Various Examples of Data Analytics

Successful Fraud Tests

• Compare employee home addresses, social security numbers, telephone numbers and bank routing and account numbers to those of vendors from vendor master file. This test can reveal bogus or improperly selected vendor accounts.
• Analyze all debits to income accounts particularly debit memos. These are often used to offset fraudulently prepared checks.
• Monitor the activity in suspense accounts including the age of suspense items and the rolling of similar amounts. This is another type of account that is often used to hide fraudulent accounting entries. At a minimum, this can reveal operating problems that may be developing.
• Look for duplicate payments using dates, payees, vendor invoice numbers and amounts.
• Obtain a social security number listing from outside vendor (IRS) to test for valid SSNs and determine whether holder is alive or deceased. Cross reference that SSN listing against pension disbursements to look for payments made to deceased persons. Cross reference that SSN listing against payroll records to find any errors in your payroll records.

Questionable Invoices

• Identify invoices without a valid purchase order.
• Look for invoices from vendors not in approved vendor file.
• Find invoices for more than one purchase order authorization.
• Identify multiple invoices with the same item description.
• Extract vendors with duplicate invoice numbers.
• Look for multiple invoices for the same amount on the same date.
• Find invoice payments issued on non-business days (Saturdays and Sundays).
• Identify multiple invoices at or just under approval cut-off levels.

Questionable Disbursements

• Use Benford’s Law to detect patterns of inappropriate disbursements.
• Look for payments to vendors not on contract.
• Look for multiple payments to the same vendor on the same date or for the same amount (except for recurring charges, such as rent).
• Find disbursements issued on non-business days (Saturdays and Sundays).
• Identify multiple disbursements at or just under approval cut-off levels.
• Stratify vendor balances, check amounts, invoice amounts, purchase order amounts, etc., for unusual trends or exceptions.
• Calculate and validate annualized unit price changes in purchase orders/payments for the same product over time.
• Review sequence of check numbers for gaps.
• Identify payments where no discount was taken.

Phantom Vendor Schemes

• Match names, addresses, phone numbers, bank accounts and taxpayer identification numbers between
• Verify existence of vendors who use a post office box for an address.

Kickback or Conflict-of-Interest Schemes

• Look for vendor prices greater than standard.
• Identify price increases greater than acceptable percentages.
• Check for continued purchases in spite of high rates of returns, rejects, or credits.
• Look for high volume purchases from one vendor.
• Look for frequent change orders.
Dormant Account Schemes
- Check that all applicable accounts have been flagged as dormant.
- Identify dormant accounts with activity.
- Check for transfers from dormant accounts to employee accounts.
- Check changes of addresses on dormant accounts.
- Cross check new addresses to employee addresses.

Payroll Schemes
- Test payroll records by searching for missing voluntary deductions for insurance, etc.
- Test payroll records by searching for missing information such as Date of Birth, Social Security Number, etc.
- Test payroll records by verifying the existence of multiple employees sharing the same address.
- Stratify payment amounts, hours worked, hourly rates and check dates for unusual trends and exception.
- Reconcile salaried employees' gross pay amounts from one pay period to the next.
- Compare payroll costs between periods.
- Look for hourly employees working more than the available hours / reasonable hours in a pay period.
- Compare payroll data files to human resources files to identify ghost employees or differing rates of pay.
- List possible duplicate payments based on more than one than payment made to one employee in a single pay period.

Bidding and Contracting Schemes
- Look for patterns of rotation among vendors.
- Look for bids that are exceptionally lower than those of other vendors.
- Look for low winning bids followed by numerous change orders.
- Look for excessive use of one contractor in a competitive field.
- Look for patterns in awards to vendors.
- Look for identical bids.
- Look for multilateral drops in bid prices (accompanied by the entry of new competitor).
- Look for competitors with the same addresses, same principals, same sales agents, same phone numbers, etc.
- Look for vendors with same names, addresses, phone numbers, etc., as employees.

Capital Assets Schemes
- Extract large additions or disposals for review.