IDEA

The Complete Guide to

Auditing with Data Analytics Tools

When it comes to auditing, utilizing CaseWare IDEA to analyze 100% of the data is a smart choice. It is comprehensive, powerful and easy to use, and offers more than 100 common audit functions such as Benford's Law, fuzzy duplicate, gap detection, summarization, stratification, sampling and more.

In this guide, auditors, accountants and other financial professionals will find detailed information on some of the countless ways IDEA can be used to perform tests and analyses during audits within different departments and industries, as well as pointers on what to watch for when auditing in those areas.

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Finance Audits

Accounts Payable

While suppliers normally notify companies of any issues with payments, auditing accounts payable is important to establish that liabilities are not being understated or suppressed. Many tests relate to supplier master file details. This often resides on a different file to the detailed ledger items.

Analysis

- Reconcile check register to disbursements by vendor invoice
- Select and report details of various types of accounts and compare with turnover
- Summarize invoices by supplier to prove individual balances
- Create activity summaries for suppliers with duplicate products
- Generate cash requirements by bank, period, product, vendor, etc.
- Isolate vendor unit price variances by product
- Create activity summaries by supplier
- Reconcile check register to disbursements by vendor invoice
- Total posted invoices for the year for accurate vendor rebates
- Evaluate purchasing contract compliance

Calculations

- Cast (total) files. It is often best to separate debit and credit balances.
- Identify vendor unit price variances by product over time
- Calculate cash requirements by bank, period, product, vendor, etc.
- Calculate days in Accounts Payable and average days for invoices to be paid

Gaps and Duplicates

- Test for duplicate payments/invoices
- Test for duplicate bank account details
- Test for duplicate purchase numbers
- Identify duplicate invoice payments or freight and tax charges
- Identify invoices posted with duplicate purchase order numbers
- Create activity summaries for suppliers with duplicate products

Exception Tests

- Identify debit balances
- Identify unusual standing data
- Identify old invoices
- Identify invoices with missing order numbers
- Test for items with dates or references out of range (cut-off)
- Identify and total liabilities for goods received and not yet invoiced
- Extract total posted invoices for the year for accurate vendor rebates
- Find invoices without purchase orders
- Identify cash/lost discounts not taken
- Extract total posted invoices for the year for accurate vendor rebates
- Extract invoices posted with duplicate purchase order numbers

Matching and Comparing

- Match subsequent period payments against period and balances to identify unmatched payments
- Compare supplier price lists to Electronic Data Interchange invoice charges to ensure billings are in accordance with agreements
- Compare the master file at two dates to identify new suppliers
- Compare voucher or invoices posted against purchase order amounts
- Find distributions to account/suppliers not in suppliers' account ledgers
- Compare supplier names, addresses and other information to those of employees
- Compare recurring monthly expenses to paid invoices
- Compare vendor payables posted to purchase orders
- Correlate vouchers or invoices posted versus purchase order amounts
- Check vendor address against mail address lists

Accounts Receivable

Tests of Accounts Receivable or the Sales Ledger are usually of validity. Items of particular concern are old invoices, unmatched cash and large balances, particularly where customers are in difficulty. Accounts Receivable data is often obtained by requesting statements as a print report and reading these into IDEA. Care must be taken to ensure statements have been produced for all accounts.

Analysis

- Profile debtors using Stratification to see how many large debts there are and what proportion of value is in the larger items
- Stratify and summarize customer information to create customer profiles
- Generate summaries by customer, invoice, amounts, products, etc.
- Profile customers' purchasing cycles to improve profitability
- Report and automatically age total receivables in any format

Calculations

- Cast (or total) files (separate debits and credits)
- Determine carrying costs by comparing days in collection by customer
- Determine average sales amounts by product, sales representative, region, etc.
- Produce an aged debt analysis. Consider how to deal with unallocated cash and credit notes.
- Re-value foreign debts
- Check transaction totals to the balance on each account
- Calculate lost revenue from unpaid carrying charges by client, etc.
- Calculate day to payment and summarize by client, region, sales representative, etc.
- Show variances between delivery documents and invoices

Gaps and Duplicates

- Report gaps in sequences of invoices generated
- Identify duplicate invoices (both invoice number and customer/value), credits or receipts, in any order

Exception Tests

- Identify old items (e.g., greater than three months old)
- Identify large balances either in their own right or compared to turnover
- Report credit balances
- Identify unmatched cash or credits
- Test for items with dispatch dates or numbers outside the expected range
- Identify part payments of debts
- Identify invalid transaction types
- Identify customer addresses that are "care of" or flagged not to be sent out
- Identify high-value credit notes, balances, and invoices
- Identify credits beyond discount terms
- Identify accounts with no recent activity for sales follow-up
- Identify credit limit exceptions
- Identify accounts with no recent activity for follow up by sales reps

Matching and Comparing

- Compare the balance on an account with its turnover
- Compare balances with credit limits and report exceptions (e.g., accounts with balances in excess of their credit limits or accounts with no credit limits, etc.)
- Compare customer balances with credit limits to identify credit policy exceptions

Creditors

The main objective when auditing creditors is to check for the validity of items. This encompasses suppliers over-pricing, invalid invoices, fraud of various types, accidental duplication and identifying out-of-control expenses.

