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2016

Procurement fraud in the U.S. Department of Defense: implications for contracting processes and internal controls

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Emerald

Procurement fraud in the US Department of Defense
Implications for contracting processes and internal controls

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Abstract

Purpose – This paper aims to explore selected real-world procurement fraud incidents in the US Department of Defense (DoD) and the implications of these incidents to the DoD's contracting processes and internal controls.

Design/methodology/approach – This paper analyzes actual procurement fraud incidents and identifies in which phase of the contract management process the fraud occurred and which internal control component was associated with the fraud scheme.

Findings – The fraud incidents generally occurred during the source selection and the contract administration phases and involved the control activities, monitoring and control environment components of internal control.

Research limitations/implications – The fraud incidents are analyzed using contract management and internal control frameworks adopted by the US Government. Recommendations are developed for improving contracting processes and internal controls as an approach to deterring and detecting procurement fraud and may be applicable to other international public procurement bodies.

Practical implications – Governments are ensuring auditability in public procurement as a means of improving agency governance. The research findings suggest that an emphasis on capable contracting processes and effective internal controls should be adopted for fighting procurement fraud.

Social implications – Ensuring auditability in public procurement has a far-reaching effect in society. The value of capable processes and effective internal controls is gaining much attention in public agencies, as they strive for accountability, integrity and transparency in their governance processes.

Originality/value – By emphasizing capable processes and effective internal controls, governments can apply a strategic approach to detecting and deterring fraud and thus ensure that government monies are spent in the most effective and efficient ways.

Keywords Internal controls, Fraud, Auditability theory, Contract management

Paper type Research paper

1. Introduction

Within the US federal government, the Department of Defense (DoD) is its largest contracting agency. Between fiscal year (FY) 2000 and FY2014, the DoD contract obligations increased from US$190 bn to US$290 bn (Schwartz *et al.*, 2015). In FY2014, the DoD awarded approximately US$285 bn in contracts for supplies and services. This amount is more than any other federal government agency combined. These contracts are not only for major weapon systems but also for mission-critical supplies and services. Given that these contracts are funded by congressionally appropriated funds

and are in support of national defense, they are governed by public procurement statutes and regulatory policies. The purposes of these procurement statutes and policies are to ensure that contracts are awarded in compliance with public policy and that contractual transactions are conducted with integrity, accountability and transparency. However, this is not always the case.

The Government Accountability Office (GAO) has identified DoD contract management as a high risk area due to its challenges in managing the acquisition workforce, executing contracting techniques and approaches, overseeing service acquisitions and performing operational contract support. The GAO established this high risk rating on DoD contract management due to its greater vulnerabilities to fraud, waste, abuse and mismanagement (GAO, 2006; GAO, 2015). Additionally, according to the DoD Inspector General (DoD IG),

> […] fraud within the DoD presents a significant threat to the organization's mission and efforts to ensure warfighter safety. Because of the size and complexity of DoD programs and operations, opportunities to commit fraud are always present (DoD IG, 2014, p. 1).

An example of these fraud incidents includes the US Navy's bribery and conspiracy case involving the chief executive officer for the defense contractor Glenn Defense Marine Asia (GDMA), who was charged with defrauding the government of millions of dollars during the execution of Navy ship husbanding services throughout Southeast Asia. In this incident, several high-ranking Navy officials have pleaded guilty to charges of bribery and conspiracy for releasing confidential information to GDMA in return for various bribes and kickbacks. Many of the Navy officials involved in the fraudulent activity stated that they did not know they were breaking the law (Naso and Stickney, 2015). As of February 2016, the case is still ongoing (Watson, 2016).

As the DoD's level of contracting increases, so does its vulnerability to procurement fraud (Cohen and Eimicke, 2008). According to the DoD IG:

> […] advances in technology, along with the ongoing development of new fraud schemes, reinforces the need for DoD organizations to be continuously alert to fraud, perform periodic fraud risk assessments, and provide fraud awareness training to all employees (DoD IG, 2014, p. 2).

The Association of Certified Fraud Examiners (ACFE) reports that "[…] fraud will be the crime of choice for the 21st century" (Wells *et al.*, 2012, p. 1). Additionally, the ACFE has reported in its 2014 Global Fraud Study that procurement and contracting are some of the areas where fraud occurs (ACFE, 2014). Furthermore, the ACFE reports that, on average, organizations lose approximately 5 per cent of revenues due to fraudulent activities (ACFE, 2014). Button *et al.* (2011, p. 65) research on measuring the cost of fraud found that fraud and error losses in an organization should "be expected to be at least 3 per cent, probably more than 5 per cent and possibly more than 9 per cent".

