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Analyzation of Audit Procedures in the Wake of the Early 2000s Accounting Scandals

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Analysis of Audit Procedures in the Wake of the Early 2000s Accounting Scandals

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University Honors Program Thesis Project

College of Business Administration, University of Nebraska at Omaha

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Abstract

Enron, WorldCom, and Tyco International were companies that operated in different industries and had different levels of net profit for decades. However, these companies had one pivotal thing in common: accounting fraud. In the early 2000s, accounting scandals from large companies created a major impact on the financial markets, causing Congress to take action to increase investor protection through the origination of the Sarbanes-Oxley Act of 2002. The Act was meant to restore investor confidence through strengthened disclosures and auditing requirements for public corporations. However, even with the creation of this new Act from Congress, fraud is still prevalent today, whether in private, public, or governmental entities. Thus, there needs to be an implementation of new audit procedures or modifications of existing procedures to further Congress's main objective of protecting the investor and shareholders of companies in the United States. This research paper will outline the three main accounting scandals stated at the beginning, which will then lead to the explanation of the Sarbanes-Oxley Act of 2002. To conclude, new audit procedures and modifications of existing audit procedures will be explored that will inevitably help deter fraud in public companies.

Introduction

At the dawn of the new century and the new millennium, many were consumed with fear of an impending electronic meltdown as clocks rolled over from 1999 to 2000. The world breathed a sigh of relief, however, when the chaos predicted in the Y2K computer debacle did not occur. Much uncertainty and unease remained, however, as the economy was teetering and a change in political power was brewing. Then, something no one could imagine at the start of a new millennium happened when the horrific tragedy of 9/11 unfolded and the resulting Gulf War ensued. Nestled within these times of uncertainty and tragedy were events of greed and selfishness that cost many investors, and their families dependent on them for financial security, thousands to even millions of dollars. The term defined as wrongful or criminal deception intended to result in financial or personal gain is not greed or selfishness - although those terms tend to go hand-in-hand with the one focused on in this paper. The term defined here is fraud.

Three major companies committed fraud of such astonishingly large magnitude in the early 2000s that the United States government was forced to intervene to protect the investors. Enron, WorldCom, and Tyco International were three major players in their respective industries that committed fraud. The government's intervention with the passage of the Sarbanes-Oxley Act of 2002 (SOX) was intended to restore the confidence of investors in the stock market. Although the government's intentions were valid, the passing of SOX has several flaws in its approach to increasing the confidence of investors in the stock market.

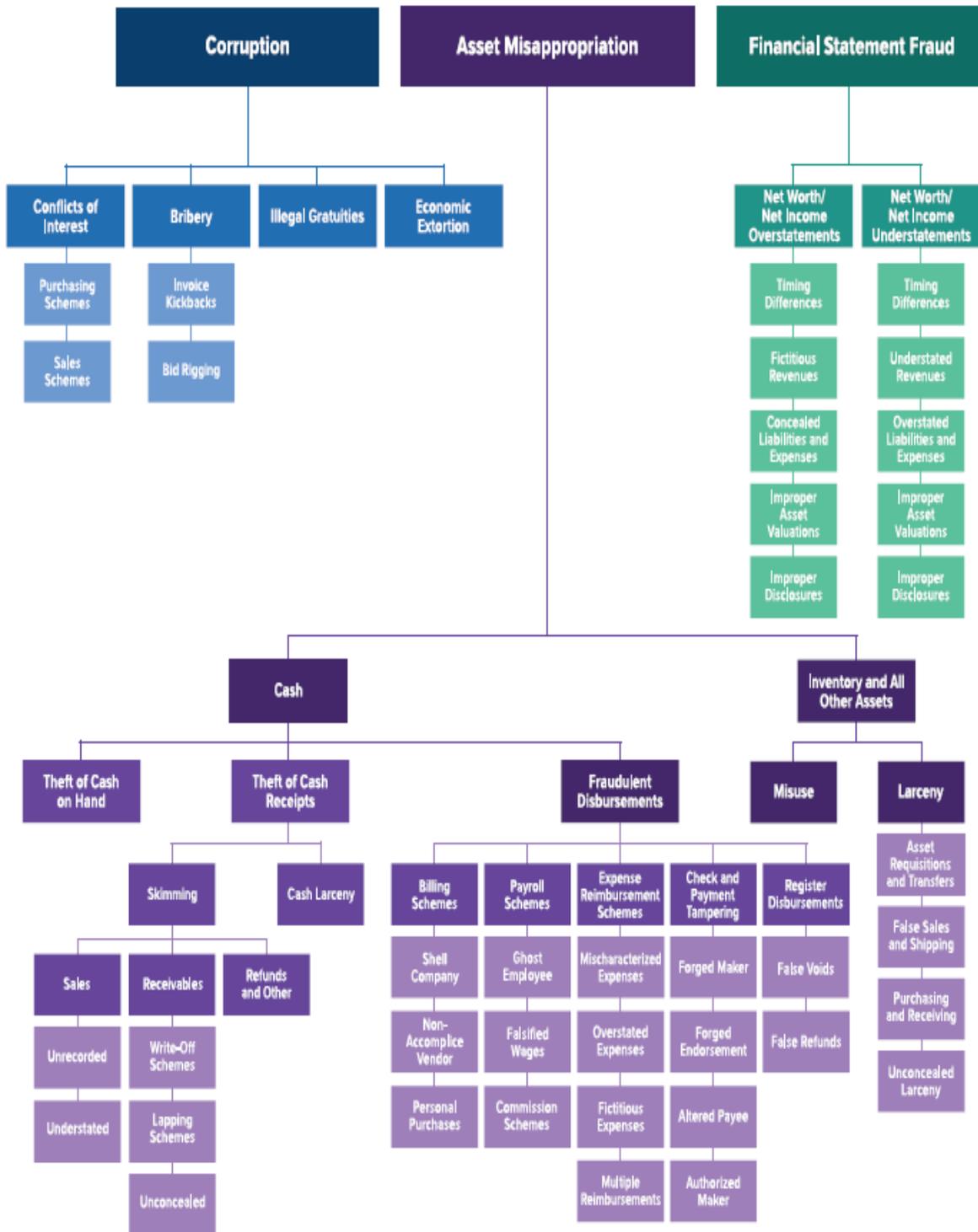
Understanding of Fraud

Methods of Fraud

Fraud is the “knowing misrepresentation of the truth or concealment of a material fact to induce another to act to his or her detriment” (*Black’s Law Dictionary*). For the financial sector, fraud focuses more on the act of an individual or individuals aimed at achieving personal gain through the misappropriation of assets, corruption, or financial statement fraud. Misappropriation of assets consists of the theft of an entity’s assets that cause financial statements not to be presented in conformity with the generally accepted accounting principles, known as GAAP (Louwers, 2021). Corruption is dishonest or fraudulent conduct by those in power, usually by the means of preference, power, privilege, or payment (Louwers, 2021). Financial statement fraud is defined as “the deliberate misrepresentation of the financial condition of an enterprise accomplished through the intentional misstatement or omission of amounts or disclosures in the financial statements to deceived financial statement users” (*Fraud*, 2003). The three companies stated in the introduction- Enron, WorldCom, and Tyco International- used one of these three fraudulent methods to commit their respective fraud.