Analysis

- Total the value of invoices
- Identify large payments to suppliers by summarizing by supplier
- Stratify by payment value and identify potential invoice splitting below authorization levels
- Analyze payment types and identify any cash payments

Calculations

- Calculate the number of days that it took for invoices to be paid and identify any irregularities

Gaps and Duplicates

- Identify any missing check numbers
- Identify any missing purchase order numbers
- Test for duplicate invoice numbers and/or amounts
- Test for duplicate payments to suppliers
- Test for duplicate creditors by looking for names and addresses, bank account details etc.

Exceptions Tests

- Identify records where there is variance between the order amount and the invoice amount
- Identify and check any missing VAT values
- Isolate payments that were made on weekends and/or bank holidays

Matching and Comparing

- Ensure payments are to valid suppliers
- Ensure that authorization limits are approved and authorizers are valid
- Identify any payments to unauthorized suppliers
- Ensure payments are not made to employees

Debtors

When auditing debtors, the objectives are to look for over-pricing by suppliers, invalid invoices, fraud of various types and accidental duplication, and to identify opportunities to control expenses.

Analysis

- Summarize by debtor name
- Analyze credit amounts
- Stratify debit value by debtor amount and analyze any unusual items

Calculations

- Recalculate debit value

Gaps and Duplicates

- Test for duplicate debtor numbers
- Test for duplicate invoice numbers and/or amounts
- Test for duplicate debtor names and addresses

Exceptions Tests

- Isolate any credit values
- Isolate any zero values
- Test for any missing information from records

Fixed Assets

Fixed Asset registers vary in the detail of information and volume of records. In organizations with significant volumes of records, IDEA can scan for problem items. Property-based registers with significant detail are also worth examining. Some of the common tests are:

Analysis

- Provide a total of fully depreciated assets still in use

Calculations

- Cast (total) the file providing separate totals for cost, depreciation and net book values
- Recalculate depreciation figures
- Prove totals of additions and disposals and recalculate profits or losses on disposal
- Recalculate expense and reserve amounts using replacement costs
- Recap asset values, in amount order, by net or cost amount
- Identify fully depreciated items and assets higher than replacement cost
- Recap asset values, in value order, by net or cost amount
- Recalculate expense and reserve amounts using replacement costs
- Compare book and tax depreciation and indicate variances
- Compare useful lives of assets by category
- Extract assets with useful lives or depreciation rates beyond set norms
- using replacement costs
- Recap asset values, in amount order, by net or cost amount

Exception Tests

- Identify items with a large net book value
- Supply details of where the depreciation rate is unusual
- Test for dates being in the appropriate period
- Identify assets transferred or acquired from group companies
- Provide information for tax purposes
- Identify items with zero or negative cost and items where depreciation exceeds cost
- Identify items where the descriptions do not match coding
- Extract assets with useful lives or depreciation rates beyond set norms
- Identify fully depreciated items and assets higher than replacement costs

Duplicates

- Test for duplicate reference numbers

Matching and Comparing

- Compare book and tax depreciation and indicate variances
- Compare actual cost to budgeted cost to highlight any significant variance
- Compare useful lives of assets by category

Sampling

- Attribute Sampling, Random Sampling or Stratified Random Sampling for physical verification or checking additions

General Ledger

General or nominal ledgers contain balances for each account together with transaction history and various references and descriptions. Usually balances and transactions are held in different files, but summarizing the transactions and opening balances can prove the closing balances.

In determining what to download, consider if budget and previous period data is available and useful for comparisons and exception tests (e.g., expenses over budget). Transaction data should include sources, dates, accounting month, transaction references and posting references.

Sophisticated ledgers will hold each individual posting to allow enquiries, analyses and drill down. If only summary posting totals are held, then IDEA will be of limited use. It is important to fully understand coding structures. The more complex general ledgers will have segmented the account code for different purposes (e.g., cost centers, expense codes).

Interrogations on general ledgers can also be useful as a source of information when auditing other areas (e.g., product profitability, branch performance, expenses, etc.).

