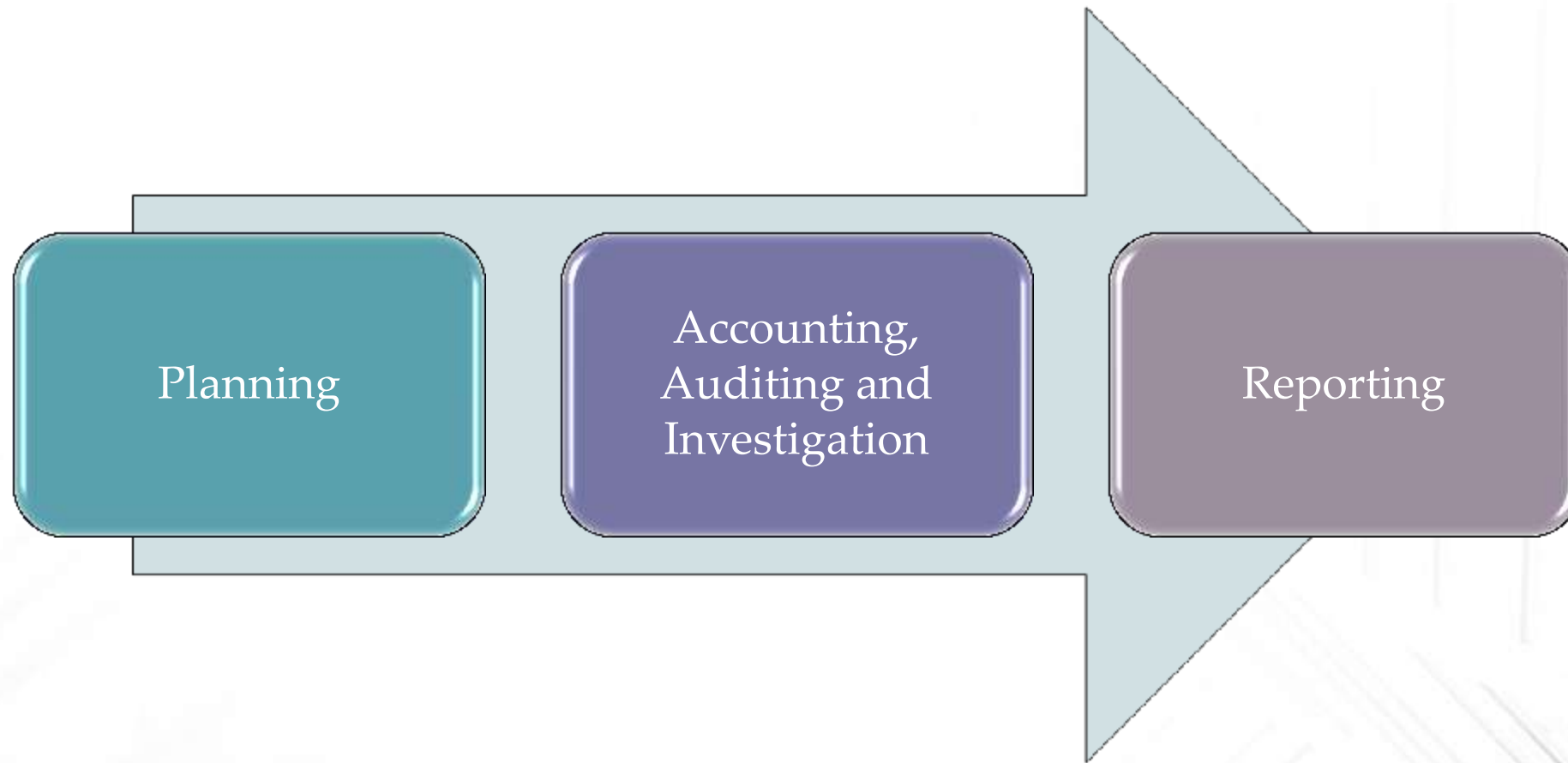
# Flow chart of Forensic Accounting



# Auditing vs. Fraud Examination

<b><u>Issue</u></b>	<b><u>Auditing</u></b>	<b><u>Fraud Examination</u></b>
<b><i>Timing</i></b>	Recurring	Nonrecurring
<b><i>Scope</i></b>	General	Specific
<b><i>Objective</i></b>	Opinion	Affix blame
<b><i>Relationship</i></b>	Non-adversarial	Adversarial
<b><i>Methodology</i></b>	Audit techniques	Fraud examination techniques
<b><i>Presumption</i></b>	Professional skepticism	Proof

# Flow chart of Forensic Accounting



# Forensic Audit Report

## **Preparation of Report:**

- The report generally includes various sections describing the nature of the assignment, scope, approaches utilized, findings, opinions and limitations. Report is generally submitted to the appointing authority.