For a better representation, Figure 1 represents a fraud tree developed by the Association of Certified Fraud Examiners. The fraud tree shows the three methods of fraud- corruption, asset misappropriation, and financial statement fraud- and the different techniques implemented within each method of fraud. Figure 1 will be a useful tool to follow when discussing each of the fraudulent cases that led to the passing of SOX. Each of the three cases involve one, or more than one in combination, of the three methods of fraud. Figure 1 also details different techniques fraudulent individuals commonly use to commit fraud within each method.

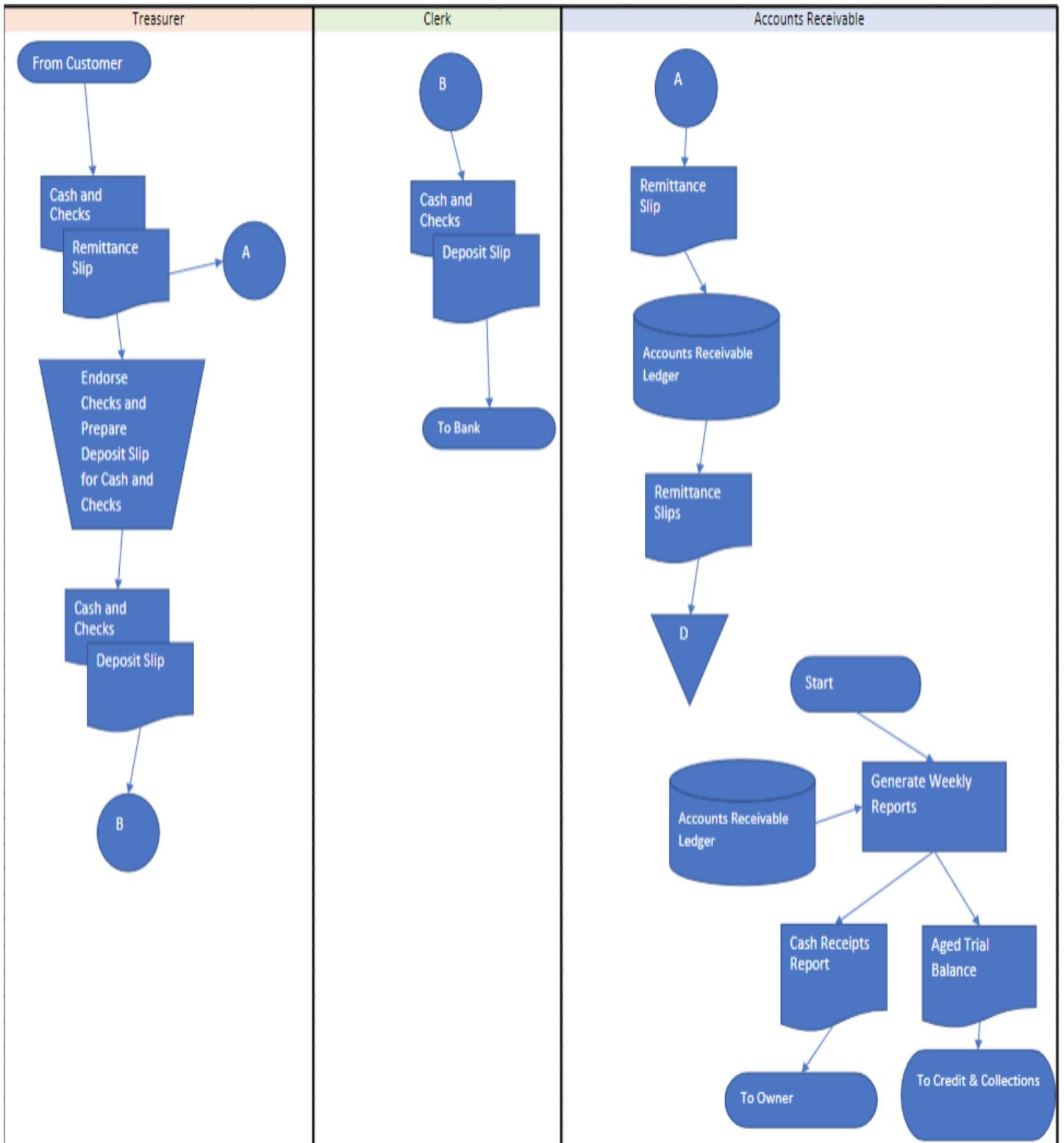
Figure 1 – Fraud Tree from the Association of Certified Fraud Examiners



Fraud Triangle

Apropos to the individual or individuals committing fraud, three components must be present for fraud to occur within a company: opportunity, pressure, and rationalization (Louwers, 2021). Figure 3, illustrated at the end of the fraud triangle section, displays a visual of the fraud triangle. Opportunities to commit fraud can be found in many different forms within a company, and generally depend on the level of internal controls in place. For a firm, fewer internal controls result in a higher risk of fraud to occur. For example, a lack of proper segregation of duties occurs if one person handles all aspects of the cash activity. This allows that individual to commit and conceal the fraud. The following illustration shown in Figure 2 details a flowchart that illustrates proper segregation of duties for cash activity at a firm. As outlined in the figure, there are three individuals responsible for the handling cash receipts at a store, and there are specifically two individuals that are in-charge of the processing of the cash receipts. The treasurer receives the cash or check from the customer and prepares a deposit slip for the cash or check. Then, the deposit slip and the cash or check is given to the clerk that subsequently takes the items to the bank. If improper segregation of duties for cash activity took place at a firm, then the treasurer would have received the cash from the customer and took the money to the bank himself, potentially depositing the money into his personal bank account instead of the company's bank account. Thus, the risk of fraud occurring is heightened when a lack of segregation of duties occurs in a firm.