Analysis

- Provide totals of entries generated by different sources (e.g., purchase or sales ledger, journal vouchers, etc.) to show the volume and value
- Foot (total) the balances to ensure they balance to zero. Note that some ledgers include memo amounts that may need to be excluded.
- Total (or summarize) transactions by account to prove the trial balance
- Analyze year-to-date activity for large operating accounts (rent, taxes, etc.)
- Create and print custom balance sheets, P & L's, cash flow analyses, etc.
- Create budget reports by account, division, department, etc.
- Speed closing with quick account reconciliations and adjustment transactions
- Re-perform account summarization for management accounts, financial accounts or consolidation
- Provide detailed analysis of selected accounts

Calculations

- Re-perform automatic allocations over accounts
- Calculate and sort percentage variances in accounts between periods
- Calculate financial ratios and changes for sales/ assets, debt/equity, etc.
- Compute weighted averages and interest rates
- Prepare trial balances by tax groups and calculate various tax provisions

Gaps and Duplicate

- Test for duplicate debtor numbers
- Test for duplicate invoice numbers and/or amounts
- Test for duplicate debtor names and addresses
- Identify assets transferred or acquired from group companies
- Provide information for tax purposes
- Identify items with zero or negative cost and items where depreciation exceeds cost
- Identify items where the descriptions do not match coding
- Extract assets with useful lives or depreciation rates beyond set norms
- Identify fully depreciated items and assets higher than replacement costs

Exception Tests

- Test for transactions with dates outside the posting month or year (cut-off)
- Test for duplicate postings
- Select any journal entry for testing and audit purposes for any period

Matching and Comparing

- Compare balances with previous periods budgets or management accounts to show variances and fluctuations
- Compare summaries by major accounts in any order

Investments

The following tests are relevant where the accounts are interest-bearing deposits from customers:

Analyses

- Stratify balances by size
- Group accounts by product type
- Age investment portfolio to analyze interest rate re-pricing risk
- Stratify portfolio by size
- Summarize portfolio by type, issuer, interest rate, maturity, etc.
- Create charts of investment portfolio information

Calculations

- Cast (or total) accrued interest
- Prove interest capitalization, charges
- Re-perform individual interest calculation

Exception Tests

- Extract unusual interest rates or amounts
- Identify/summarize dormant accounts and identify transanctions thereon
- Identify negative balances
- Identify accounts with suppressed statements
- Identify any records that are not complete or up-to-date

Test for money laundering

- Many of the previous tests are applicable to current or checking accounts. There are also a number of tests that can be carried out when searching for money laundering.

Other Tests Applicable in Certain Cases Include:

- Identify forward-dated transactions
- Provide totals of forward-dated transactions
- Identify overdue maturities
- Identify customers over their overdraft limit or customers with expired limits
- Identify dormant accounts and transactions thereon
- Re-perform currency conversions
- Provide details of currency exposure

Loans and Mortgages

The following tests are relevant where the accounts are either commercial or personal loans:

Analyses

- Stratify balances and create a summary file
- Analyze balances and interest rates by risk rating
- Analyze the file over internal accounts and customer account types
- Analyze interest margin on accounts by type
- Analyze loan portfolio by servicing officer, location, loan type, etc.
- Review and analyze underlying collateral on loans secured by Accounts Receivable and Inventory
- Summarize loan portfolio information based on data in any field
- Summarize loans by collateral and purpose to analyze portfolio risk

Calculations

- Cast (or total) accrued interest, balance
- Reprove arrears calculations and reporting
- Check interest and service fee calculations

Exception Tests

- Identify staff loans
- Identify large loans
- Identify loans with unusual interest rates
- Identify balances greater than original advances
- Identify negative balances
- Create custom reports on new, renewed and past due loans

Other useful tests include stratifying interest rates against each risk rating.

- Generally, higher risk loans should bear a higher rate of interest. The analysis followed by exception testing can pick up anomalies or branches/ individuals that are either risky or particularly prudent in their lending.

Matching and Comparing

- Use cross-matching techniques to pick up multiple loans to the same address. Compare balances at different periods to identify movements.

Payroll

Payroll is one of the traditional audit areas applicable to most organizations and is an excellent area to use IDEA. The main objective is validity, and tests of existence of employee and correctness of pay are usually predominant. There are many regulations and taxes associated with payroll, and compliance with these regulations and taxes can be checked.

Analyses

- Summarize/stratify salaries by department/ grade etc.
- Profile employee ages/years of service to assist in forward planning
- Summarize payroll distribution for reconciliation to general ledger
- Analyze, summarize and compare costs for special pay, overtime, premium, etc.
- Create custom payroll reports
- Sort employees by name, address and store to identify conflicts-of-interest where managers have relatives working for them

Calculations

- Cast (total) gross pay, net pay, deductions and any other value fields
- Calculate gross pay
- Calculate net pay

Exception Tests

- Extract all payroll checks where the gross amount exceeds the set amount
- Reasonableness of tax code, pay/grade comparison, hours worked, overtime claimed, sick days taken, vacation days taken, date of birth (over 16, under 65), bonuses and other allowances, gross pay, hourly rates, salary amounts, exemptions, etc.