## **Contents of Forensic Engagement**

- **Report**
- The contents of the report may vary depending on the situation, the nature and extent of the frauds and irregularities involved.
- The generalised form of such forensic accounting investigation report is shown on next slide.

# **SAMPLE TABLE OF CONTENTS (FORENSIC AUDIT REPORT)**

## **EXECUTIVE SUMMARY**

### **1.0 BACKGROUND**

1.1 Origin of the Audit

1.2 Audit Objective

1.3 Proposed Audit Outputs

1.4 Audit Implementation Approach

### **2.0 RISK ANALYSIS**

#### **2.1 Internal Environment Risk**

2.1.1 Financial Management

2.1.2 Customers, Products and Competitors

2.1.3 Information technology

2.1.4 Business Process

2.1.5 Human Resource Management

#### **2.2 External Environment Forces**

2.2.1 Influence of Economics

2.2.2 Political and Legal Scenario

# Draft Forensic Audit Report Contents

## **3.0 EVIDENCE OF RISK EVENTS**

- 3.1 Conflicts of interest
- 3.2 Bribery
- 3.3 Extortion
- 3.4 Cash theft
- 3.5 Fraudulent disbursements
- 3.6 Inventory frauds
- 3.7 Misuse of assets
- 3.8 Financial Statement fraud

## **4.0 AUDIT RECOMMENDATIONS**

- 4.1 Logical Framework Approach
- 4.2 Preconditions and Risks



# Annexures

## List of Annexes

Annex 1: Members of the Interviews

Annex 2: Organization Chart of organization

Annex 3: Financial Performance (YYYY to YYYY)

Annex 4: Audit Recommendation Logical Framework

Annex 5: Analysis of Key Risk Events

Many Others:

*There is a difference between word “Annexed” and word “Attached” in the context of writing report. Auditor has to take responsibility of the usage of word “Annexed” in the Main Report. It implies that any statement annexed along with Main Report is a part and parcel of the Main report. But he may not take responsibilities of the Exhibit, which is attached with the Main report. It may be the additional source of evidence and gives strength to the observations made in the Main Report.*

# Methodology of Reporting

## **Areas Covered – Extent of checking**

- Period covered
- Specific functions areas covered
- % Of total records checked.

## **Auditing Techniques Adopted in the Investigation**

- Carefully narrate this area – do not elaborate much. If forensic auditing techniques had not been adopted then mention it also. This will be an example of the Liability Exclusion Clause.
- Mention apart from general audit techniques, what other specific audit techniques had been adopted.
- Mention the positions with whom you have carried out the discussions and other interviewing. If any interrogation had been carried out then mention it in suitable context.
- Mention the Confession documents if any. Also mention that it is no way limiting your scope of work and extent of checking.
- Don't mention the source of acquiring evidences.

# Methodology of Reporting

## **Books and records / documents reviewed / examined**

- Basis of reporting.
- Narrate with reference to manual and computerized records.
- External documents / evidences , if any

## **Detailed Observations in each area of work under following heads:**

- **Modus Operandi of Fraud**
- Try to highlight the approximate starting time of fraudulent activities.
- Period of fraudulent activities.

## **Nature of Fraud**

- Narrate the internal as well as external collusion if any

## **Quantum Involved**

- Observations should be supported with Annexures and Other Evidences as Exhibits

# Covering Letter and Main Report

## **Covering Letter**

- Usages Restriction clause can be mentioned here according to the situation demands and to avoid further legal complications.
- Brief Outlining the highlighted points of Report annexed

## **Main Report**

### **Introduction**

- Outlining the Terms of Reference of Appointment Letter - Redraft the Terms of Reference if the Scope of work has been enlarged / reduced in the course of Investigation.

# Usage Restriction Clause, Liability Exclusion

Usage Restriction Clause, Liability Exclusion Clause can be intelligently incorporated in the specific areas of the Covering Letter / Report.