Figure 2 – Example of a Flowchart Illustrating Cash Activity in a Firm



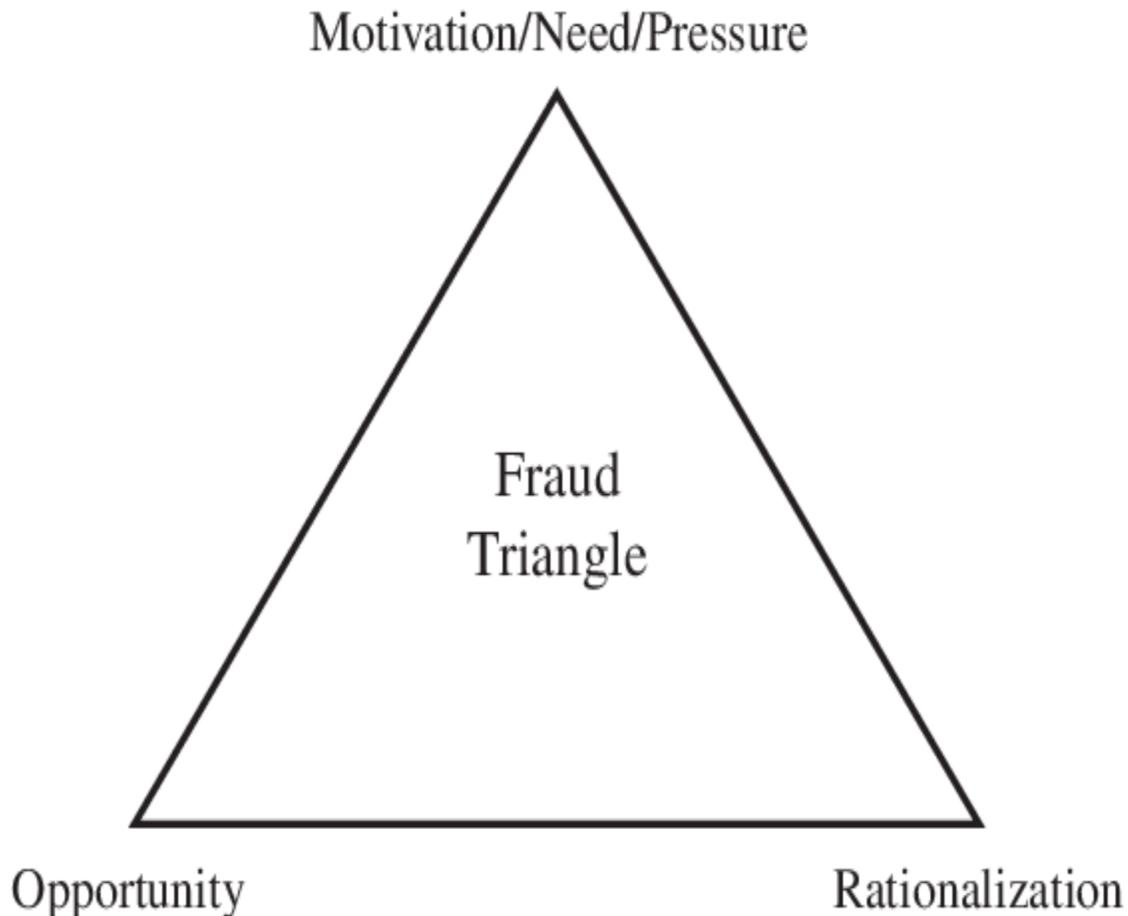
Furthermore, even if there are internal controls in place, opportunities can arise if the internal controls are not monitored or enforced properly. For example, a company may have a policy to require two individuals to process payments: one to approve payments and one to disburse the cash. However, subsequent staff shortages result in only one individual taking over both of these duties. Lastly, an opportunity to commit financial fraud can occur if an individual has too much trust from management or co-workers. People committing fraud tend to be individuals management least expects. Described later in this paper, the City of Dixon fraud provides a stunning example of the opportunities allowed by lax internal controls and misplaced trust.

Pressure or motivation, the next aspect of financial fraud, can develop from either external or internal factors. External pressure or motivation can form based on many different influences, but the most common are debt and greed. For instance, a staff accountant may commit fraud to pay off student loan debt or gambling losses. Lifestyle choices, such as having luxury items, can also heavily influence an individual to commit fraud. Internal pressure or motivation most often stems from an individual experiencing pressure to perform well within a company to receive an incentive or hold onto a position. An individual can also be motivated to commit fraud as a result of feeling underappreciated or overworked. The presence of opportunities and pressures then lead to the final necessary component of fraud: rationalization.

Individuals with both opportunity and pressure will still need to find a way to rationalize their choice to commit financial fraud. Rationalization is defined as the fraudster's self-justification that it is somehow acceptable to steal (Louwers, 2021). In the example of an overworked individual, the individual might rationalize committing fraud because "I deserve to be paid for what I am worth". Another common rationalization for financial fraud is that the

company will not miss the money or even notice the money is missing. While many employees have opportunities and pressures, it is this ability to justify the fraud to themselves that allows them to commit the fraudulent action.

Figure 3 – Fraud Triangle (Louwers, 2021)



The fraud triangle provides a representation of the factors that combine to influence an individual's decision to commit fraud. These factors are apparent in all three of the methods described in the fraud tree. In the cases of Enron, WorldCom, and Tyco International, company executives within each firm had opportunity to commit fraud and rationalized their choice based

on their respective pressures. When analyzing each individual fraud case, the opportunity, rationalization, and pressure become apparent and help explain the rational in committing fraud through either corruption, financial statement fraud, or misappropriation of assets.

Characteristics of a Fraudulent Individual

Employees committing fraud possess characteristics and may exhibit behavior that can be a warning for management to further investigate the risk of fraud within an organization.

These characteristics and behaviors include (Louwers, 2021):

- Experience sleeplessness.
- Drink too much.
- Take drugs.
- Become irritable easily.
- Cannot relax.
- Get defensive or argumentative.
- Cannot look people in the eye.
- Sweat excessively.
- Go to confession or seek psychological advice.
- Find excuses or scapegoats for mistakes.
- Work standing up.
- Work alone.
- Work late frequently.
- Do not take vacations.

However, many of these behaviors are indicative of an everyday employee not committing fraud as well. This makes fraud difficult to identify based on behavior alone. Additionally, the profile of a white-collar criminal tends to have the following characteristics:

- Possess an education beyond high school.
- Likely to be married.
- Likely to be a member of a church, mosque, or temple.
- Range from 18 to 65 years old.
- Likely to be socially conforming.

- Likely to have an employment tenure of 1 to 20 years.
- Possess no arrest record.
- Likely to act alone.

Once again, identifying a white-collar criminal through the presence of these characteristics bodes equally as challenging. For instance, using the identifying characteristics of a white-collar criminal, a large majority of the college student body would be identified as a white-collar criminal. Thus, an audit team cannot rely on observed behavior and needs to develop a well-planned test of the internal controls to identify a potential risk of fraud.

One of the most infamous cases of governmental fraud is the perfect example of a white-collar criminal. In the City of Dixon, Illinois, Rita Crundwell, the former Comptroller and Treasurer, stole an estimated \$54 million from the city from 1990 to 2012. During these 22 years, she created a secret bank account named the Reserve Sewer Capital Development Account (RSCDA) and would have the money deposited into another account called the Capital Development Fund through fabricated state invoices. The checks would be payable to the Treasurer, which she then deposited into the RSCDA fund (Kartemquin, 2017). She would then use the funds deposited in the RSCDA as her personal bank account since she had sole access to the funds.

The components of the fraud triangle are clearly apparent in the Crundwell fraud case. She had the opportunity to manage the city funds. And, when paired with her sterling reputation within the city government, she had every opportunity to create an account within the bank under the umbrella of the city government. Additionally, since the City of Dixon was small, Crundwell had nearly complete control over the city's accounts, with few employees having access to the city's financial statements. This indicates an internal control deficiency of lack of segregation of duties, thus providing all the **opportunity** she needed to commit and conceal the fraud.

Crundwell did not have any external debt to repay. Rather, she had a passion to breed horses for competition and her desire to further this pursuit is the **pressure** encouraging her to take the fraudulent actions. She **rationalized** her fraud by assuming that since the fraud would never be discovered, no one would be hurt by it. In other words, what they don't know can't hurt them.