Specific to the DoD, fraud represents a significant and growing threat to the defense and reconstruction mission (Silva, 2015). Recent procurement fraud incidents are occurring on a widespread basis, as well as involving higher ranked officials (Cavas, 2015a, 2015b). An example of this type of procurement fraud is a major bribery scandal that involves a defense contractor and several high-ranking Navy admirals and that has paralyzed a significant section of the Navy's chain of command (Whitlock, 2016). This growing threat of procurement fraud has resulted in the Federal Bureau of Investigation (FBI) establishing the International Contract Corruption Task Force, which includes participants from the investigative arms of the DoD, Department of State, USA Agency

for International Development and the Army, Navy and Air Force procurement fraud units. The Task Force also includes the Special Inspector General for Iraq Reconstruction and the Special Inspector General for Afghanistan Reconstruction (SIGAR) (Perkins, 2010).

A major DoD emphasis in the fight against procurement fraud is focused on the reconstruction effort in Iraq and Afghanistan. America's investment in Afghanistan has been more than US$110 bn of taxpayer funds just on the reconstruction effort alone (Sopko, 2015). The USA Congress established the SIGAR to watch over American tax dollars being spent on the reconstruction mission in Afghanistan and to identify instances of waste, fraud and abuse. The SIGAR has identified corruption as one of its top four challenges (Sopko, 2015). An example of the type of procurement fraud occurring in the Afghanistan reconstruction effort involved a US contracting officer representative not properly overseeing the installation of culvert denial systems. Culvert denial systems are designed to prevent human entry, while still allowing water to flow through the culvert itself. Insurgents use culverts under the highways to plant improvised explosive devices (IEDs) intended to kill coalition forces and Afghan civilians. In this fraud incident, the contractor submitted fraudulent invoices stating the culvert denial systems had been installed, but, as a result of the systems not being installed, American soldiers were killed and wounded by IEDs placed in these culverts. As can be seen in this example, not only does procurement fraud result in loss of taxpayer dollars, but it can also result in the loss of human lives (Sopko, 2015).

In response to the increased fraud risk in DoD, there has been an emphasis on hiring additional financial auditors and fraud investigators as the first line of defense against DoD procurement fraud. In 2012, the Defense Contract Audit Agency expanded its auditing staff by 615 auditors and plans to add another 1,000 auditors by 2015, to bring its total auditing workforce to more than 5,000 (Chacko, 2012). In addition, the DoD is also increasing its force of procurement fraud agents, such as the US Air Force's Office of Special Investigations (AFOSI). In 2013, the AFOSI established its Office of Procurement Fraud and was staffed with approximately 90 billets that would be dedicated to investigating allegations of procurement fraud within the US Air Force (Essex and Gaffney, 2014; Kidwell, 2013).

But perhaps, the first line of defense against procurement fraud should not be the contract auditors and fraud investigators. We argue that the first line of defense should be the procurement workforce managing the contracting processes and also the organization's internal controls that are ensuring these processes are performed in compliance with statutes and regulations. We also argue that what is missing from DoD's response to procurement fraud risk is a more strategic approach to fraud deterrence and detection that includes emphasizing procurement workforce training, contracting process capability and internal control effectiveness. Auditability theory emphasizes the need for competent personnel, capable processes and effective internal controls to ensure integrity, accountability and transparency in procurement operations.

Given this backdrop, the purpose of this paper is to apply auditability theory to DoD contracting agencies as an approach to fighting procurement fraud. Specifically, our purpose is to explore real-world fraud incidents in the DoD and the implications of these incidents to DoD's contracting processes and internal controls. In applying auditability theory to DoD procurement, we analyze recent procurement fraud incidents by

identifying the related contracting processes and internal controls associated with those incidents. We accomplish this by accessing DoD IG-reported information on recent procurement fraud incidents and by determining which internal control component may have been associated with the fraud scheme and in which phase of the contract management process the fraud occurred. The results from our analysis will be used to develop recommendations for DoD on improving its contracting processes and internal controls. Implementing these recommendations will strength DoD's auditability in procurement operations and thus improve the deterrence and detection of procurement fraud, saving taxpayer dollars and human lives.

Our paper is organized in eight sections, including this Introduction. The second section will discuss the relevant literature on auditability theory and its application to public procurement and procurement fraud. In the third section, we discuss a conceptual framework that serves as the foundation for our research by introducing the auditability triangle and its major components. The fourth section discusses our research methodology used in analyzing the DoD IG-reported fraud incidents using the lens of the auditability triangle components. Section five presents our research findings and section six discusses the implications of our findings. Section seven provides recommendations for deterring and detecting procurement fraud in the DoD, and section eight provides the conclusion.