Gaps and Duplicates

- Duplicate employees (Social Insurance, National Insurance, Social Security numbers, Employee numbers) on payroll file
- Duplicate bank account details
- Duplicate names and dates of birth

Matching and Comparing

- Comparison of payroll files at two dates to determine recorded starters and leavers (hires and terminations), and if changes in pay are as expected
- Join payroll transactions file to payroll master file to determine if there are “ghost” employees on the payroll
- Compare time-card entries and pay to payroll and indicate variances
- Compare vendor addresses/phone numbers and employee addresses/phone numbers to identify conflicts-of-interest

Sampling

- Most sampling options apply

Purchases and Payments

Purchases are one of the major areas of success with IDEA. The main objective is to check for the validity of items. This encompasses suppliers over-pricing, invalid invoices, fraud of various types, accidental duplication and simply picking up out-of-control expenses. Before embarking on all of the various tests, it pays to conduct an initial analysis of types and a profile of values.

Analyses

- Analyze purchase or payments by value bands and identify unusual trends. Test for invoice splitting, particularly below authorization levels.
- Summarize by the type of payment (regular supplier, one-off, check, electronic transfer, etc.)
- Analyze by period to determine seasonal fluctuations
- Analyze late shipments for impact on jobs, projects or sales orders due
- Reconcile order received to purchase order to identify shipments not ordered
- Report on purchasing performance by location
- Summarize item delivery and quality and compare vendor performance
- Summarize cash payments by the respective account distribution for reconciliation to the general ledger posting
- Compare accrued payable to received items to reconcile to general ledger
- Check for continued purchases in spite of high rates of return, rejects or credits

Calculations

- Reproduce purchase analysis and posting totals
- Recalculate the total of cash payments
- Track scheduled receipt dates versus actual receipt dates

Gaps and Duplicates

- Produce exception reports of large items, possibly with an exception limit determined by the type of item (e.g., the general ledger code)
- Identify price increases greater than acceptable percentages
- Identify invoices without a valid purchase order
- Identify high-volume purchases from one vendor
- Find invoices for more than one purchase order authorization
- Identify and extract pricing and receipt quantity variations by vendor and purchase order
- Identify multiple invoices at or just under approval cut-off levels
- Find invoice payments issued on non-business days (e.g., Saturdays and Sundays)

Sales and Receipts

The main concerns in sales are completeness of recorded transactions, correct pricing and the calculation of commissions. Credit checking may be important and, if significant, credit notes are worth checking.

Generally a sales history file should be available, although on some systems transactions are archived or cleared down monthly. In these cases arrangements will have to be made to copy and save the file each month. The Append Databases task in IDEA can then be used to create an annual file (or whatever period is required) from the monthly files. It is normally worthwhile conducting some analyses of sales by appropriate headings and then using exception testing.

Analyses

- Analyze sales and profitability by area, salesperson, month, store, category, vendor or all
- Summarize receipts by type
- Summarize cash receipts by the account code distribution for reconciliation to general ledger postings
- Summarize shipments by warehouse for product distribution analyses
- Produce analytical review information on sales by value band
- Analyze product demand by summarizing products by due date
- Analyze open orders and open invoices by customer for credit control
- Reconcile booked items to inventory reserved (on hold) items

Calculations

- Reproduce sales summaries, posting totals
- Test pricing, discount calculations on invoices
- Control profits by calculating line item margins before shipment
- Analyze variances in sales and summarize trends numerically or graphically
- Report on the correlation between items shipped and items ordered
- Isolate detail and average backlog by customer, item, location, etc.

Exception Tests

- Identify sales values higher than usual for item type
- Identify sales prices less than expected for product type or large discounts given
- Identify large credit notes
- Identify high-volume amounts by products, customers, sales representative, store, etc.
- Extract all sales data for audit by customer, product, region, etc.

Gaps and Duplicates

- Missing sales invoice numbers
- Missing dispatch note numbers
- Duplicate invoices (either duplicate invoice number, dispatch number, or customer and detail/ amount)

Government and Taxation Audits

Council Tax

Analyses

- Total the council tax amount and the amount received
- Perform age analysis of arrears

Calculate

- Calculate interest on arrears
- Recalculate the council tax amount

Exception Tests

- Isolate any records that have missing information
- Isolate any records where no payment has been made
- Test for any large credit balances, refunds and write-offs

Gaps and Duplicates

- Test for duplicate property reference numbers

Matching and Comparing

- Match against the property register to ensure that a charge has been raised for each property.

Public Sector

Government systems often relate to the payment of benefits, grants, assistance, etc. to individuals and organizations. The tests with IDEA tend to be specific to the particular system (which is often unique), but there are some general categories of tests:

Analyses

- Analyze sales and profitability by area, salesperson, month, store, category, vendor or all
- Summarize receipts by type
- Summarize cash receipts by the account code distribution for reconciliation to general ledger postings
- Summarize shipments by warehouse for product distribution analyses
- Produce analytical review information on sales by value band
- Analyze product demand by summarizing products by due date
- Analyze open orders and open invoices by customer for credit control
- Reconcile booked items to inventory reserved (on hold) items

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- Identify large credit notes
- Identify high-volume amounts by products, customers, sales representative, store, etc.
- Extract all sales data for audit by customer, product, region, etc.

