



K2's Case Studies In Fraud And Technology Controls

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Learning Objectives



Upon completing this session, you should be able to:

- Define information technology general controls and information technology application controls and distinguish between the two
- List examples of key information technology controls
- Recognize control failures and weaknesses that can lead to fraud
- List recommendations for improving internal controls in an organization



FRAUD – THE CURRENT STATE OF AFFAIRS



Fraud Is Rampant!

- The sad truth – and virtually every study on the topic bears this out – is that fraud is rampant today in businesses of all sizes
- Most estimates peg fraud losses at 5% to 8% of total organizational revenues
- Be aware that distinct differences exist in the numbers and types of frauds based on the size of the victim
- Of course, internal controls are supposed to be working to prevent/reduce fraud, but with losses that high, are internal controls as effective as they should be?

Primary Types Of Control Activities



Preventive controls

Activities in which we engage attempting to prevent undesirable actions or outcomes

Detective controls

Measures we put in place to let us know on a timely basis that an intended result is not being achieved

Deterrent controls

Actions that are occurring with the intended purpose of discouraging non-desired behavior

Compensating controls

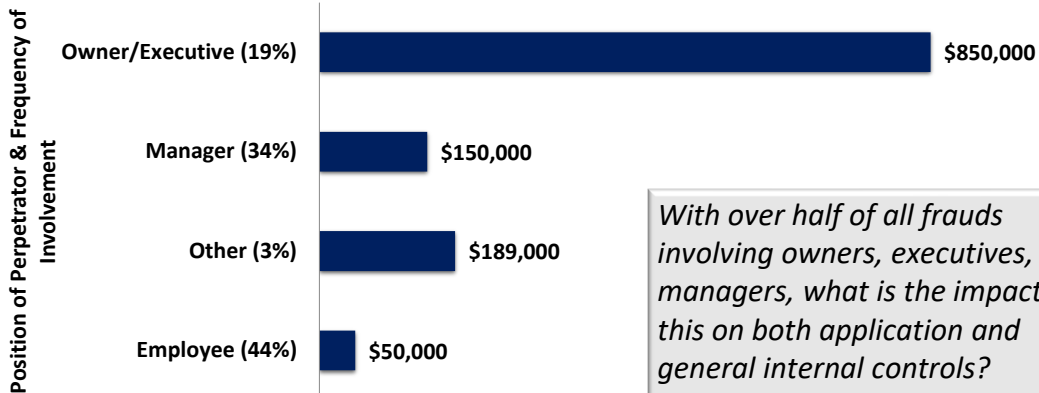
Undertakings for the express purpose of accounting for a known internal control weakness

Findings From ACFE



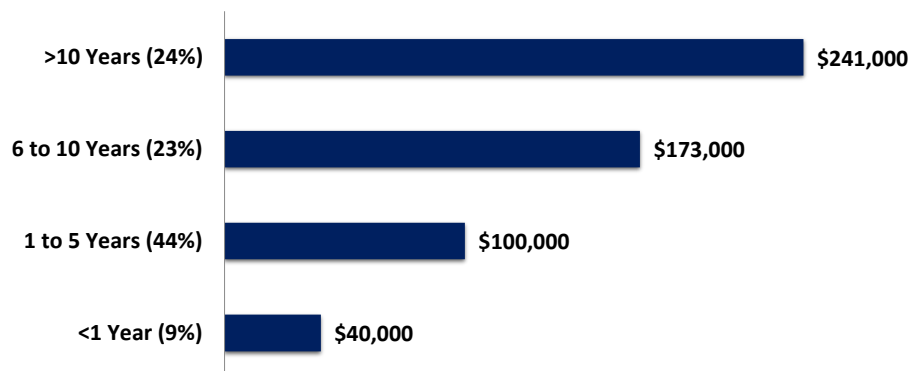
- The following numbers are from the **Report to the Nations on Occupational Fraud and Abuse**
- Fraud consumes 5% of all business revenues
- Annual occupational fraud losses approximately \$4 trillion worldwide and \$929 billion in the United States
- On a per-employee basis, fraud costs on average \$7,369 per full time worker, per year in the U.S. and \$5,138 per full time worker, per year in Canada