2. Auditability theory

Today's organizations, both public and private, are facing an increased concern for governance and due diligence in their processes and practices. This environment is resulting in organizations emphasizing auditability in their operations. Auditability is more about "making things auditable" than it is about conducting an audit or an inspection (Power, 1996, p. 289). In making things auditable, organizations establish and actively manage an institutionally acceptable knowledge management system supporting their governance of processes and practices (Power, 1996). The journey toward auditability requires organizational transformation as the organizations establish data collection practices and systems of documentation to make those practices auditable (Power, 2007). Power further states that it is those "[…] processes by which procedures and routines, paradigms of auditability, become institutionalized as the public face of practice" (Power, 1996, p. 312).

The organization's journey toward auditability can be characterized using Weigand *et al.*'s (2013) four-level auditability framework. Each level reflects the organization's degree of self-knowledge and control of processes and practices. Level 1 reflects an operational process focus and is based on events and transactions. Level 2 reflects an accounts focus and is based on system-based auditing. Level 3 reflects an operational policy focus and is based on auditing to check if all of the organization's controls are in place. Finally, Level 4 reflects a management process focus and is based on auditing or checking to see if the manager is in control, that is, whether the management responds when things go wrong. Each level of the framework reflects the organization's capability of self-knowledge and control as well as the type of documentation of evidence of auditability. The journey from Level 1 to Level 2 reflects a move from events and transactions to accounts, as well as "viewing the performance of the auditee in isolation to viewing it as part of a system, a cooperative network of actors, each with his own interests" (Weigand *et al.*, 2013, p. 7). The journey from Level 2 to Level 3 reflects a

move from the organization being retroactive to becoming "more explicit about its norms and more aware of the risk" and thus "efforts get more directed toward prevention" (Weigand *et al.*, 2013, p. 7) and, therefore, is based more on risk-based audits. The shift from Level 3 to Level 4 reflects a reinforced "responsibility of the manager in coping with a dynamic environment and optimizing business value" and also reflects the organizational culture evolving "into a learning and adaptive organization" (Weigand *et al.*, 2013, p. 7). Levels 1 and 2 use self-reporting as the primary source of the audit statement, whereas Levels 3 and 4 use accounting information systems as the primary source of the audit statement.

Auditability theory can be applied to an organization's contract management governance structure. As organizations increase their contracting out for acquiring needed supplies and services, the organization's corporate governance structure and the structure's impact on contract success, especially contracts in support of major projects, have been emerging research topics in the project management literature. Frame (1999) stressed the importance of competent personnel and competent organizations (in terms of organizational processes) for ensuring the success of an organization's projects. Rollins and Lanza (2005) discussed the need for a solid corporate governance structure as well as a renewed emphasis on strong internal controls as a response to the increase in project fraud incidents. Crawford and Helm (2009) also discussed governance in public sector organizations and the role projects play in ensuring accountability, transparency, control, compliance, risk management, consistency in delivery, value for money and stakeholder engagement.

Additionally, the literature reflects research focused on specific aspects of auditability, such as internal controls, contracting processes and personnel competency. The importance of effective internal controls in deterring procurement fraud is well-established in the literature. Spillan and Ziemnowicz's (2011) past research on risk management and accountability identified common threads which included manipulation of public money to achieve private gain and benefits, lack of ethical standards, lack of internal controls and lack of proper oversight by leadership. Their research demonstrated that non-profit organizations need to take actions to encourage accountability and ensure internal controls are properly implemented. Thus, weak internal controls, poor leadership, poor accountability and lack of transparency nurture the opportunity for fraud in organizations. In a survey-based research, Bierstaker *et al.* (2006) found that the use of traditional information assurance protections (such as firewalls and passwords) and internal control management (such as reviews and improvements) are traditionally used to mitigate fraud risk. They also found that the more advanced fraud risk mitigation techniques, such as discovery sampling, data mining and digital analysis software, are not used as often. In their research on employee fraud and the quality of internal control procedures, Rae and Subramaniam (2008) developed models which found a significant and positive relationship between the quality of internal control procedures and the corporate ethical environment, the extent of risk management training of staff and the internal audit activity level.

Law's (2011) research using factor analysis and logistic regression to analyze survey responses found that internal audit effectiveness are positively associated with a lack of fraud within organizations. In their research on the effectiveness of fraud detection instruments in not-for-profit organizations, Kummer *et al.* (2015) found that fraud control policies were highly effective instruments in detecting fraud. Using a real-world

fraud case, Lokanan (2014) analyzed the Canadian Livent fraud case to discuss how senior managers perpetuated the fraudulent activity. He found that weak to non-existent internal controls were the key elements that led to the fraud incident. Nestor's (2004) research focused on how corporate governance impacts fraudulent activity by analyzing the use of internal controls in risk management. Rendon (2012) identified differences in perceptions of internal control effectiveness between credit card purchasing agents and approving officials in the USA DoD government purchase card program.

