Forensic Audit
and
Automated Oversight

Case Study: Purchase Card

Federal Audit Executive Council
January 21, 2010

Dr. Brett Baker, CPA, CISA
Assistant Inspector General for Audit
U.S. Department of Commerce OIG
(202) 482-2600

Joint Purchase Card Project (2002)

- Project purpose
- Project approach
  - Universe under review
  - SME Conferences
  - Developing indicator combinations
  - Field research
- Project results

Joint Purchase Card Review (2002)

- Review objectives
  - Develop an automated oversight capability to identify anomalies in purchase card data that may indicate fraud or abuse
  - Identify effective indicators that could be embedded into purchase card process
- Universe under review
  - 12 million purchase card transactions for 12 month period 2001-2 ($6.5 billion)
- Team – 300 auditors/investigators from DoDIG and Defense agencies
- Subject Matter Expert conference I
  - Structured brainstorming with 35 auditors, investigators, GSA officials
  - Developed 115 indicators of potential fraud
  - 40 indicators were codable in ACL and MS Access
- Identify and obtain transaction-level data
- Build targeted business rules and run against data
- Subject Matter Expert conference II
  - Validate indicators
  - Cardholder profile
  - Target transactions and sites for field research
- Field research
- Report and process improvements

Developing Indicator Combinations

- Few single indicators are effective
- Need to reduce false positives
- A few of the most interesting combinations can be initially selected and evaluated
- Other combinations can be continuously developed and evaluated
- Highly interesting individual transactions are also identified during the process of evaluating indicators

DoD Joint Purchase Card Review Results

- Transaction Universe
  - 12 million purchase card transactions ($6.5B)
  - 200,000 cardholders and 40,000 authorizing officials
- Data mining Results
  - Developed 40 fraud indicators from SME conferences
  - 6.5 million transactions (1+ indicator)
  - 13,393 transactions (combinations of indicators)
    - 2066 cardholders and 1604 approving officials in 752 locations
  - 8243 transactions (researched by auditors)
  - 1250 questioned transactions (some level of misuse)
- Outcomes
  - 175 cases with adverse action and 100 investigations opened
  - Capability to embed data mining indicators in credit card company systems to promote continuous monitoring

ALL AGENCIES BY STATE
PUSHPIN MAP

Pushpins

- ❓ UNDER INVESTIGATION
- 🔧 NAVY
- 🔧 OTHER DEFENSE
- 🔧 ARMY
- 🔧 AIR FORCE

File Edit View Insert Format Records Tools Window Help

Arial 8 **B** *I* U

27 CHs

Reason Flagged

Approving Official						DoDIG Control Number:	

ACCT: 4716304555585572 Latest AO: [redacted]

PHONE: ( ) - 0 SOURCE: U TRANS LIMIT: 00000190728816 CRATE: COMPANY: 58004 SERVICE: 21

LEVEL: 4716300021000990200058004000000000

NAME: MADIGAN ARMY MED CTR / MCHJ IM A / TACOMA, WA 984310000

Totals Below Are for All Cardholders Associated with this AO
Avg Trans Per Month AO Reviews: 71.47 AO CH Count: 27
Avg Tot Trans Amount Per Month: $37,849.58

Card Holder

ACCT: 4716300000291857

PHONE: (253) 968-0052 SOURCE: U TRANS LIMIT: 00000190728116 CRATE: COMPANY: 58004 SERVICE: 21

CHLEVEL: 4716300021000990200058004000000000

NAME: MADIGAN ARMY MED CTR / MCHJ IM A / TACOMA, WA 984310000

CHTransactions: 11 Reviewer Name: [redacted]
Totaling: ($1.03) Reviewer Phone: [redacted]