Perpetrator Position

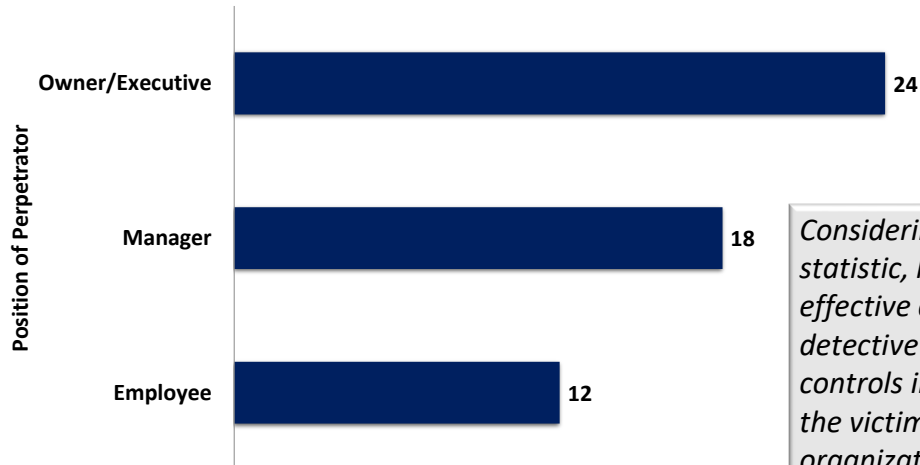


With over half of all frauds involving owners, executives, and managers, what is the impact of this on both application and general internal controls?

Effect Of Perpetrator's Tenure

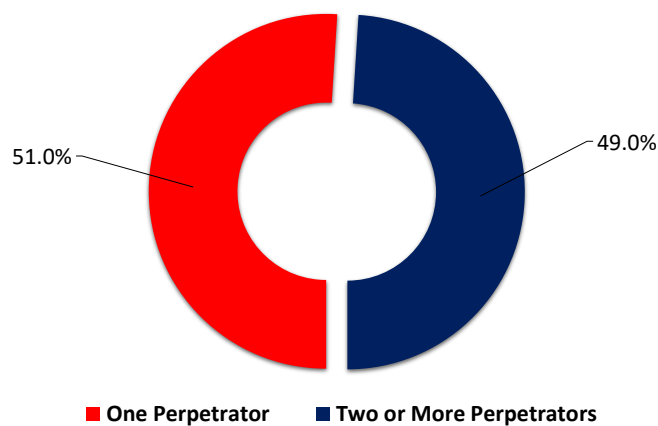


Months To Detect Fraud, By Position

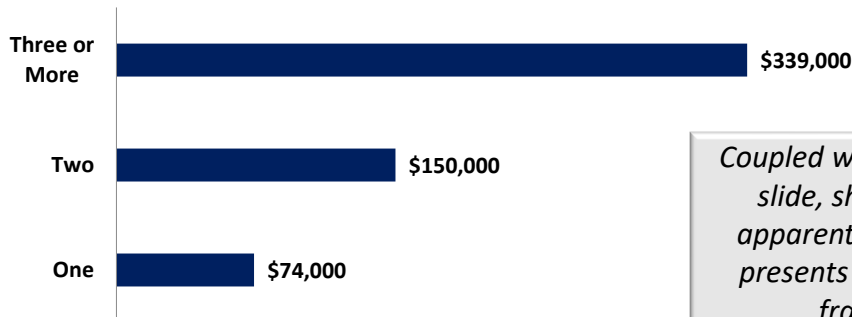


Considering this statistic, how effective are the detective internal controls in many of the victim organizations?