Gaps and Duplicates

- Missing sales invoice numbers
- Missing dispatch note numbers
- Duplicate invoices (either duplicate invoice number, dispatch number, or customer and detail/ amount)

Note that there may be certain legal considerations in different countries on whether cross-matching between systems is allowed. Experience indicates that the incidence of error or fraud is often higher in certain groups or categories of people. Tests with IDEA in these areas are often very effective, but again, care must be taken not to infringe on any laws or regulations.

Taxes

Another major area for government work is in auditing the various taxes collected at local and national level. Tests are often very specific to the departments concerned but there are some general points.

Analyses

- Age arrears and then split between types of charge
- Analyze write-offs and refunds

Calculations

- Prove year-end balances and then assess the arrears position
- Calculate taxes and determine if they are within feasible boundaries

Exception Tests

- Test the validity of charges raised
- Identify large write-offs and refunds
- Check the validity of reference numbers (e.g., VAT numbers)

Matching and Comparing

- Cross-check property taxes to property registers (if possible) to ensure a charge has been raised for each property
- Check expenses claimed by one organization and how they tie in to declared revenue of suppliers

Industry-Specific Audits

Banking and Financial Applications

IDEA is useful in most areas of banking including current accounts, personal and corporate lending, treasury functions and investment accounts. The usual guidelines on volume and depth apply. However, in some banking systems the volume of transactions can be too great to download to a personal computer. It may be appropriate to download a segment of the data (e.g., a region) or a selected number of fields.

Calculations

- Cast (or total) the ledgers
- Cast (or total) account balances
- Re-perform interest calculations
- Check calculations of bank charges and currency conversions

Gaps and Duplicates

- Identify duplicate invoices (both invoice number and customer/value), credits or receipts, in any order
- Report gaps in sequences of invoices generated

Exception Tests

- Identify accounts with missing standing data (e.g., date of birth)
- Check charges are being raised where appropriate
- Isolate any forward dated transactions
- Identify invalid or unusual standing data
- Identify dormant accounts and transactions thereon
- Identify accounts with statement suppression
- Identify customers over their overdraft limit or who have expired limits
- Identify overdrawn staff accounts
- Test for money laundering
- Other typical area of tests include:

Depository Accounts

- Check interest and service charge calculations
- Easily identify data input coding errors
- Analyze transaction activity
- Compile demographic information for compliance examinations
- Age interest-bearing deposits by maturity date to analyze interest rate risk
- Analyze account activity and services used by type of account to evaluate service charge and interest pricing structures
- Analyze depository portfolio by servicing officer, location, customer type, etc.

Regulatory Compliance

- Compile and chart data based on account types and service usage utilizing demographic information captured in central information, depository and loan systems to document CRA Compliance

Healthcare Applications

Accounts Receivable, Patient Billing and Managed Care

- Calculate average days from discharge to bill and bill to payment by payer or department
- Determine appropriate level of contractual allowance and doubtful accounts reserves
- Age receivables on date-of-service rather than invoice date to recalculate cash flow
- Analyze rejected payments by financial class, procedure code and cost center
- Identify underpaid managed care accounts
- Determine profit margin by physician and financial class

Charges

- Identify late charges by department and by month
- Look for invalid, high dollar or duplicate charges on patient bills
- Look for lost charges by matching supplies used to supplies billed
- Check procedure codes and billed charges to identify inappropriately billed charges

Clinical Subsystems

- Compare patient visit data on clinical subsystems to patient master data
- Identify interface failures
- Identify pricing discrepancies between subsystems and master data

Demographics

- Develop patient statistics by postal codes or other demographic data
- Look for incomplete or miscoded patient demographic information
- Identify profitable segments of the patient population

Materials Management

- Analyze usage and ordering to improve inventory reordering
- Report on stock and high value balances using any selection criteria
- Identify obsolete inventory by turnover analysis
- Compare speed and accuracy of delivery by product and vendor
- Profile supply usage by month and by department

Medical Claims

- Analyze timeliness of claims payments by comparing claim date, claim received date and claim paid date
- Look for duplicate billings and claim payments based on patient, provider, date of service and amount
- Compare speed and accuracy of delivery by product and vendor
- Profile supply usage by month and by department

Medical Records

- Identify duplicate medical records for the same patient
- Track diagnosis coding deficiencies and incomplete records
- List incomplete records and incompatible coding
- Report on procedure codes by physician, department or patient

Specialists

- Determine specialist/doctor contract compliance
- Evaluate specialist/doctor practice history by patient type and payer
- Report on incomplete specialist/doctor profiling information

Purchase Order Management

- Report on purchasing performance by location
- Identify pricing and receipt quantity variations by vendor and purchase order
- Identify duplicate purchase orders and receipts without purchase orders
- Reconcile receipts by comparing accrued payables to received items
- Compare vendor performance by summarizing item delivery and quality

Insurance Companies

The main transaction streams are premiums and claims, although there are special areas (such as re-insurance) where IDEA can also be used successfully.