Specific to procurement fraud, the literature reflects research on public contracting, especially in the areas of deterring fraud and corruption, as well as the challenge of ensuring value for public funds. In their research on European public procurement governance, Dorn et al. (2008) found that procurement fraud risks that occur during procurement planning (e.g. preparation of specifications) can be categorized as "insider-driven specifications" and can result in "ample opportunities for renegotiation of terms" (Dorn et al., 2008, p. 243). They also found that procurement fraud risks may increase during those phases of the contract management process that involves interaction between offerors and government procurement bodies, such as during contract negotiations. Basheka and Bisangabasaija (2010) explored the relationship between institutional framework and management systems with unethical procurement behavior. They found that communication, monitoring and evaluation have a statistically significant correlation with unethical procurement behavior. Additionally, Basheka et al. (2013) conducted survey-based research on procurement corruption and found that the manifestation of procurement corruption included disregard for procurement procedures in contract award, high procurement expenditure yet low service and a misuse of public resources. Osei-Tutu et al. (2010) explored corruption practices inherent in public procurement of infrastructural projects in Ghana to identify corruption related challenges. Their findings identified "conflict of interest, bribery, embezzlement, kickbacks, tender manipulation and fraud" in Ghana's infrastructure delivery systems (Osei-Tutu et al., 2010, p. 236). Their research found that "sound procurement systems and pro-social equity policies that would foster good governance, corporate social responsibility, transparency, accountability and judicious public expenditure" will help control corruption practices (Osei-Tutu et al., 2010, p. 236).

Additionally, research on assessments of DoD's contracting process capability within Navy, Air Force and Army contracting agencies have consistently identified the pre-award process of source selection as more capable, and the post-award processes of contract administration and contract closeout as less capable across the DoD (Rendon, 2008, 2015). Finally, research on DoD's acquisition workforce competence has also been undertaken, specifically looking at the impact of the implementation of the Defense Acquisition Workforce Improvement Act (DAWIA). DAWIA requires members of the contracting workforce to meet certain education, training and experience levels as part of their job requirements. Snider (1996) suggests that the result of professionalization of the acquisition workforce has led to an acquisition workforce that is expert and specialized in its specific functional area (e.g. contracting), yet insular and careerist. Rendon (2010) concludes that as defense contracting continues to encounter problems in meeting cost, schedule and performance objectives, the defense acquisition system will continue to be reformed, and the defense contracting workforce will need to continue to reflect the changing knowledge, skills and abilities needed to manage defense contracts.

3. Conceptual framework

As can be seen from the above literature review, auditability theory incorporates governance components related to competent personnel, capable processes and effective internal controls, which make up the auditability triangle. These components can be directly applied to the DoD contract management environment. The competent personnel component refers to the education, training and experience of the DoD contracting officers performing contract management activities. The required education, training and experience standards of DoD contracting officers are mandated by the DAWIA federal statute, which was established in 1990. DAWIA requires members of the DoD contracting workforce to have earned a college degree with courses in business administration, completed training courses in contract management and have experience within the contracting profession (DAU, 2015).

The capable process component of auditability reflects DoD contract management processes and related activities performed by the contracting workforce. Contracting processes are typically discussed in terms of the contracting lifecycle, which include pre-award, award and post-award processes (Rendon and Snider, 2008). Contract management process capability is measured using different levels of maturity based on the extent to which the processes are institutionalized, integrated with other organizational processes, measured and continuously improved (Rendon, 2008). The importance of process capability is reflected in the procurement benchmarking literature. For example, Raymond (2008) suggests that the need for measuring public procurement processes is becoming more intense, especially as the demand for transparency and accountability in the public sector is increasing. Hong and Kwon (2012) found that measuring procurement processes and outcomes is an essential step, as procurement impacts financial performance. Nieto-Rodriguez and Evrard (2004) found that "[…] a higher maturity level will in most cases deliver superior performance in terms of project delivery and business benefits" (p. 11). Sanchez-Rodriguez et al. (2003) showed that assessing procurement processes has an indirect positive impact on business performance.

The effective internal controls component of auditability refers to the objectives of enforcing internal control policies to ensure compliance with laws and regulations, monitoring procedures to assess enforcement and reporting any material weaknesses. Internal control is typically discussed in terms of the internal control components established in the Internal Control Integrated Framework of the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Internal control activities, such as verifications, reconciliations, authorizations, segregation of duties and appropriate documentation, are important to help ensure that management's directives are achieved. The COSO internal control components have been adopted by the US Federal Government (GAO, 2014) as well as reflected in the DoDs internal control procedures (DoD, 2013).