Frauds Involving Collusion

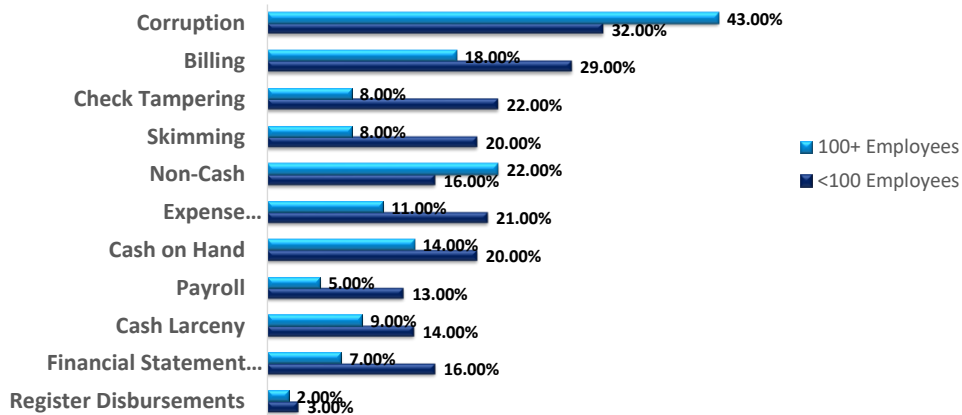


Impact Of Collusion On Losses

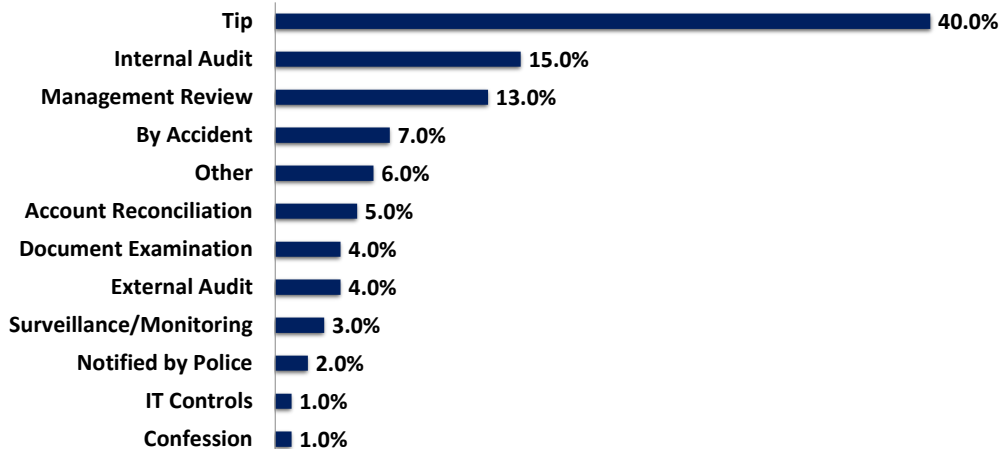


Coupled with the previous slide, shouldn't it be apparent that collusion presents a tremendous fraud risk?

Small Businesses Fraud Risks



How Frauds Are Detected



There Is Some Good News...



- So, what can we conclude from the conversation so far?
- First, businesses of all sizes have recognized the problem, and see technology as a potential solution
- Second, recognize no single method or technology will be effective by itself...as always, a good system of internal controls is a balanced system of internal controls
- Third, effective internal control structures will consist of people utilizing technology in tandem with traditional measures and controls to stem fraud losses and achieve stated organizational objectives



CASE STUDIES IN FRAUD

Mulder Steals Over \$1.5 Million



- On May 15, 2017, Elizabeth “Lizzy” Mulder plead guilty to stealing over \$1.5 million over seven years
- Mulder, facing up to 23 years in prison, was sentenced to only five years after pleading guilty to felony wire fraud and subscribing to a false tax return
 - She was also to pay restitution of \$1.5 million to clients she defrauded



Mulder Steals Over \$1.5 Million



- On May 15, 2017, Elizabeth “Lizzy” Mulder plead guilty to stealing over

The kicker is that Mulder stole from friends and clients!