The main tests are concerned with ensuring all premiums are raised and the correct rate is used. However, analyses of risk and exception of tests of old or forward dated items are useful.

Analyses

- Stratify premiums by size and product type
- Summarize new business by agent or area
- Summarize debts by agent

Calculations

- Recalculate premiums
- Prove posting totals

Exception Tests

- Extract old premiums due on policies that have not been lapsed
- Identify policies that have been cancelled soon after inception
- Identify policies with initial discounts that have then been lapsed and credited
- Extract negative debts
- Identify unallocated cash
- Extract policies with blank or invalid policy numbers
- Identify policy premiums that have only been part paid
- Identify Direct Debits that have not been collected

Litigation Services Applications

Fraud Investigations

- Look for phantom vendors by matching names, addresses, phone numbers and National Insurance numbers/Social Security numbers between vendor files and employees and/or address listings
- Detect invoice splitting schemes or other purchasing fraud by stratifying and investigating invoices at or just below maximum levels triggering public bids or authority levels for buyers
- Identify questionable invoices by searching for duplicate or incomplete invoices and for invoices paid on non-business days (e.g., Saturdays and Sundays), identifying multiple invoices for the same amount on the same date and checking for multiple invoices just under approval cut-off levels
- Search for phantom employees by matching National Insurance numbers/Social Security numbers against publicly available valid number files. Analyze numbers by comparing them against other demographic information such as mismatched country of birth and postal codes, which are county specific.
- Detect payroll fraud by matching termination dates for employees against the final few payroll runs. One scheme is to continue payments for the employees that have left but change the payment details to the clerk's account.
- Investigate dormant account schemes by identifying and analyzing activity on dormant accounts and cross-checking dormant account address changes against employee addresses
- Facilitate money laundering investigations by searching for large rounded transactions, matching debit and credit transactions on the same account, identifying large cash deposits and cross-checking account holder addresses against address listings
- Detect Accounts Receivables fraud by identifying unusual patterns, such as unusually high write-offs or credits by one employee, accounts that seem to be assigned to collection early, and accounts written off shortly after being established, particularly ones for which no payment was recorded
- Detect Accounts Receivables fraud by comparing employee addresses and phone numbers to vendor master files. Another technique is to analyze local vendor addresses and names as they relate to sites and ownership records in public property tax files and then to employee names.
- Document kickback and conflict of interest schemes by identifying vendor prices and vendor price increases that are greater than the standards. Search for continued purchases despite high rates of returns, rejects or credits, and look for high-volume purchases from one vendor.

Healthcare

- Evaluate managed care payer performance
- Recalculate profit margins by doctor and financial class
- Analyze physician contract compliance
- Use procedure codes to summarize medical record information by doctor, specialist, hospital, department, patient or insurance provider
- Review medical records for diagnosis coding deficiencies, incomplete records, incompatible coding or inappropriately billed charges
- Compare dates of service for outpatient care to dates of admission to hospital for compliance
- Look for duplicate billings and claims payment by patient, provider, date of service or amount

Bankruptcy

- Sort, stratify and summarize volumes of historical financial transactions data
- Match and compare bank account records to accounting system data
- Calculate and analyze variances in accounts between periods
- Review inventory valuations and identify obsolete inventory
- Recap asset values and compare book and tax depreciation
- Cross-check debtor addresses and tax identification numbers to owners/employees addresses and tax identification numbers to identify related parties
- Search for related party transactions
- Analyze the timing of payments
- Match interbank and intrabank transfer data
- Check the accuracy of trustee reports

Litigation Support Applications

Dispute Resolution

- Calculate damages based on historical data
- Sort, stratify and summarize volumes of historical financial transactions data
- Identify errors in data
- Match and compare data from different sources
- Perform detailed analysis of any data available in electronic format including print report files
- Easily perform sampling and evaluation or prediction of errors
- Look for fraud in financial data

Bankruptcy

- Match and compare bank account records to accounting system data
- Calculate and analyze variances in accounts between periods
- Review inventory valuations and identify obsolete inventory
- Recap asset values and compare book and tax depreciation
- Cross-check debtor addresses and tax identification numbers to owner/employee addresses and tax identification numbers to identify related parties
- Search for related party transactions
- Analyze the timing of payments
- Match interbank and intrabank transfer data
- Check the accuracy of trustee reports

Healthcare

- Evaluate managed care payer performance
- Recalculate profit margins by doctor and financial class
- Analyze doctor/specialist contract compliance
- Use procedure codes to summarize medical record information by doctor, specialist, hospital, department, patient or insurance provider
- Review medical records for diagnosis coding deficiencies, incomplete records, incompatible coding or inappropriately billed charges
- Compare dates of service for outpatient care to dates of admission to hospital for compliance
- Look for duplicate billings and claims payment by patient, provider, date of service or amount

Manufacturing Companies

Manufacturing companies have many of the standard ledgers, and purchasing and payroll can be key concerns. However, the main business area is inventory.