Thus, the auditability components of competent personnel, capable processes and effective internal controls provide the basis for our conceptual framework (Figure 1) and establish the foundation for our research. The purpose of our research is to explore procurement fraud in the DoD through the lens of auditability theory. We do this by analyzing real-world DoD fraud incidents by focusing on the two auditability components of contracting processes and internal controls. The next section explains our research methodology.
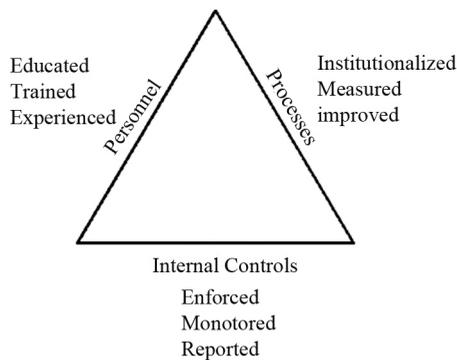
Figure 1.
Auditability triangle

4. Methodology

The exploratory nature of this research lends itself to a qualitative case study approach (Creswell, 2003; Yin, 1994). In conducting this case study, we accessed the DoD Office of General Counsel's (OGC) Encyclopedia of Ethical Failures (EEF) (DoD OGC, 2013) to identify real-world procurement fraud incidents. The EEF is a collection of selected cases of real-world incidents of US Federal Government employees (both military and civilian) who have intentionally or unwittingly violated the federal government standards of conduct (Tan, 2013). The purpose of the EEF is to "sensitize Federal employees to the reach and impact of Federal ethics statutes and regulations" (DoD OGC, 2013, p. 3).

The EEF identified 359 separate ethical failure incidents ranging from abuse of power to travel violations. Table I reflects the number of incidents for each type of ethical failure. Note that not all of the ethical failures are related to fraud, or specifically to procurement fraud. These 359 ethical failure incidents were analyzed using basic content analysis techniques to identify those incidents specifically related to procurement fraud (Krippendorff, 2012). Each ethical failure incident was analyzed using the search terms "acquisition", "contract", "purchase" and "procurement". Incidents containing any of those terms were then further reviewed to determine the incident's association with procurement fraud schemes. Based on the content analysis, we identified 93 incidents specifically related to procurement fraud. Of those 93 incidents, 20 case studies that are representative examples of DoD procurement fraud incidents were selected for our research.

This research is based on the assumption that the corruption and ethical lapses in the federal government are resulting in procurement fraud. Auditability theory states that these procurement fraud incidents may have occurred due to lack of competent personnel, less-than-capable contracting processes or ineffective internal controls. For each fraud incident, we identify the phase of the contracting process during which the procurement fraud incident occurred and the internal control component associated with the procurement fraud scheme. Our purpose is to explore the implications of procurement fraud on the contract management process and internal controls, our two studied components of the auditability triangle.

Our analysis of contract management processes will be based on the generally accepted contract management process framework established by Garrett and Rendon (2005) and used in the contract management process literature (Rendon, 2008, 2015).

Type of incident	No. of incidents
Abuse of position	16
Bribery (18 U.S.C. § 201-Type violations)	46
Compensation for representational services from non-federal sources (18 U.S.C. § 203-Type violations)	14
Conflicts of interest (18 U.S.C. § 208-Type violations)	37
Credit card abuse	19
Endorsements	3
Financial disclosure violations	11
Fraud (Violations not covered elsewhere)	22
Gambling and other contest violations	4
Gift violations	7
Involvement in claims against the government or in matters affecting the government (18 U.S.C. § 205-Type violations)	6
Misuse of government resources and personnel	70
Morale, welfare and recreation (MWR) issues	4
Political activity violations	23
Post-employment violations (18 U.S.C. § 207-Type violations)	22
Salary for government work from non-government source (18 U.S.C. § 209-Type violations)	22
Time and attendance violations	15
Travel violations	18
Total	359

Source: DoD OGC (2013)

Table I.
Listing of ethical failures

This framework consists of the following contract management processes and their descriptions.

4.1 Procurement planning
This is the process of identifying which organizational needs can best be met by procuring products or services outside the organization. This process involves determining whether to procure, how to procure, what to procure, how much to procure and when to procure. Procurement planning process activities include conducting outsourcing analysis, determining and defining the procurement requirement, conducting market research and developing preliminary budgets and schedules.

4.2 Solicitation planning
This is the process of preparing the documents (e.g., Requests for Proposals) needed to support the solicitation and procurement. This process involves documenting program requirements, selecting contract type and contract award strategy and identifying potential sources of suppliers.

4.3 Solicitation
This is the process of obtaining bids or proposals from prospective sellers on how organizational needs can be met. These activities include advertising the procurement

opportunity using the agency's electronic procurement portal, conducting pre-proposal conferences if needed and receiving the offeror's proposals.

4.4 Source selection
This is the process of evaluating proposals to select a contractor. This process includes reviewing technical, management and cost proposals, conducting cost/price analysis, negotiating cost, schedule and technical requirements, as well as agreeing on other contract terms and conditions.

4.5 Contract administration
This is the process of ensuring that each contracting party's performance meets contractual requirements. This process involves monitoring the contractor's performance to ensure it meets contract specifications, modifying the contract to reflect changes in requirements, inspecting and accepting contract deliveries and processing contractor payments.