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Mulder Steals Over \$1.5 Million



- Mulder passed herself off as an accountant – although she had no formal training – and solicited friends and acquaintances as clients
- Once she had gained the trust of her clients, she began to divert tax payments from clients into her own bank account
- To do this, she had clients make checks payable to “Income Tax Payments”...of course, her bank account was also in the name of “Income Tax Payments”
- Once she had her clients’ money, she used it for things such as cosmetic surgery, vacations, jewelry, horse rentals, and even gifts for her clients

The Elizabeth Mulder Fraud



Mulder Steals Over \$1.5 Million



Among specific crimes Mulder was charged with

- Diverting 77 checks allegedly for tax payment from a hair salon run by two friends
- Drafting 44 checks from a travel agency to "Income Tax Payments"
- Stealing \$202,000 from a Pilates studio, including taking out loans in the name of the business
- Pocketing \$200,000 from a San Clemente wine distributor
- Thefts from a copy and print company that ended up closing after 22 years of business because of the losses and tax penalties resulting from Mulder's actions

Mulder Steals Over \$1.5 Million



- In one of the more bizarre twists in this case, Mulder would sometimes call clients, pretending to be a vendor or a tax agency
- These calls were often made to let clients know that everything was OK and that their debts had been settled, so there was no need to worry about matters
 - In some cases, the calls were made to pressure clients into making payments, payments that ended up with Mulder, of course
- However, Mulder was the person making the call and she used a voice altering app on her phone to disguise her voice so that clients would not know it was her
- Mulder's case was featured on TV's "American Greed" series



***WHAT COULD HAVE, SHOULD HAVE
MULDER'S CLIENTS DONE TO
PREVENT/DETECT THIS?***

The Rodolfo Olivas Case



- In 2018, Rodolfo Olivas was arrested and accused of stealing \$1.3 million from his West Melbourne, Florida employer
- The 10-month investigation revealed that Olivas allegedly stole from his employer – Hill, Inc. – through fraudulent credit card transactions and by writing company checks for personal expenditures
- Olivas allegedly racked up \$1.025 million in fraudulent charges on an unauthorized American Express account and wrote approximately \$291,000 in fraudulent checks
- The transactions in question dated back to 2010, although Olivas began working for his employer in 2001

The Rodolfo Olivas Case



- The fraud was discovered while Olivas was on vacation and another team member was performing Olivas' duties
- According to police reports, Olivas used the money to lead a lavish lifestyle, including
 - Paying for cruises
 - Vacationing at Disney properties
 - Buying season tickets to Tampa Bay Buccaneers football games
- Detectives also reported that Olivas had a history of substance abuse issues that had spiraled out of control

The Rodolfo Olivas Case



- Olivas was in-charge of purchasing and payables
 - In the words of the detective, “he was the sole person over all that stuff”
 - Further, “he was able to input information into the work computer under false entries that showed one thing, but it was actually checks that were written to him”
 - Stated differently, no segregation of duties, no oversight, no data analysis, etc. – common internal control weaknesses in small businesses
 - Company trusted him as a “family member”
- Police said that Olivas did not make any significant purchases, but rather, because of his addiction he “spiraled out of control”
- Let’s view a portion of the press conference...

West Melbourne Police Department Press Conference





WHAT COULD HAVE, SHOULD HAVE OLIVAS' EMPLOYER DONE TO PREVENT/DETECT THIS?



CYNTHIA MILLS AND MATTHEWS INTERNATIONAL

Cynthia Mills And Matthews International



- Matthews International is a publicly-held company that, among other things, serves the funeral home industry with memorialization products and services
- The company generated \$365 million in revenue in Q1 2020, has approximately 11,000 employees, and is based in Pittsburgh
- Cynthia Mills worked for Matthews for 34 years...in 2016, Mills was charged with stealing \$13 million from Matthews in a fraud scheme that lasted from 1999 to 2015
- Mills attorney pointed to a gambling addiction as the fraud driver