## **Example of Usage Restriction Clause   Example of Liability Exclusion Clause**

- *“This report is solely intended for the use of the Management and cannot be used in Court of Law or any other purposes”*
- *“While conducting our review, based on the above premises, we also observed that in respect of certain invoices, the basic underlying documents were not available and as such the same could not be reviewed by us for this purpose. The details of such invoices are set out in ANNEXURE – .....”*
- *“In order to determine the responsibilities involved in the perpetration / manipulation of fraud, we have relied on the names / employee codes indicated / mentioned by the transaction logs of the specific module (indicate the name of the module) of the system”*

# Example of drafting style as regards to Confession Statement

- *“Notwithstanding the confessional statement made by the perpetrator (mention the name) and in no way limiting our investigating procedures by the contents of such confession and in accordance with the directions given in the appointment letter, we have carried out detailed investigation to unearth the fraudulent transactions and total quantum involved in the same”*
- Try to draft the Report according to the **Scope of Work** and **Terms of Reference** mentioned in the appointment letter.
- Do not try to be extravagant in reporting something where sufficient evidences have not been obtained to support your observations / remarks – leave some hint for further investigation.
- Give Report only to the Appointing Authority and any other authorized positions mentioned in the terms of appointment.
- Keeping in mind that this report is subject to audit and can be used by the person or group persons to whom the charge is made. This report is the foundation for the management to act against the perpetrator and can be subject to litigation. Thus extreme cautions need to be exercised while preparing final version of the report.



# Responsibility Fixation

## **Direct Beneficiary and Indirect Beneficiary**

- Try to highlight the persons who have the direct and indirect involvement in the scheme of manipulation / fraud.
- Carefully draft this area. Choice of word is crucial and has a legal impact.
- Consult with Appointing Authority and Legal Counselor. The Legal Counselor may use the report in the court.
- Try to mention the position, not the name, otherwise required specifically by the terms of reference of the appointment letter.

## **Degree of Responsibility Fixation**

- Try to grade the responsibility fixation according to position held by the person
- Try to segregate between follower and initiator / instructor.
- Try to act as Judge of the Court and apply common rationale of thoroughbred professional

# Day 2

Group discussion and Case Study





# Real Life Case Study

# Enron Case

- James Chanos, the President of Kynikos Associates specializing in short selling, managing over 1 billion. ”
- Kynikos Associates manages a portfolio of overvalued securities

## ” Three Indicators

- ✕ Materially overstated earnings
- ✕ An unsustainable or operationally flawed business plan
- ✕ And/or engaged in outright fraud

# Key Observations-Red Flags

- Early alert: 1999 Form 10-K , Form 10-Qs in 2000
- **Enron's return on capital, 7 percent before tax**
  - ✧ 7 percent is low for this type of firm (outlier)
  - ✧ Enron's cost of capital should be close to 9% (not earning any money)
- " Company's initiative in the telecom field – not a sustainable plan
- " Shorting Enron in Nov. of 2000 (~ \$80 per share)
- " In the spring of 2001, a number of senior executives were departing from the company, the insider selling of Enron stock continued unabated.

# Enron's revenues and income

Year	Revenues	Income	Income (Restated)*
1997	\$20.2 B	\$105 M	\$9 M
1998	\$31.2 B	\$703 M	\$590 M
1999	\$40.1 B	\$893 M	\$643 M
2000	\$100.1 B	\$979 M	\$827 M

\* Without LJM1, LJM2, Chewco and the “Four Raptors” partnerships. There were hundreds of partnerships—mainly used to hide debt.



# Enron's Use of Special Purpose Entities (SPEs)

- To hide bad investments and poor-performing assets
- Quick execution of related-party transactions at desired prices. (LJM1 and LJM2)
- To report over \$1 billion of false income
- To hide debt (Borrowed money was not put on financial statements of Enron)
- To manipulate cash flows, especially in 4<sup>th</sup> quarters
- Many SPE transactions were timed (or illegally back-dated) just near end of quarters so that income could be booked just in time and in amounts needed, to meet investor expectations