TDATE	PDATE	TRANS AMT	MERCHANT	MERCHANT ADDRESS	MCC	REF NUMBER	AUTH	VTCOD	Flagged to Review	Reason Flagged for Review	Referred to Investigator? / Misuse?	Amount Invalid?	Explanation of Findings
5/1/2001	5/4/2001	($39.95)	IBILL *WWW.IBILLCS.COM	800-307-3558, FL 033321	5967	74401401123061025539853	0	11	☑	~32MERDS-3			
3/27/2001	5/17/2001	($39.95)	IBILL *WWW.IBILLCS.COM	800-307-3558, FL 000000	5967	74798261137061025112928	0	11	☑	~32MERDS-3			
2/25/2001	4/27/2001	($39.95)	IBILL *WWW.IBILLCS.COM	800-307-3558, FL 000000	5967	74798261117061025228827	0	11	☑	~33,28~17,28~32MERDS-3			
11/25/2000	1/10/2001	($15.10)	INET	MOSCOW, 000000	4816	74798261010014124420116	0	11	☑	~17,28~I-110MOSCOW			
10/19/2000	10/19/2000	($0.48)	IMPAC REBATE - THANK YOU	11111, D 000000	0000	74798260293000000063054	0	65	☐				
4/13/2001	4/13/2001	($0.47)	IMPAC REBATE-THANK YOU	58125, D 0000	0000	74798261103000000030440	0	65	☐				
1/17/2001	1/17/2001	($0.08)	IMPAC REBATE - THANK YOU	00001, D 000000	0000	74798261017000000000372	0	65	☐				
11/25/2000	11/27/2000	$15.10	INET	MOSCOW, 000	4816	74908520331014124420114	863530	10	☑	~I-110MOSCOW			
4/26/2001	4/30/2001	$39.95	IBILL *WWW.IBILLCS.COM	800-307-3558, F 321	5967	24401401117061025096246	476930	10	☑	~32MERDS-3			
3/27/2001	3/29/2001	$39.95	IBILL *WWW.IBILLCS.COM	800-307-3558, FL	5967	24401401087061025112924	867470	10	☑	~32MERDS-3			
2/25/2001	2/27/2001	$39.95	IBILL *WWW.IBILLCS.COM	800-307-3558, FL 03	5967	24401401057061025228825	987040	10	☑	~33,28~32MERDS-3			

Many credits

Merchant is "I-Bill"

Merchant address = "Moscow"

8 of 11 transactions were flagged

Record: |◄ ◄ | 1 | ► ►| ►* | of 11

Note: This screen is best viewed with a display setting of 1280x1024

Note: Boxes with blue background will be updated by Auditor/Investigator for Accounts and transactions Reviewed (especially "flagged for review")

Record: |◄ ◄ | 10 | ► ►| ►* | of 136

Top Performing Data Mining Combinations

- 97% Entertainment Internet sites, Weekend/Holidays
- 67% Purchases from 1 vendor, CH=AO
- 57% Internet transactions, 3rd party billing
- 53% Interesting vendors, many transactions
- 43% Even dollars, near limit, same vendor, vendor business w/few CHs

Purchase Card Problem Areas

- Splitting procurements
- Purchasing goods or services which, although for a valid governmental purpose, are prohibited on a purchase card
- Purchasing items for which there is no government need
- Invoices were being certified without being reviewed.

Fraud Indicators

- Repetitive buying pattern even dollars, near purchase limits, or same or similar name for vendor
- Name for merchant and cardholder (or approving official) the same
- Fewer than 5 cardholders using a specific vendor
- Purchases approved by cardholder or no specific person instead by a office
- Cardholder accounts with numerous disputes

Fraud Indicators

- Regularly recurring split purchases, often to the same vendor
- Purchases outside normal purchase pattern of cardholder (possibly made by others)
- Recurring purchases from relatively unknown sources/vendors
- Cardholder accounts with several limit increases over a short period of time
- Frequently delinquent cardholder accounts

Examples of Fraudulent Activity

- Cardholders knowingly pay inflated prices for merchandise
- Large fraudulent transactions broken up and disguised as "split purchases"
- Vendors provide merchandise, services, gifts and/or portion of profit as a reward/incentive for purchase (kickbacks)
- Cardholder accounts with incomplete records available for review/inspection
- Purchased items not annotated on property books

Examples of Fraudulent Activity

- Bogus companies are established and co-owned by cardholders and vendors
- Solicitation/direction of other cardholders to use bogus companies known for kickbacks
- No product shipment, but invoices paid
- Falsified documents/invoices created and placed in files to cover audit trail

Examples of Fraudulent Activity

- Similar invoices from different vendors (software generated)
- Cardholder preference of particular vendor(s) (minimal rotation)
- Questionable purchases of consumable items (accountability subversion)
- Subversion of current Management Controls (by cardholder and/or approving official)

Examples of Fraudulent Activity

- Indications that approving official isn't conducting monthly reconciliation of cardholder accts.
- Overly documented cardholder files (fresh new documents and signatures)
- Recurring purchases of high value items (profit generation for kickbacks)
- Lack of inventory controls or failure to adhere to existing controls (accountability)

Future Potential Applications

- Unauthorized and Questionable Purchases
- Purchase Cards
- Travel Cards
- Communications Services, including long distance services, cellular phones and phone cards
- Fleet Cards
- AIR Cards
- Contract Action Data Discrepancies

Questions?