4.6 Contract closeout
This is the process of verifying that all administrative matters are concluded on a contract that is otherwise physically complete. This process involves completing and settling the contract, including resolving any open items, and assessing the contractor performance. The contract closeout process also includes any contract termination-related activities.

Our analysis of internal controls will be based on the previously discussed internal control framework established by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The framework consists of the following internal control components and their descriptions (COSO, 2013).

4.7 Control environment
The control environment sets the tone of an organization. Management's commitment to ethical values and integrity, personnel policies and organizational structure is part of the control environment.

4.8 Risk assessment
Risk assessment involves identifying and evaluating the risks, including fraud risks, which could be threats to an organization's ability to achieve its goals and objectives. It includes assessing the potential risks and determining methods for mitigating the risks.

4.9 Information and communication
The information and communication internal control component includes appropriate and adequate internal and external communications as well as the accounting information system. Accountability, integrity and transparency throughout the organization are critical.

4.10 Control activities
Control activities encompass the policies, procedures and activities designed and implemented by the organization to mitigate the identified risks. It involves performance reviews, physical controls, technology controls and segregation of duties.

4.11 Monitoring activities
The monitoring activities internal control component is an ongoing process of assessing the quality of internal controls over time to ensure that the organization's objectives are being accomplished. It entails making adjustments or changes to control procedures as well as other aspects of the organization's policies when necessary and practical to ensure the goals of the organization are met.

Based on the analysis of the procurement fraud incidents, we develop recommendations for improving DoD contracting processes and internal controls as an approach to strengthening auditability in procurement operations and thus improving the deterrence and detection of procurement fraud. The next section presents our research findings.

5. Findings
We analyzed each procurement fraud incident to determine which specific fraud scheme was used, which internal control component contributed to the fraud incident, and during which phase of the contract management process the fraud incident occurred. In conducting this analysis, we considered the principles and activities associated with each internal control component and each contract management process as discussed in Section 4. Table II provides a list of the fraud schemes, internal control components and contract management processes associated with each procurement fraud incident (hereafter referred to as fraud incident).

For example, Incident Number 20 (Table II) involved an Air Force engineer in the contracts department of an Air Force base who, with former Air Force employees, formed a company to perform engineering work on the base. The company submitted a proposal to the base in response to a Request for Proposal. In his official capacity for the Air Force, the engineer was responsible for the technical evaluation of all proposals received for the project. The engineer gave a favorable evaluation of the proposal submitted by his own company. Based on the technical evaluation, the company was awarded the contract. The investigation resulted in the engineer being charged with participating personally and substantially in a particular matter in which he had a financial interest. The engineer pled guilty to a misdemeanor violation and was sentenced to nine months of probation and fined US$2,500 (DoD, 2013b). This fraud incident involved collusion and bid rigging procurement fraud schemes.

Based on the elements of this fraud incident, we also identified the associated internal control components and contract management processes. The fraud incident revealed an organization (Air Force contracts department) with a lack of integrity and ethical values, which is a characteristic of the control environment component. The organization also lacked appropriate policies and procedures such as independent checks and balances, which is associated with the control activities component. Furthermore, the organization lacked adequate ongoing monitoring processes, such as evaluation of the independent checks and balances, which is associated with the monitoring activities component. Additionally, because this fraud incident involved contracting activities such as proposal evaluation and contract award, we associated it with the source selection phase of contract management.

Table III details the distribution of fraud schemes, internal control components and contract management processes for each fraud incident. For example, the procurement fraud schemes identified in the fraud incidents that were used included collusion, bid rigging, bribery, conflicts of interest and billing/cost/pricing schemes. Some of the fraud

Incident no.	Procurement fraud scheme	Internal control component	Contract management process
1	Collusion; Bid Rigging	Control environment; Risk assessment; Control activities; Monitoring activities	Procurement planning; Solicitation planning; Contract administration
2	Bid Rigging; Billing/Cost Pricing	Control environment; Control activities; Monitoring activities	Source selection; Contract administration
3	Bribery; Billing/Cost Pricing	Control activities; Monitoring activities	Contract administration
4	Bribery; Billing/Cost Pricing	Control activities; Monitoring activities	Contract administration
5	Bribery	Control environment; Control activities; Monitoring activities	Source selection
6	Collusion	Control environment; Control activities; Monitoring activities	Source selection
7	Collusion; Bribery	Control environment; Control activities; Monitoring activities	Contract administration
8	Collusion; Bribery; Bid Rigging	Control environment; Control activities; Monitoring activities	Source selection
9	Collusion; Bid Rigging	Control environment; Control activities; Monitoring activities	Source selection
10	Conflict of interest	Control environment; Control activities; Monitoring activities	Source selection
11	Conflict of interest	Control environment; Control activities; Monitoring activities	Source selection
12	Conflict of interest	Control environment; Control activities; Monitoring activities	Source selection; Contract administration
13	Conflict of interest	Control environment; Control activities; Monitoring activities	Solicitation planning; Solicitation; Source selection; Contract administration
14	Conflict of interest; Billing/Cost pricing	Control environment; Control activities; Monitoring activities	Solicitation; Source selection;
15	Conflict of interest; Billing/Cost Pricing	Control environment; Control activities; Monitoring activities	Source selection;
16	Collusion Billing/Cost Pricing	Control activities	Source selection;
17	Collusion	Control activities; Monitoring activities	Source selection;
18	Collusion Billing/Cost Pricing	Control environment; Control activities; Monitoring activities	Source selection; Contract administration
19	Collusion; Bid Rigging	Control environment; Control activities; Monitoring activities	Procurement planning; Solicitation planning; Source selection
20	Collusion; Bid Rigging	Control environment; Control activities; Monitoring activities	Source selection;