Pictured above with one of her championship horses, Rita Crundwell is an exceptional example of a white-collar criminal. Using the list of behaviors and characteristics identified above, Crundwell would often work alone, find excuses for mistakes, and become argumentative or defensive if anyone questioned her. Furthermore, she was a 37- to 59-year-old during the time of her fraud, with no prior arrest record. Crundwell was also socially conforming and became an active member of the community, thus reducing any skepticism on the part of her co-workers. The case of Rita Crundwell and the City of Dixon is a prime example of why auditors need to create a well-developed audit test plan as fraud can be conducted even from the least likely of people. And because the fraud continued for nearly a decade after the passage of SOX, it supports the need for modification of SOX and associated audit procedures.

Fraudulent Cases of the Early 2000s

Enron

Enron was founded in 1985 by Kenneth Lay in the merger of Houston Natural Gas Corporation and InterNorth, Inc., two natural-gas transmission companies. In the early 1990s, Congress adopted a series of laws to deregulate the sale of natural gas, which caused Enron to lose its exclusive right to operate its pipelines (Bondarenko, 2022). As a result, with the help of Jeffrey Skilling, the eventual CEO of Enron, the company developed itself into a trader of energy derivative contracts, ultimately acting as the intermediary between the natural-gas producers and their consumers. By becoming a trader of energy derivative contracts, Enron soon dominated the market for natural-gas contracts, generating massive profits on its trades. Skilling later focused the attention of the company on aggressive trading that would generate as much cash from the trade.

Although Enron was successful initially, the increased competition within the energy-trading business consequently led to the company's profits beginning to shrink rapidly. Instead of finding alternative means of increasing revenue, the company executives began to rely on dubious accounting practices, such as "mark-to-market accounting," to hide the poor performance of the company from shareholders. The practice of "mark-to-marketing accounting" allowed the company to take unrealized future gains for trading contracts on the income statements, which alludes to a company producing higher profits (Bondarenko, 2022). Assets deemed as troubled would be transferred to special purpose entities (SPEs), which kept the troubled assets off the books.

Using the fraud tree in Figure 1, Enron's dubious accounting procedures would be classified as a combination of asset misappropriation and financial statement fraud based on their

asset transfers and improper gain recognition. Enron misappropriated assets by making transfers into the SPEs, which misstates the amount of assets reported on the balance sheet statement. Regarding the financial statement fraud, Enron improperly recorded unrealized gains and reported them on the income statement, misrepresenting the financial performance of the company during the fiscal year. To the investors, the company would look profitable, hiding the fact that financial performance of the company was on the brink of failure.

At the first sign of trouble, Skilling, Andrew Fastow, the CFO of Enron and the operator of some of the SPEs, and Kenneth Lay all had the financial pressure to commit fraud. The pressure of representing Enron as a successful company in the eyes of investors spurred each individual to commit fraud. Given their positions as high-ranking executives of the company and taking advantage of the trust of everyone within the organization, the three men had the opportunity to commit the fraud. Each fraudster rationalized their actions through the justification that the company will eventually become profitable, and no one will know the fraud was committed. However, this did not occur, and people began to uncover the fraud committed by each of the three men.

After analysts began to take a deeper investigation into the financial statements of Enron, Enron decided to post a \$638 million loss for the third quarter, ultimately inspiring the intervention by the Securities and Exchange Commission (SEC). Enron stock fell from around \$90 per share in the mid-2000 to \$12 per share by the beginning of November 2001, eventually plummeting to \$1 per share (Bondarenko, 2022). On December 2, 2001, Enron filed for Chapter 11 bankruptcy, and Enron employees were subsequently let go from the company with their 401(k)-pension depleted as a result of the pension being tied to company stock.

Skilling, the CEO, was sentenced to more than 24 years in prison on charges of conspiracy and fraud. Lay, the founder, was sentenced to more than 45 years in prison on charges of conspiracy and fraud. Fastow, the CFO, was sentenced to six years in prison on the charges of fraud (Bondarenko, 2022). However, one of the most notable consequences that resulted from the Enron accounting scandal was the downfall of Arthur Andersen, who was the auditor and consultant for Enron. When the SEC began investigating the transactions between the SPEs and Enron, some officials at Arthur Andersen hastily started shredding documents pertaining to the audits of Enron, ultimately committing obstruction of justice. Clients of Arthur Andersen began to distance themselves from the disdained audit firm to ensure investors that their respective financial statements met the highest accounting standards as set forth by the Generally Accepted Accounting Procedures (GAAP). Eventually, employees of Arthur Andersen began to leave voluntarily or were laid off.

Overall, the collapse of Enron has become one of the largest bankruptcy filings in the history of the United States and cost investors close to \$74 billion (Bondarenko, 2022).

WorldCom

WorldCom was founded in 1983 in Hattiesburg, Mississippi, by Bernard Ebbers and three other investors, with Ebbers serving as the CEO of the company. By the late 1990s and early 2000s, WorldCom established itself as one of the largest telecommunications players in the industry and had grown through a series of acquisitions and mergers in the 1990s. The company later relocated to Clinton, Mississippi.

Beginning in 2000, at the start of the dot-com bubble, the Board of Directors of WorldCom authorized loan and loan guarantees to Ebbers to prevent him from selling his

WorldCom shares. However, due to Ebbers's lack of coherent strategy following the Sprint merger collapse, the Board of Directors became impatient with his leadership, thus requesting his resignation. Upon his resignation, Ebbers's loans were consolidated into a single promissory note of \$408.2 million.

Yet, unknown to the Board of Directors, fraudulent accounting methods were being used prevalently to hide the decreased earnings of WorldCom and maintain the company's stock price. The major players in the accounting scandal included Ebbers, CFO Scott Sullivan, Controller David Myers, and Accounting Director Buford Yates. The four players committed the fraud by booking "line costs" and inflating revenues. Booking "line costs" refers to booking operating expenses that should be reported on the income statement as capital expenditures, or "prepaid expenses," on the balance sheet (George, 2021). Capital expenditures are for long-lived, depreciable assets and can be spread out over a period of years whereas operating expenses must be recognized in full when the expenses occur. Essentially, the company looks more profitable since the operating expenses are not recorded on the income statement. The fraudulent accounting practices used bogus accounting entries from "corporate unallocated revenue accounts" to inflate the revenues to appear that there was a higher stream of revenue to shareholders (George, 2021).

An analysis of the fraud tree in Figure 1 shows that WorldCom committed financial statement fraud in the form of fictitious revenues and misstated expenses. The four main players recorded, or directed the recording of, fictitious journal entries to create a revenue stream from "corporate unallocated revenue accounts." On the income statement, these entries would inflate the revenue account. By using capital expenditures for booking operating expenses, the expenses would not be reported on the income statement immediately. This combination created a timing

difference that significantly overstated net income. To investors, WorldCom appeared to be an attractive company for investment.

The demise of WorldCom began when a small group of internal auditors, led by Cynthia Cooper, investigated and revealed \$3.8 billion worth of fraudulent entries on the books. The investigation was triggered by suspicious entries during a routine capital expenditure audit (George, 2021). Once again, Arthur Andersen was the auditor for WorldCom and failed to detect the fraud for the four years the fraud was ensuing, eventually withdrawing its audit opinion of WorldCom for 2001. The SEC intervened and further investigated WorldCom for questionable accounting practices. On July 21, 2002, WorldCom filed for bankruptcy and eventually changed its name to MCI and relocated to Ashburn, Virginia. In 2006, MCI was acquired by Verizon Communications (George, 2021).