Cynthia Mills And Matthews International



- Mills' position at Matthews was Treasury Specialist, which put her in the position of receiving and stealing inbound payments from customers
 - She would subsequently alter bank statements and vendor invoices to cover her fraud
- Additionally, in 2013 Mills created a company named **Designs by Cindy** and began initiating wire transfers from Matthews to the shell company
- Mills was charged with mail fraud, wire fraud, tax evasion, and engaging in monetary transactions in criminally-derived property

Cynthia Mills And Matthews International



Among other items Mills purchased were

- Three homes
- An \$800,000 yacht, plus two other boats
- At least 8 cars
- A snowmobile
- Three motorcycles
- Furs and designer handbags
- Jewelry

Cynthia Mills And Matthews International



Cynthia Mills And Matthews International



- Remarkably, in 2014 another Matthews employee pled guilty to embezzling \$415,000
- In this fraud, Peter Kalemon submitted and approved bogus invoices from a West Virginia-based company he controlled
- As dispatcher of delivery, Kalemon negotiated rates and approved invoices with no oversight
- He started his crime in 2010, creating and issuing 126 fake invoices to Matthews that he approved

Cynthia Mills And Matthews International



- He deposited 81 checks into his corporation's account
- Matthews also caused an additional 39 checks to be issued after postal inspectors talked to him about the crime, **including 14 that were issued after he was indicted**
- After his trial, he was sentenced to thirty-three months in prison and ordered to pay \$415,000 in restitution



WHAT ARE THE LESSONS TO BE LEARNED FROM MILLS AND KALEMON FRAUDS AGAINST MATTHEWS INTERNATIONAL?



PREVENTING AND DETECTING FRAUD WITH TECHNOLOGY CONTROLS

So What Are Technology Controls?



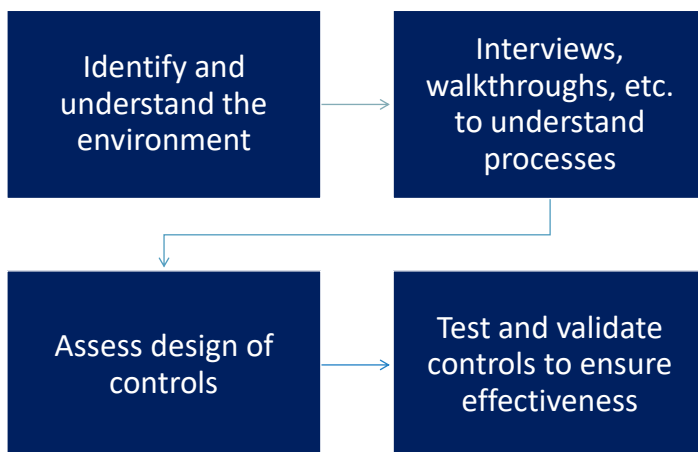
Wikipedia defines **information technology controls** as

*“Specific activities performed by persons or systems designed to ensure that business objectives are met. They are a **subset of an enterprise’s internal control**. IT control objectives relate to the **confidentiality, integrity, and availability of data** and the overall management of the IT function of the business enterprise.”*

Technology Controls, In General



- **Technology controls**, like all forms of internal control, exist to mitigate risk to a **prudently acceptable level**
- A well-designed control environment will include a mixture of **preventive, detective, deterrent, and alternate** controls
- Further, the extent to which controls are implemented should be based on the **risk appetite** and **risk tolerance** of the organization
 - **Risk appetite** is the degree risk management is willing to take
 - **Risk tolerance** is the acceptable level of variation relative to achieving defined organizational objectives



Working
With
Technology
Controls Is
No Different
Than
Working
With Other
Controls



IT controls are divided into
two, more focused
categories

IT General
Controls
(ITGCs)

IT Application
Controls
(ITACs)



EVALUATING INFORMATION TECHNOLOGY GENERAL CONTROLS

What Are IT General Controls?