Table II.
Fraud incidents and associated fraud schemes, internal control components and contract management processes

Distribution type	No. of incidents	(%)
Fraud scheme category		
Collusion	10	50
Billing and pricing	7	35
Bid rigging	6	30
Conflict of interest	6	30
Bribery	5	25
Internal control component		
Control activities	20	100
Monitoring activities	19	95
Control environment	16	80
Risk assessment	1	5
Contract management process		
Source selection	16	80
Contract administration	8	40
Solicitation planning	3	15
Procurement planning	2	10
Solicitation	2	10

Table III.
Distribution of fraud schemes, internal control components and contract management process

incidents involved more than one fraud scheme. Half of the fraud incidents were based on some type of collusion scheme between the government and the contractor. The frequency of the other fraud schemes ranged between 25 (bribery) and 35 per cent (billing/cost/pricing).

In addition, the internal control components which were identified as having weaknesses and that contributed to the fraud incidents included control activities, monitoring activities, control environment and risk assessment. Some of the fraud incidents incorporated more than one internal control component. The fraud incidents occurred due to material weaknesses predominately in the control activities component (100 per cent), in the monitoring activities component (95 per cent) and in the control environment component (80 per cent).

Furthermore, the contract management processes in which the fraud incidents occurred included procurement planning, solicitation planning, solicitation, source selection and contract administration. Some of the fraud incidents occurred in more than one contracting phase. Eighty per cent of the fraud incidents occurred during the source selection phase, with the next highest percentage (40 per cent) occurring during the contract administration phase.

6. Discussion
When we integrate the findings concerning procurement fraud schemes, internal control components and contract management phases, a clearer picture emerges on procurement fraud in DoD. From our selected case studies of procurement fraud incidents, source selection seems to be the phase where the majority of fraud incidents occurred. Based on our findings, the source selection phase had the majority of bid rigging, bribery, billing/pricing/cost schemes and conflict of interest fraud incidents. It is during source selection where contractor proposals are evaluated, costs are negotiated and contract award decisions are made. During these source selection activities, there

are ample opportunities for government managers (program managers, contracting officers and technical evaluators) and contractor representatives to interact with each other to discuss the procurement requirements.

The contract administration phase was also predominantly identified as a phase in which bid rigging, bribery, billing/pricing/cost schemes and conflict of interest fraud incidents occurred. It is during contract administration where the government interacts with the contractor through the monitoring of performance, inspecting and accepting deliveries and processing payments. It is also during the contract administration phase where the government may direct the contractor to provide additional supplies or services, regardless of whether they are specified in the contract.

Thus, it is during the performance of these source selection and contract administration activities that effective internal controls are critical. Based on our findings, the material weaknesses in the internal control components of control activities, monitoring activities and control environment may have contributed to the procurement fraud incidents. These internal control components play a critical part of ensuring the source selection and contract administration activities are conducted with integrity, accountability and transparency. For example, it is the control environment component that exercises oversight responsibility, embraces ethical conduct, establishes structure and authority and enforces accountability. The control activities component makes certain that policies and procedures are in place to support the control environment as well as the other components of internal control. The monitoring activities component ensures ongoing evaluations of the other internal control components and communicates any internal control deficiencies to the organization's leadership.

Other reports also support our research findings that DoD contracting agencies lack auditability in their operations. For example, the DoD IG has consistently reported that DoD's contract management processes are deficient due to material weaknesses in internal controls (DoD IG, 2009). These internal control material weaknesses reflect lack of policies, procedures and tracking systems to ensure compliance with statutory and regulatory procurement requirements. These internal control material weaknesses may be contributing to DoD's vulnerability to procurement fraud (DoD IG, 2014). Additionally, past assessments of DoD contracting agencies using process maturity models have indicated that DoD's contracting processes are less than capable, meaning they lack, to some extent, process documentation, institutionalization, measurement and improvement. The contract administration phase is typically assessed as having lower process capability and maturity compared to the pre-award processes (Rendon, 2008, 2015).