Ebbers was charged with conspiracy, fraud, and filing false documents with regulators, and sentenced to prison for 25 years. As part of a plea agreement to testify against Ebbers, Sullivan, the CFO of WorldCom, was sentenced to five years in prison on charges of fraud and conspiracy. Myers, the Controller, and Yates, the Accounting Director, were sentenced to one year and one day in prison on the charges of fraud. Ultimately, WorldCom replaced Enron, which occurred one year prior, as the largest accounting fraud in the history of the United States, costing investors close to \$175 billion (George, 2021).

Using Figure 3, the fraud triangle, each of the four main players had ample opportunity to commit fraud. Each held a high-ranking role within the organization, with full access to the financial statements of the company. At the time, no one would have suspected them of committing financial statement fraud. However, given the pressure to hide declining performance and maintain the company stock, each fraudster rationalized that the success and

future of the company depended on their immediate action. If the declining performance, exacerbated by the dot-com emergence, were to become public, WorldCom would have lost investors, suffering negative consequences for the company. Thus, the rational of avoiding the loss of investors influenced their decision to commit financial statement fraud.

Tyco International

Tyco International's motive of fraud differed in the fraud committed by the former CEO and CFO of the company was fueled primarily by personal greed. Tyco International was founded in 1960 by Arthur J. Rosenberg and served as an investment holding company for two segments: Tyco Semiconductors and The Materials Research Laboratory. By 1992, when Dennis Kozlowski became CEO, the company adopted an aggressive acquisition strategy, leading to the acquisition of over 3,000 companies in a decade (Sorkin, 2002). By midway through the fiscal year 2002, Tyco International became involved in an accounting scandal that eventually cost investors close to \$1.3 billion.

Kozlowski and Mark H. Swartz, former CFO, stole money from the company to fund personal desires, such as an apartment on Park Avenue and jewelry bought from Tiffany's. The result of their theft was close to \$600 million of the company's money. To commit the fraud, the duo stole \$170 million from the company itself and then artificially inflated the value of the stock for the company, eventually reaping more than \$430 million from selling the inflated stock (Sorkin, 2002). In order to inflate the stock, Swartz used financial entries to stabilize the income statement and make it appear as if the company was growing. The fraud remained undetected for several years, likely due to Kozlowski's recommendation of the choice of audit firm, casting doubt on their impartiality. The SEC later intervened after an analyst reported questionable

accounting practices. Along with the theft, Kozlowski had an annual salary of \$5 million and had accumulated \$330 million in profits from exercising stock options and stock grants (Sorkin, 2002). Thus, their theft and inflation of the stock is a direct result of personal greed rather than Enron and WorldCom's accounting fraud meant to hide huge losses by the company.

As a result of the scandal, Kozlowski and Swartz were sentenced to 8 to 25 years in prison on the charges of grand larceny, falsifying business records, securities fraud, and conspiracy. Tyco International separately filed a lawsuit against Kozlowski in an attempt to retrieve the income and benefits he amassed since 1997.

Referring back to the fraud tree in Figure 1, the method employed by Kozlowski and Swartz was corruption, and more specifically, a conflict of interest. Kozlowski and Swartz inflated the stock solely for the purpose of selling it for further monetary rewards. Both men had a conflict of interest because they held the stock while having the ability to inflate it for personal gain. An executive should put the needs of the company before their own, which neither Kozlowski nor Swartz chose to do. In fact, using the fraud triangle in Figure 3, both men were motivated to continue living a lavish lifestyle, ultimately pressuring them to commit fraud. To rationalize their fraud, the men seemed to believe that no one involved with the company would ever find out about their theft, and accordingly, there would be no negative repercussions. Tyco International, just as Enron and WorldCom, is a representation that fraudulent individuals are often those that no one expects to commit fraud, mainly due to their position of power in the company or community.

Sarbanes-Oxley Act of 2002

After uncovering some of the most impactful accounting scandals in the early 2000s, the federal government decided to intervene. Essentially, SOX is a “federal act passed in 2002 with bipartisan congressional support to improve auditing and public disclosure in response to several accounting scandals in the early-2000s” (Cornell Law School, 2022). Furthermore, SOX most notably created the Public Company Accounting and Oversight Board (PCAOB) as well as strengthened disclosure and auditing requirements for publicly traded companies. Within the federal act, there are key provisions of SOX that have a major influence on the accounting practices for all public companies. The following are the key provisions of the SOX:

- SOX Section 302 – Corporate Responsibility for Financial Reports: states the CEO and CFO are responsible for the accuracy of all financial reports to the SEC.
- SOX Section 404 – Management Assessment of Internal Controls, establishes management responsibility for an adequate internal control structure and requires reporting of internal control shortcomings.
- SOX Section 806 – Protection for Employees of Publicly Traded Companies Who Provide Evidence of Fraud, encourages the reporting of financial fraud and provides protection for whistleblowers.
- SOX Section 906 – Corporate Responsibility for Financial Reports, details the punishment for distributing misleading or fraudulent financial reports.

Each of these four key provisions are important in understanding SOX and creating a detailed structure for each public company to follow. The objective is to increase the confidence for investors. Since the passage of SOX, there is added pressure for public companies to conform to the regulations to avoid extensive punishment from the PCAOB. Although the passage of the

SOX has extensive benefits of strengthening the confidence in the stock market for investors, it is far from perfect. Four main problems have arisen since passage of SOX.

One, SOX does not require audit firm rotation. Public companies want some control over the choice of audit firms and are resistant to mandatory rotation. Two, there is an unwillingness of audit firms to perform higher quality audits if it means losing a client as a result. Three, SOX places a larger cost burden on smaller public companies than larger ones, thus dissuading smaller firms from going public. Four, audit procedures to comply with SOX's internal control standards have not adapted to the technological advances, such as data analytics and artificial intelligence. Each of the four problems of SOX will be addressed further in the next section.

Discussion of SOX Problems and Proposals for Solutions

Resistance to Audit Firm Rotation

The first problem identified above is the resistance by public companies to comply with mandatory audit firm rotation. Audit firm rotation requires that public companies switch audit firms after a specified time period in order to increase audit independence between the audit firm and the client. Most public companies are resistant to audit firm rotation because public companies want the ability to choose their auditors. A company's choice in selecting an auditor can come down to money, expertise, or a previous relationship. More often than not, company executives form a relationship with their auditors, which defeats audit independence. The goal of mandatory audit firm rotation is to mitigate ongoing relationships and increase independence.

In the case of Enron, a Chicago Tribune article published in 2002 highlighted the relationship between the auditors of Arthur Andersen and Enron executives around the time of fraud. Many of the Arthur Andersen auditors and Enron executives would golf, ski, and attend Astros baseball games together. A former senior audit manager at Andersen once equated the

relationship between the auditors of Arthur Andersen and Enron as a “really cool, macho frat party” (Chicago Tribune, 2002). In lieu of providing the important role as an auditor through independent verification of financial reports, the auditors at Arthur Andersen failed at their duty to exert professional skepticism and independence and signed off on questionable reports. While egregious, the relationship between Arthur Andersen and Enron is not the only instance of the problem between audit firms and public companies, a fact which led many to call for mandatory rotation.