- Broadly speaking, ITGCs are controls that apply ***across an organization and all its systems, components, data, computers, servers, etc.***
- The purpose of ITGCs is to help maintain the integrity of programs and data and to ensure that applications are properly developed and implemented
- ITGCs can be thought of as the perimeter or first line-of-defense controls, whereas ITACs (discussed later) focus on specific applications and processes

ITGCs Typically Focus On Ten Areas



1. Control environment
2. Change management procedures
3. Source code/document version procedures
4. Logical access policies, standards, and applications
5. Incident management policies and procedures
6. Problem management policies and procedures
7. Technical support policies and procedures
8. Hardware/software configurations, installation, testing, and management
9. Disaster recovery/business continuity
10. Physical security

The Importance Of ITGCs



- ITGCs are the controls that should be in place to **provide reasonable** assurance with respect to the **security, stability, and reliability of an organization's IT infrastructure and related personnel**, particularly as these relate to financial systems
- Poor or ineffective ITGCs or inconsistent application of ITGCs can affect the ability to rely upon ITACs and manual procedures and potentially result in no reliance on either/both
- ITGCs show up in many regulatory audits, including HIPAA assessments, SSAE 16 assessments, PCI reviews/audits, and SOX assessments



ITGCs are often broken into four groups

Access To
Programs
And Data

Program
Changes

Program
Development

Computer
Operations



Some Free Tools To Assist You...

- DumpSec
 - www.somarsoft.com
- Belarc
 - www.belarc.com
- Wireshark
 - www.wireshark.com
- Gibson Research Corporation
 - www.grc.com

Access To Programs And Data



Objectives

Access to programs and data should be restricted to authorized individuals only, based on specific job requirements

Risks

Unauthorized access to programs or data may lead to improper changes, destruction of data, and/or disclosure to unauthorized parties

Sample Controls

- Usernames and passwords for logical access
- Review of audit logs

Examples Of How To Test Access Controls



Sample Control

A formal mechanism exists for providing new users with access to a system, including formally approving the user and establishing specific rights.

Whenever a team member leaves the organization, a formal process exists for immediately disabling access by the user into their account.

The company has a strong password policy in place and all user accounts are in compliance.

Potential Testing/Validation Option

Acquire and read a copy of the policy that applies to this activity, making note of specific requirements. For a sampling of new users, validate that access was approved and that user rights aligned with job description.

Acquire a listing of former team members, including date of termination. Compare this to listing of inactive users to determine if deactivation was timely. Additionally, compare list of all current users in the system to a listing of all current team members.

Acquire a copy of the policy and compare it to mandated password strength for accessing specific applications.

Top 10 ITGC Deficiencies

Information Technology General Controls and Best Practices, Warren Averett, April 5, 2016



1. Terminated employees still active in systems and network
2. Lack of segregation of duties over development and production environments
3. Lack of critical application list, resulting in little or no knowledge of vulnerabilities
4. Lack of vendor management/risk programs
5. Lack of external penetration testing and internal vulnerability scanning
6. Shared and/or generic administrator accounts without monitoring
7. Weak system password parameters
8. Outdated disaster recovery plans and no testing completed (financial applications and full IT network)
9. Lack of data backup testing
10. Lack of portable device policies and security

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40% of these are associated with access risk

Policies – A Key Component Of Effective ITGCs



A great resource for technology control templates remains The SANS Institute's Security Policy Project (<https://k2e.fyi/SANSPolicies>) or <https://www.sans.org/security-resources/policies/>)



EVALUATING INFORMATION TECHNOLOGY APPLICATION CONTROLS

IT Application Controls (ITACs)



The PCI Security Standards Council defines ITACs as those controls that “*pertain to the **scope of individual business processes or application systems and include controls within an application around input, processing, and output.** Application controls also can include data edits, segregation of business functions (e.g., transaction initiation versus authorization), balancing of processing totals, transaction logging, and error reporting.*”

The Nature Of ITACs



- ITACs are applied at the specific **user, application, or business process level**
 - Contrasted to ITGCs which are applied at a much higher level, such as at the network level
- To illustrate, an **ITGC might be applied to allow a user to sign-on to a network and may even control which apps the user can access, but an ITAC would control that user's rights to enter transactions or access reports** in that organization's accounting application