Finally, as previously discussed, the DoD contracting workforce is required to meet specific education, training and experience requirements set forth in the DAWIA. Yet, recent research has shown that there is minimal coverage of procurement fraud within the Defense Acquisition University (DAU) courses for contracting professionals (Castillo and Flannigan, 2014). Although there is one course available, it is taught from an auditing perspective and offered to financial auditors, as opposed to contracting professionals. There is a two-hour Web-based training module that is available for all acquisition professionals; yet, it is not focused on the contracting process or internal controls, nor is it required in the core contracting curriculum (Castillo and Flannigan, 2014). This may explain why DoD contracting professionals are not knowledgeable

about procurement-related internal controls and fraud schemes as identified from research by Chang (2013) and Castillo and Flannigan (2014).

As can be seen from our research findings, the auditability components of capable processes and effective internal controls are either missing or insufficient for the detection and the deterrence of procurement fraud in DoD contracting agencies. This may be contributing to DoD having an increased vulnerability to procurement fraud. We argue that DoD's response of increasing the number of financial auditors may not be the correct approach to dealing with this increased fraud vulnerability. Based on our research findings, we provide the following recommendations to DoD for fighting the battle against procurement fraud.

7. Recommendations

Our findings indicated that the procurement fraud incidents predominantly involved the internal control components of control activities, monitoring activities and control environment. Thus, our first recommendation is for the DoD to strengthen its internal controls. Specifically, the DoD should enhance the control environment component which exercises oversight responsibility, embraces ethical standards, establishes structure, authority and responsibility and enforces accountability during the contract management process (e.g. oversight of contracting authority, contracting ethics and procurement team roles and responsibilities). The DoD should ensure that the control activities component has effective policies and procedures to support the agency's control environment as well as its goals and objectives (e.g. oversight of contract award decisions, acceptance of deliverables and approval of contractor payments). The DoD should also strengthen its monitoring activities component to make certain that ongoing evaluations of the other internal control components are conducted and that any internal control deficiencies are communicated to the contracting agency's leadership (e.g. oversight of contracting policies and adherence to procedures to ensure compliance).

We also found that the majority of procurement fraud incidents occurred during the source selection and contract administration phases of the contract management process. Therefore, our second recommendation is for the DoD to increase its contract management process capability for its source selection and contract administration processes. Specifically, the DoD should strengthen its processes for source selection activities (e.g. proposal evaluations, contract negotiations and contract award decisions) by ensuring these processes are fully established, documented and institutionalized throughout the department. The DoD should also strengthen its processes for contract administration activities (e.g. contractor performance monitoring, inspection and acceptance of deliveries, contractor payment processing and contract change management) by confirming these processes are fully established, documented and institutionalized throughout the department. Focusing on improving contract management process maturity and strengthening the internal control components will help ensure that these contracting processes are enforced and in compliance with governing regulations.

Finally, we recommend that the DoD provide specific training to all participants of the contracting process on the identification of procurement fraud indicators and the implications on the agency's internal controls. This training should be part of

the DAU contracting core curriculum and mandatory for the DoD contracting workforce.

8. Conclusion
The US DoD obligates billions of dollars on contracts every year. Yet, given the required statutes and polices in place to ensure these contracts are awarded in compliance with public policy and conducted with integrity, accountability and transparency, the DoD is still vulnerable to a high level of procurement fraud and has been victim to a number of procurement fraud incidents. The DoD's response has been to increase its staff of financial auditors and fraud investigators.

Auditability theory states that fraud occurs because of lack of competent personnel, less-than-capable processes or ineffective internal controls. Our research used auditability theory to analyze real-world procurement fraud incidents in the DoD. For each fraud incident, we identified the contracting process during which the procurement fraud incident occurred and the internal control component associated with the procurement fraud scheme. We found that the majority of the procurement fraud incidents were based on some type of collusion scheme between the government and the contractor. Other frequently used fraud schemes were bribery and billing/cost/pricing. We also determined that the majority of the fraud incidents occurred during the source selection and contract administration phases of the contract management process. Finally, we found that all of the fraud schemes were associated with the control activities, monitoring activities and the control environment components.

Based on these findings, we can conclude that the DoD may be lacking auditability in its procurement operations, specifically in terms of less-than-capable source selection and contract administration processes and material weaknesses in the internal control components of control activities, monitoring activities and control environment. We provide recommendations to DoD for improving its contract management process capability and internal control effectiveness. The adoption of auditability theory may prove to be a more strategic and proactive approach to detecting and deterring procurement fraud than DoD's current approach of emphasizing financial auditors and fraud investigators.

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