The proposed solution to public companies’ resistance to change auditors is quite simple in theory: institute a required audit firm rotation on a five-year basis rather than allowing public companies total control. By instituting audit firm rotation, audit independence between the public company and the audit firm would be increased, thus allowing the audit firm to perform independent verification of financial reports without jeopardizing the integrity of the audit. Additionally, by switching audit firms on a five-year basis, the likelihood of complacency in overlooking flaws would be limited, increasing the chance of fraud being detected in a public company. The proposed solution of having a five-year audit firm rotation would allow for a public company to switch back to the original auditor after the five-year period. If an audit firm fails to meet the audit independence regulations set forth by the PCAOB, then the audit firm would face a penalty and could no longer audit the public company for some additional, specified time period. A separate division of the PCAOB should be set up to randomly audit the audit opinions of audit firms on a bi-annual basis to ensure audit firm rotation and associated auditor independence is being followed. The separate division of the PCAOB would require resources, which will be addressed in later sections more extensively.

Overall, the establishment of audit firm rotation on a five-year basis would limit the likelihood of complacency within an audit as well as limit the risk of collusion between the audit firm and the public company, which was the case between Arthur Andersen and Enron.

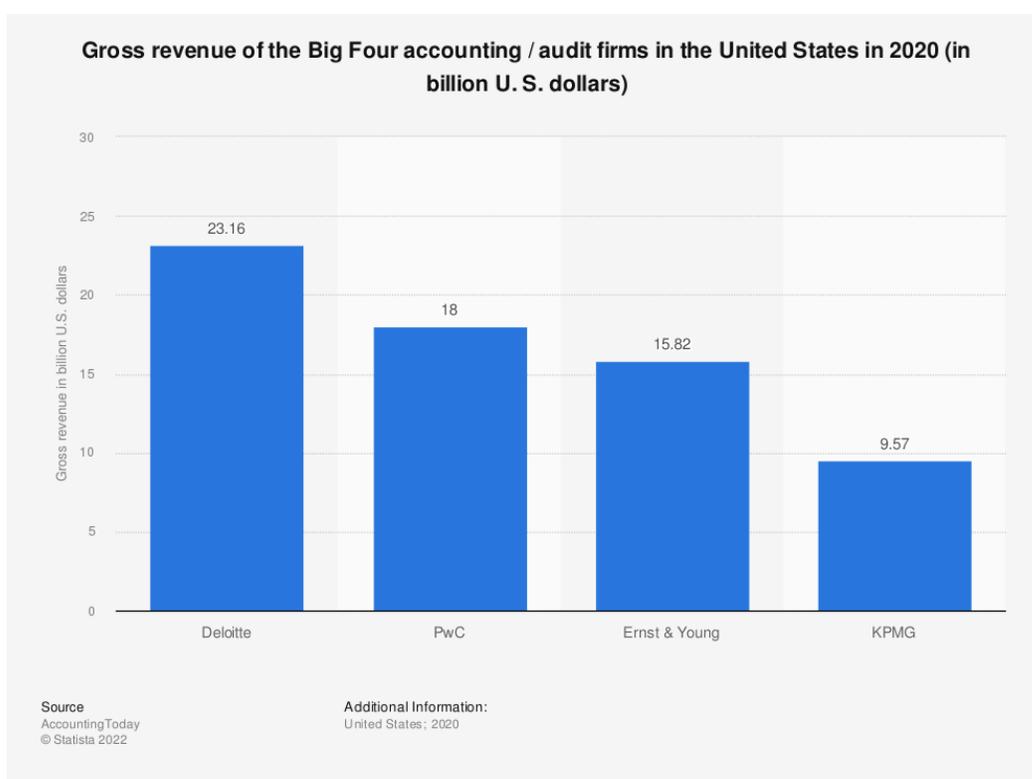
Audit Firms Failure to Perform High-Quality Audits

One of the problems of auditing procedures in the United States, is the fact that audit firms have prioritized business retention of clients instead of performing high-quality audits. This fundamental problem was not addressed by SOX and continues to be a major shortcoming in the audit industry. The relationship between Arthur Andersen and Enron lays plain the problem of prioritizing business retention. Unfortunately, this only become apparent after the fraud was discovered and both organizations imploded. Arthur Andersen's failure to detect fraud within Enron was the "culmination of a decade of sliding standards and audit debacles at the firm, which had come to reward salesmanship over technical skill and to pursue higher profits even if it meant compromising a legacy of defiant independence" (Chicago Tribune, 2002). Salesmanship included forming a relationship of incentivizing rewards such as tickets to baseball games and golf trips. Arthur Andersen also seemed more concerned with collecting \$18 million in accounting fees within the first two years of being Enron's auditor during the company's rapid growth.

To further examine the magnitude of this problem in the Big Four audit firms, data from the PCAOB shows that 20% of audits examined by Deloitte fail, along with 23.6% of PwC, 27.3% at EY, and 50% at KPMG (*High Risk*, 2021). This is more alarming considering that 97% of public companies are audited by the Big Four companies. By looking at Figure 4, which is a representation of the gross revenue of the Big Four audit firms in 2020, it is easy to speculate

that maintaining strong gross revenues is more important than performing high-quality audits. Furthermore, by applying the 20% of audits examined by Deloitte that failed to their gross revenue in 2020, essentially \$4.632 billion of revenue collected came from audits that subsequently failed (assuming the gross revenue strictly came from audit fees alone).

Figure 4 – Gross Revenue from the Big Four in 2020



Public accounting firms are likely more willing to overlook flaws in internal control weaknesses to keep a client. Data suggests that auditors saw a 2.2% drop in client growth per flaw highlighted by the audit and a 6.1% lower fee growth over the next year (*High Risk*, 2021). Financial fraud expert John Coffee states, “Although auditors serve investors, they are hired by

management” (*High Risk*, 2021). Essentially, the auditors best serve the client they represent in lieu of the investors that the audit is meant to protect, despite the passage of SOX.

To increase the performance of higher-quality audits, there are a few possible solutions that could be implemented. To begin, the PCAOB can increase the punishment and fines to reflect the level of involvement in each fraud case. As a result of the Enron case, Arthur Andersen was charged only with obstruction of justice and lost clients due to the clients wanting to distance themselves from the disgraced audit firm. However, in the scenario that Arthur Andersen was not charged with obstruction of justice or lost clients, the PCAOB should fine the audit firm based on their level of involvement in the fraud, which was high in the case of Enron. The punishment should be based on the level of accounting fees collected by the audit firm from the public company. As of right now, the fines and punishment for audit firms not detecting fraud are dismal. For example, Deloitte was fined \$536,000 for its role in the 1MDB scandal, which consisted of the Malaysian Prime Minister channeling around \$700 million into his personal bank account (*High Risk*, 2021). Compared to the \$23.16 billion in gross revenue in 2020, Deloitte’s fine does not truly persuade the company to perform higher quality audits.