There is normally a master or balances file that contains details of inventory holdings at a particular date. Costs may be held in a separate file. Transaction history can be particularly useful although file sizes are often quite large. Selling prices normally have to be picked up from a separate file.

Analyses

- Age stock by date of receipt
- Compute the number of months of stock for each item held based on either sales or purchases. Produce a summary of this information.
- Stratify balances by value bands
- Analyze usage and ordering to improve turnover
- Summarize products by group, location and type
- Create a report of products in order of profitability
- Reconcile physical counts to computed amounts
-

Calculations

- Cast (or total) the file, providing sub-totals of the categories of inventory
- Re-perform any calculations involved in arriving at the final stock quantities and values
- Re-perform material and labor cost calculations on assembled items

Exception Tests

- Identify and total stock held in excess of maximum and minimum stock levels
- Identify and total obsolete or damaged stock
- Identify any items with excessive or negligible selling or cost prices
- Identify differences arising from physical stock counts
- Test for movements with dates or reference numbers not in the correct period (cut off)
- Identify balances that include unusual items (e.g., adjustments)
- Identify work in progress that has been open for an unreasonable period
- Identify stocks acquired from group companies
- Isolate products with costs greater than retail price, with zero quantities or with zero prices

Gaps and Duplicates

- Test for missing stock ticket numbers
- Test for missing transaction numbers
- Identify duplicate stock items

Retail Applications

Retailers have many of the standard ledgers. Purchasing and payroll can be key concerns. However, the main business areas are sales and inventories. Retailers often have point-of-sale systems that collect large volumes of useful data that IDEA can analyze. The main tests on inventories are similar to manufacturing companies, with perhaps more emphasis on movement, margins and shrinkage.

Cash Disbursements

- Monitor cash disbursements for stores
- Track cash disbursements for contractor and vendor services
- Summarize cash disbursements by account, bank, group and vendor
-

Loss Prevention

- Compare "No Sale" transactions to cash-voided transactions by associate
- Identify stores with significant allowances
- Isolate duplicate return transactions
- Identify incomplete exchange transactions
- Look for check purchases and refunds within 15 days
- Find credit card purchases and refunds to different credit cards (same day)
- Identify potential fraudulent or improper transactions through selling price differences between stores

Purchase Order Management

- Reconcile order received to purchase order to identify shipments not ordered
- Extract pricing receipt quantity variations by vendor and purchase order
- Track scheduled receipt dates versus actual receipt dates
- Compare vendor performance by summarizing item delivery and quality
- Compare accrued payable to received items to reconcile to the General

Additional Tests Include:

- Analyze gross profit
- Identify items past their shelf life
- Compare holdings and inventory turnover per product line between stores
- Isolate price adjustment transactions

School Districts Applications

Schools have many of the standard ledgers. Payroll and Accounts Payable can be key concerns.

Asset Management

- Identify fully depreciated items and assets higher than replacement cost
- Recap asset values, in value order, by net or cost amount
- Recalculate expense and reserve amounts using replacement costs
- Compare useful lives of assets by category
- Extract assets with useful lives or depreciation rates beyond set norms
- Kickback or Conflict-of-Interest Schemes
- Look for vendor prices greater than the standard
- Identify price increases greater than acceptable percentages
- Check for continued purchases in spite of high rates or returns, rejections or credits
- Look for high-volume purchases from one vendor

Phantom Vendor Schemes

- Match names, addresses and phone numbers between employee and vendor files
- Check vendor addresses against marketing address lists

Policy Compliance

- Monitor the retention of various records and documents to ensure compliance with government (federal or state) and/or local regulations.
- Extract transactions by funding code, fiscal year and obligation control level and then compare to encumbrances
- Analyze rates and license fees on licenses to determine bylaw compliance
- Match vendor address files with employee address files to ensure compliance with vendor restrictions
- Extract purchase orders below the dollar amount requiring compliance with sealed bids
- Extract transactions of assets funded by federal grants to ensure compliance with grant requirements
- Sort contracts databases by contract or cost types to test compliance with government contract terms

Questionable Invoices

- Identify invoices without a valid purchase order
- Look for invoices from vendors not in the 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 day
- Find invoice payments issued on non-business days (e.g., Saturdays and Sundays)
- Identify multiple invoices at or just under approval cut-off levels

Service Industry Applications

Service industries have many of the standard ledgers. Payroll and Accounts Payable can be key concerns.