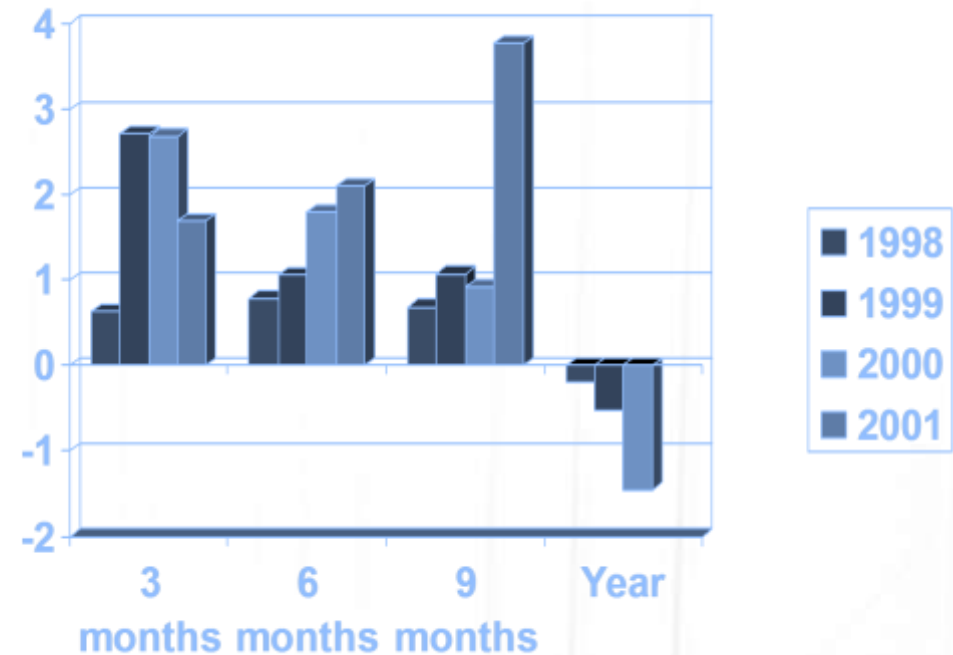
# Enron's Cash Flows

- Enron's cash flows bore little relationship to earnings (a lot due to mark to market.) On the balance sheet, debt climbed from \$3.5 billion in 1996 to \$13 billion in 2001.

- Key Ratio

$$\frac{\text{Net Income (from Operations}^*) - \text{Cash Flow (from Operations}^{**})}{\text{Net Income (from Operations)}}$$

Would expect to be about zero over time



# Case Study #2 Big Data Analytics

## **The setting**

- A Fortune 100 company conducted an anti-fraud/anti-corruption review in over 15 countries on 5 continents involving thousands of vendors and hundreds of employees.

## **The big data challenge**

- ►► Forensic collection from over 300 custodians globally
- ►► Approximately 2 terabytes of data loaded to review platform comprising over 25 million documents
- ►► 1.3 million documents reviewed by both counsel and forensic accounting professionals

## **The results**

- The project team leveraged leading FDA technologies that included data visualization and text mining into their analysis. Incorporating these FDA techniques resulted in improved project efficiencies, particularly with respect to the identification of higher risk vendors, customers and employees. Given the high volumes and varieties of data under review, the use of FDA was critical in meeting the client's tight deadlines.

## Case Study #3- Relative size Factor

- An airline auditor reported at an IATA conference that his airline had found errors that amounted to around \$1 million as a result of running this test on their accounts payable data.
- This test was developed in the mid-1990s where a company in Cleveland wired \$600,000 in error to the bank account of a charity. The \$600,000 was supposed to have gone to a vendor. Once the “wrong bank account” error was discovered the company contacted the charity, which claimed that the money had already been spent and was largely unrecoverable.
- The \$600,000 was significantly more than any amount that had been donated to the charity before. Had the company run a reasonableness test before authorizing the transfer, it would have seen that the \$600,000 was much more than the \$3,000 it donated to the charity every quarter.
- The RSF test identifies subsets where the largest amount is significantly larger than the other items in the subset. The largest amount would be significantly larger if the numbers were (say) \$8,000, \$200, \$200, and \$150.



# Nonverbal Communication









# What is nonverbal communication?

- “Oral and non-oral messages expressed by other than linguistic means.”
- Messages transmitted by vocal means that do not involve language
- Sign language and written words are not considered nonverbal communication

# Nonverbal communication is powerful

60% of all communication is nonverbal



# There are 7 types of nonverbal behavior

- Proxemics
- Haptics
- Chronemics
- Kinesics
- Artifacts
- Vocalic or Paralanguage
- Environment

# PROXEMICS (distance)

- Different cultures have different comfort levels of distance
- Proxemics convey different meanings.

# Edward T. Hall's 4 levels of distance

- **Intimate:** 0 to 18 inches
- **personal:** 18 inches to 4 feet
- **social:** 4 to 10 feet
- **public:** 10 feet to infinity

# HAPTICS (touch)

## **The power of touch:**

- A (1997) study found that strangers that were touched were more likely to return change left in a phone booth
- A (1992) study found that food servers who used touch received larger tips
- Library study (1976) found that students who were slightly touched by clerk while checking out library books evaluated the library much more favorably than those who were not touched.



# CHRONEMICS (time)

**How is time used to communicate?**

The space between sentences convey different meanings.

# KINESICS (behavior)

- Facial expressions
- Eye contact
- Body language
- Gestures
- Physical appearance

# VOLCALICS (Paralanguage)

Use of voice to communicate includes elements such as pitch, rate, pauses, volume, tone of voice, silences, laughs, screams, sighs, etc.

# Functions of Nonverbal Communication

- Repeating
- Substituting
- Complementing
- Accenting
- Regulating
- Contradicting
- Deceiving

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