Another possible solution to persuade audit firms to prioritize higher quality audits over client satisfaction is the implementation of the audit rotation as stated in the former section. The audit rotation would allow the audit firm to be concerned with the audit rather than becoming fearful of losing the client as a result of finding financial misstatements. Lastly, the PCAOB could create a Public Company Audit Fund (PCAF), which would serve similarly as the fund in place with banks from the FDIC. The solution would allow public companies to put funds into the general PCAF fund for the SOX audit, allowing audit firms to select the contract of the public companies within the fund. In order for the audit firm to select a contract, the audit firm

must possess the resources and capacity to undertake the audit. Furthermore, the PCAF allows for the audit firm to not worry about losing fee growth for finding financial misstatements within the SOX audit. Apropos to the public company, the public company would put funds based on the level of audit commitment that must be taken by the audit firm. For instance, Coca-Cola would fund a larger amount of money into the PCAF in comparison to a tech start-up that went public with only 500 public investors. The PCAF could also provide funding necessary to set up a separate division within the PCAOB briefly discussed before in reference to mandatory audit firm rotation. Each of the proposed solutions would result in higher quality audits for public companies by removing the incentive of client retention.

Smaller Firms vs. Larger Firms

SOX compliance burdens smaller companies more than larger companies based on upfront and ongoing costs to maintain compliance. As can be expected, smaller firms have relatively fewer internal controls than larger firms, causing more risk for fraud, due to relying on management for controls. However, the increased compliance costs for implementing SOX have been more dampening for smaller companies than larger companies, causing the number of public companies in the stock market to drop from 8,090 in 1996 to 4,266 by 2019 (Constable, 2021). Essentially the implementation of SOX compliance caused many smaller public companies to “go dark” instead of going public. “Going dark” means decreasing nominal shareholders to be under the 300-shareholder threshold. By more companies going private or “going dark,” SOX is failing in its original aim of providing increased investor confidence for public companies. However, for companies that decide to stay private longer, there is less public accountability than with public companies. For example, in the recent fraud involving medical

testing company Theranos, the company remained private to avoid publicizing internal data (Allyn, 2022). This allowed the fraud to remain undetected for numerous years. Thus, modifications are needed to be sure SOX better addresses the issues related to potential fraud in small companies.

One possible solution to limiting the cost burden on smaller companies is to implement a SOX threshold with different levels of SOX compliance based on the number of shareholders of the public company. As of right now, once a company reaches 300 shareholders, the public company must begin to comply with the SOX regulations. However, the proposed solution would create an additional threshold of between 300 to 1,000 shareholders that would maintain that smaller firms comply with certain SOX compliance but allow more grace on internal control testing, such as testing internal controls on a biannual basis instead of an annual basis. Another internal control test could be verification that the public company met with a business consultant and reviewed an internal control framework that can be implemented once the public company can employ more employees. Once the number of shareholders reaches above 1,000, then the public company would need to comply with annual SOX compliance.

The implementation of the threshold would lower the cost of SOX compliance for smaller companies while establishing the same confidence for investors, which was the original aim of the implementation of the SOX.

Internal Control Testing Need for Technological Advances

Internal control testing pertinent to SOX compliance has not adapted to the new technological advances available, such as data analytics and artificial intelligence. As of right now, most audit firms outside of the Big Four and close competitors have not implemented data

analytics or artificial intelligence to perform audits, relying on Excel functions to perform an audit instead (Krieger, 2021). However, the implementation of data analytics applied to the auditing function can increase the coverage of the audit, while reducing the time the auditor dedicates to simplistic, monotonous audit tasks. With many different audit procedures and tests needed during an audit of a public company, data analytics can employ computer-assisted audit techniques (CAATs), which are automated scripts used to validate data, test controls, and enable substantive testing of transaction details or any supportive evidence during an audit. During the test plan, the audit can use different analytics for testing the data such as descriptive, diagnostic, predictive, and prescriptive analytics (Richardson, 2021).

To explain the advantages of using CAATs during an audit, a scenario of the audit of purchase transactions will be provided. The background of the audit is for a public company that sells model toy sets to customers in the United States. An auditor receives a set of data from the client and validates the accuracy of the data before entering it into the audit software. To perform diagnostic analytics, a form of analysis that detects correlations or patterns of interest and compares them to a benchmark, the auditor begins to perform tests to detect fraud based on the principle of Benford's Law in IDEA, a generalized audit software. The auditor performs the test based on the principle of Benford's Law by assigning an expected Benford's value to the purchase transactions and then averaging the value by an employee to identify employees with unusually large purchases. Benford's Law, a CAAT, "maintains that the numeral 1 will be the leading digit in a genuine data set of numbers 30.1% of the time," with the leading digit decreasing in frequency the higher the number goes up from 1 to 9 (Collins, 2017). If the test identifies employees with large purchase values, the auditor will investigate the transaction further to indicate fraud. Another scenario of a CAAT in IDEA is shown in Figure 4, which

represents the use of CAAT for auditing a sample out of a population size of 388 using a confidence level of 90%.

Figure 5 – Sample Size Determination Results Using CAAT in IDEA

Attribute Sample Size Determination Results (One-Sided)

Population : 388
 Sample Size : 58
 Critical Number of Deviations in Sample : 1

Deviations	% Deviations	Achieved Confidence (Beta Risk Control)
0	0.00	98.20
1	1.72	90.03
2	3.45	72.65
3	5.17	49.55
4	6.90	28.03
5	8.62	13.09
6	10.34	5.05
7	12.07	1.62

Conclusion: If no more than 1 deviations are observed in a sample of size 58, you can be at least 90.00% confident that the population deviation rate is not more than 6.00%.

Figure 6 – Sample Evaluation Results Using CAAT in IDEA

Attribute Sample Evaluation Results

Population : 388
 Sample Size : 58
 Number of Deviations in Sample : 3

Sample Deviation Rate : 5.17% (3 / 58)

1-Sided Upper Limit	2-Sided Lower Limit	2-Sided Upper Limit
10.57	1.80	12.11

Conclusion: For an observed number of 3 deviations in a sample of size 58, you can be 90.00% confident that the population deviation rate is no more than 10.57%. Alternatively, you can be 90.00% confident that the population deviation rate is between 1.80% and 12.11%.

Figure 6 represents the use of CAAT in IDEA to indicate the number of deviations in a sample population using a tolerable deviation of 6%. By using CAAT in generalized accounting software, such as IDEA, the auditor reduces the time spent compiling the same information without the use of data analytics; furthermore, data analytics allows for greater coverage for data and ensures that valuable resources are being used efficiently given the time-constraint most audits adhere to. Data analytics also allows for the auditor to visually identify deviations in a sample size to gauge a more concrete conclusion, which increases the effectiveness of internal control testing for SOX compliance.

Artificial intelligence is another key aspect in advancing the audit of internal controls. Of particular interest, machine learning uses models to perform data analysis to understand patterns and make predictions, using a combination of mathematical equations and probability theory. As

of right now, the implementation of machine learning for audits is in the early stages and showing remarkable success. Deloitte has a machine learning tool called Argus that reads documents such as leases and contracts to identify key contract terms, trends, or outliers. Auditors can then interpret the key features of the document. PricewaterhouseCoopers, otherwise known as PwC, has a machine learning technology called Halo that analyzes journal entries that can identify problematic or questionable entries, allowing the auditors to focus their attention on the problematic or questionable entries rather than every entry made during the year. Essentially, machine learning in these instances has increased the speed and quality of the audit (Dickey, 2019). Other potential uses of artificial intelligence include machine learning technology aimed at exploring the behavioral analysis of individuals during fraud interviews through non-verbal detection and voice analysis, which is an important aspect of fraud as explained before.