Examples Of ITACs And Their Primary Purposes



Type of Control	Purpose/Use
Authentication Controls	To validate that the person accessing the application or data is authorized to do so
Authorization Controls	To validate that the person executing the transaction is authorized to do so
Completeness Checks	To validate that all authorized transactions have been entered into the system
Forensic Controls	To detect that a potentially inappropriate transaction or event has occurred
Input Controls	To ensure that the data being entered is valid

Common Examples Of Common ITACs In Use Today



- Usernames and passwords to access applications, such as accounting, CRM, and similar line-of-business systems
- Specific rights granted within business applications controlling what a named user can – and cannot – access
- Edits on field to ensure the proper type of data is being entered...for example, no text entries in a date field
- Audit trail reports to show who did what and when they did it
- Preventing price overrides on accounts payable bills or invoices issued to customers



ANALYZING AND EVALUATING TECHNOLOGY CONTROLS

A Process For Evaluating Controls



Step 1 Conduct a high-level risk assessment

Step 2 Identify applications in use

Step 3 Create a catalog of existing ITGCs and ITACs

Step 4 Test

Step 5 Evaluate and Report

Catalog Of Controls



Process Name/Description	Deleting inactive users. Immediately upon a team member's termination, a notification is sent to IT to terminate user access to all Company IT assets and services. IT is to act upon this notification immediately.
Objective	Only authorized users should have access to Company-owned systems and data. No matter the nature of the termination, inactive employees should never be allowed to access Company-owned systems or data.
Risk	Very high. Terminated employees may be emotional and have malicious intentions with respect to Company-owned systems and data.
Control Description	IT decommissions user access immediately for all terminated team members so as to prevent improper – and potentially – malicious access to Company systems and data.
Control Category	Access to programs and data
Type of Control	Preventive
Frequency Performed	On-Demand

Catalog Of Controls



Process Name/Description	Compare user rights in the accounting application to each team member's job description to help ensure proper authorization of transactions in the system.
Objective	User rights, in the accounting application, should be in accordance with their assigned job responsibilities.
Risk	Moderate. If the rights established in the accounting application are not aligned with the team member's job description, unauthorized transactions could materialize and the team member may become privy to sensitive data. Additionally, the risk of fraudulent transactions increases.
Control Description	This test is performed to confirm that each user has the appropriate rights in the accounting application, commensurate with their job responsibilities.
Control Category	Access to programs and data, authorization of transactions
Type of Control	Detective, preventive
Frequency Performed	Annually

Testing Options Available



- The types of test you will conduct will vary based on the control, risk, and data available for testing
- As with traditional “auditing,” testing options include
 - Inquiries
 - Observations
 - Inspections
 - Corroboration
 - Physical performance

Sample Test Of ITAC



A small business utilizes an off-the-shelf accounting application to maintain its books. The system was set up by the Company’s external accountant, who set up usernames and passwords for each user. Additionally, the accountant established each user’s rights within the system to restrict them to only the functions they should be performing based on their job description. However, the owner is concerned that this control may not be effective as team members routinely share passwords. Periodically, the business owner would like to review a list of transactions to determine if team members are potentially logging-in using a different username and recording potentially fraudulent transactions. How could the business owner test this and what type of application control would this be?

Sample Test Of ITGC



A member of the IT staff wants to see if, somehow, end-users are able to install software even though they are not supposed to have Administrative rights. If end-users were able to do this, software licensing policies might be potentially violated. Or, potentially malicious software could be installed compromising the security of all data on the network. How could the IT staffer quickly create an “inventory” of all the software on a team members computer? What type of control would this be?



SUMMARY

To Wrap It Up



- We cannot afford to overlook fraud in our (clients') businesses today...it is a major drain on profit
- Unfortunately, many frauds originate from outdated internal control structures that fail to recognize the importance of technology on both sides of the fraud equation
- Yet, that need not be the case with so many great technology tools available today to help us prevent, detect, and deter fraud
- Take advantage of the tools that are right for you and provide a positive ROI to reclaim those lost profits!



THANKS AND BEST OF LUCK!