The use of data analytics and artificial intelligence can greatly increase the reliability of audit tests if implemented correctly. Additionally, an indirect consequence of the implementation of data analytics and artificial intelligence is the retention of public accounting employees. Turnover has become a major area of concern since the implementation of SOX. Many auditors tend to work long hours, particularly during the busy season. This causes burnout and leads to auditors seeking roles in the private accounting sector. The result is a shortage of public accountants for audit firms. Advanced technology that reduces the repetitive, tedious tasks required in an audit, and the resulting reduction of labor hours, may help reduce the turnover and personnel shortage partially caused by SOX compliance. Thus, the implementation of new technological advances is beneficial for a SOX compliance audit by increasing both the reliability of the audit and the retention of public accountants.

Case Scenario of Audit Modifications

To exemplify the limitation of fraud instances in public companies, given the audit procedure modifications, this section provides an analysis of Enron, set in the perspective of 2000 but using the Enron Annual Report in 2000. To begin the case analysis, it is important to understand that Enron issued a substantial amount of stock during 2000, including 1.37 million shares of second preferred stock authorized alone (Enron, 2000); therefore, the proposed audit threshold modification for SOX compliance based on number of shareholders would not apply in this case analysis. However, analyzing the number of shares Enron has issued is important to understand the level of SOX compliance that Enron should adhere to.

In regard to the audit firm rotation proposal, Enron should have switched their audit firm on a five-year basis, which would have limited the relationship formed between the audit team and Enron executives. A major downfall of Arthur Andersen was their relationship change from being one of professional, independent auditors to one of a personal, internal group within Enron. Mandatory audit firm rotation would have disrupted and prevented this development, thus keeping the required professional and independent relationship between the auditors and Enron. From this professional relationship, the new auditors would likely have found more errors reported on the financial statements, indicating potential fraud within the organization. Rather than allowing the fraud to continue for years, the new audit firm would have detected it much faster, ultimately maintaining the confidence from investors in the stock market and mitigating some of the financial losses.

Similarly, the PCAF that Enron would have funded on an annual basis would have allowed the audit firm to provide high-quality audits without the worry of losing revenue through each flaw detected, as discussed before. In the case of Arthur Anderson, the partners of the firm

were more concerned with the millions of dollars in audit fee revenue than providing exceptional audit fieldwork. The PCAF would also have created a separate division within the PCAOB to go towards auditing the work of the auditors themselves. By having a third-party firm audit the fieldwork done by a public auditor, the level of integrity is heightened, particularly given that the third-party has no financial incentive to dismiss flaws detected in the audit work. The third-party audit would also persuade the public auditors to provide higher-quality work in hopes of avoiding fees and penalties, potentially costing their reputation in the process.

Lastly, in 2022, audit testing of Enron's financial internal controls would have been conducted through artificial intelligence and data analytics. For one, data analytics using CAATs would have indicated potential deficiencies in the testing that would have provoked further investigation. Artificial intelligence could also have indicated fraud faster in the case of Enron. Using Deloitte's Argus as an example, the AI's review of trading contracts would have produced key contractual terms for the auditors to consider. One of these contractual terms would have been the date for which the contract will be performed. Enron used unrealized gains on trading contracts and reported them on the income statement; therefore, the artificial intelligence would have produced a date in the contract that the auditor would subsequently match to journal entries and verify the entry was accurately recorded. Halo, produced by PwC, is a machine learning tool that would be helpful in examining journal entries of Enron, especially if paired with Argus. These technology systems would have most likely alerted auditors very quickly to the problematic and unsubstantiated journal entries.

Future machine learning could also indicate nonverbal behaviors and analyze voice variations during fraud interviews. During a fraud interview with Jeffrey Skilling, in particular, the machine learning could register nonverbal behaviors to various fraud questions that would

have indicated lies, prompting further investigation. Fraud interviews are essential in detecting fraud in an organization and having machine learning aid in the detection would elevate the likelihood fraud is detected. As can be seen by the characteristics of a fraudulent individual, fraud behavior is difficult to detect with the human-eye alone, making technology more important than ever in the audit field.

Challenges to Recommended Solutions

Although these proposed audit solutions would help limit the likelihood that fraud is committed within a company, specifically a public company, some barriers will or already have prevented the solutions from being utilized. To start, a lobbyist from both Big Four companies and large public companies would try and deny the mandate of audit firm rotation and a PCAF from being created. Specifically, for the Big Four companies, the firms' executives do not want to lose revenue from audit services to competitors. While an audit firm may gain an audit from a competitor as a result of rotation, the revenue may not be comparable especially if the lost client is larger than the gained client. This may likely be the case for clients like Apple or Amazon, two clients that may be difficult to replace. Additionally, a PCAF would allow any qualifying audit firm to select the contract for a public company, jeopardizing the revenue stream of a Big Four accounting firm to an audit firm outside the top four. Apropos to public company lobbyists, the larger companies would lobby against the proposed changing of the auditors on a five-year basis because they want to maintain the power to choose their auditors, especially if the company is fearful of reputational effects when fraud committed by the company executives becomes public.

Besides lobbyists from the Big Four and large corporations, SOX compliance necessitates appropriate action to address turnover and unfilled accounting and auditing positions. Currently,

staff accountants experience burnout from extreme busy season demands, and consequently stay in a public firm for only a couple of years. The quality of the audit is decreased due to the learning curve necessary to complete an audit. Additionally, more college students majoring in accounting find work outside of the public accounting sector, leaving a shortage of public accountants from the beginning. Paired with the short tenure of staff accountants, a major shortage of public accountants will develop unless drastic changes are enacted.

Conclusion

In conclusion, there is an immediate need for modifications of SOX requirements and related audit procedures. As seen throughout the thesis, changes in the audit procedures can be a great asset in limiting the instances of fraud from occurring. Although SOX directly applies to public companies, fraud exists within private entities, governmental entities, and nonprofits as well. In order to reduce the impact on all stakeholders with a direct financial interest, these modifications must apply to entities of all organizational forms and all sizes. Previously, this paper examined the Enron fraud through the lens of these modifications, but the analysis completed there holds for others identified here as well. The case of Rita Crundwell and the City of Dixon is a prime example of a governmental entity that could have avoided fraud through the implementation of modified audit procedures. Specifically, by changing auditors every five years, the rotation of auditors would have recognized fabricated invoices that were missed by the auditors of the City of Dixon for 22 years. Additionally, data analytics and procedures based on the principles of Benford's Law would have determined the patterns in falsified invoice numbers quicker, influencing further investigation into the invoices. This highlights the fact that the changes proposed in this paper are not solely applicable to the Enrons and WorldComs of several

decades ago. These changes have the potential to produce widespread benefits for the investing public. Finally, the inevitable challenges to the strengthening of audit procedures must be addressed for the solutions to be successful.. If not, fraud cases will continue to heap financial burdens on many innocent victims.

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