Cash Disbursements

- Extract cash disbursements by vendor/supplier for audit verification
- Summarize cash disbursements by account, bank, group and vendor
- Provide a complete audit trail for all disbursements by purchase order and vendor
- Generate a vendor cash activity summary for support in rebate negotiations

List Management

- Combine extracted data from financial reports for graphics presentations
- Automatically manage lists with select, extract, prints and count commands
- Merge audit verification letters with accounts and balances for external audits
- Generate multiple marketing mailings based on historical customer purchases
- Perform marketing tests with random name selection for promotional letters
- Create an auto-extract of activity data for direct transfer to spreadsheets

Sales Analysis

- Generate sales/profitability reports by sales representative, product and customer
- Recap product sales by regions, customers and category
- Extract all sales data for audit by customer, product and region
- Compare current product sales with booked sales for demand analysis/trends
- Compare ratios of current sales to open receivables (high–low; low–high).
- Summarize shipments by warehouse for product distribution analyses

Student Awards

Analyses

- Review student awards claimed, including the size and profile of awards
- Stratify student awards by age and identify any oddities

Calculations

- Recalculate student awards
- Calculate the length of time it takes to process student awards

Exception Tests

- Identify any missing information
- Identify any unusually large student awards

Gaps and Duplicates

- Test for duplicate student awards in a given year
- Test for duplicate details, names, addresses and account details

Matching and Comparing

- Match addresses to the property database and check that valid addresses have been given
- Match names to the payroll database and ensure that no employees are claiming student awards

IT and Facilities Audits

Auditing Computer Security

Normally on a security audit the various controls over access are evaluated, the types of journals and logs that are kept are considered, and the way the system is administered and monitored is assessed. To complement these theoretical evaluations, a much more substantive approach to checking security can be conducted using IDEA.

In overview, system level commands are used to create files containing data such as systems logs, access permissions and folder structures. These files are then imported into IDEA. Various tests can be carried out to determine if security is adequate.

There are three major areas in auditing and analyzing where IDEA can be used:

Access Rights

- Identify accounts with:
- Passwords not set or not required for access
- Passwords that are less than the recommended number of characters
- Access to key directories
- Supervisor status
- Equivalence to users with high level access
- Identify accounts that have not been used in the last six months
- Identify group memberships
- Age password changes

Files List Analysis

- Identify duplicate names
- Identify old files
- Analyze files by folder
- Analyze file sizes by owner
- Identify last access dates for old files
- Analyze databases and files by file name extension
- Identify all files without an owner (i.e., where user accounts have been removed from the system)
- Test for .COM, .EXE or .BAT files in areas where there should not be programs

System Logs

- Generate a list of accesses outside standard office hours
- Generate a list of accesses while users are on holiday/sick leave
- Identify users, particularly those with supervisory rights, who are logged in for long periods of time
- Perform analysis by user—identify those with higher use than might reasonably be expected
- Summarize by network address to identify:
- All users with their normal PCs
- All PCs with their normal users
- Users on unusual PCs
- Summarize charges by user to determine resource utilization
- Analyze utilization by period (i.e., daily, weekly, monthly) to show historical trends

Auditing Email Logs

Email logs generally contain information such as the addresses of the sender and the recipient, the subject title, the date and time of transmission, the size of the file and the service provider.

- Identify the total length of time spent on emails (receiving and responding) by the organization as a whole, by individuals and by month
- Analyze internal and external emails
- Summarize emails by service provider
- Summarize and sort numbers of emails by employee
- Isolate, summarize and examine personal emails
- Stratify emails by time and examine any unusual activity (e.g., lunchtime, weekends, bank holidays)
- Stratify emails by size
- Analyze file attachments by size and by type
- Analyze incoming emails and identify common domain addresses
- Calculate and sort the length of time employees spent on email in a given time period
- Match emails with a list of employees and extract any emails that were sent by non-employees
- Analyze any dormant accounts
- Identify non-work related emails by searching for specific words in the subject title (e.g., weekend)

Auditing Firewalls

Many organizations implement a range of controls, including installing sophisticated firewalls to eliminate the risk of unauthorized access to their networks, especially via the Internet.

Firewall logs record all incoming and outgoing transmissions on a network. It is not unusual to record hundreds of thousands of activities in a single day. IDEA can be used to analyze the logs in order to identify trends and exceptional items to follow up on.

Firewalls generally contain information such as the source and destination IP addresses, the date and time of transmission, the action by the firewall on receipt of the transmission, the service type and the service port accessed.

- Summarize the type of service being requested or being used
- Identify the most common IP addresses attempting to access the network
- Summarize actions upon connection (i.e., control, accept or drop)
- Analyze trends to determine the most common access times and to identify requests at unusual times
- Extract all dropped transmissions
- Identify potential attacks by looking for a pre-defined sequence of port scans (e.g., ISS attacks or searches for ports that can be used)

Auditing Telephone Logs/Accounts

Telephone logs/accounts can be audited as part of a Value for Money exercise. However, testing has also proven to be very fruitful when used in fraud investigations (e.g., to prove/identify supplier collusion).

If a call logging system is used, the log file can probably be accessed in electronic format either using a copy of the log file (if in a simple format) or through printing the log report to disk and then importing it to IDEA using the Print Report option from the Import Assistant.

Electronic versions of telephone accounts can be obtained from most telephone companies, usually on diskette (but there may be a charge).

- Verify the total cost of the calls and the number of calls to the total account charge
- Summarize the number of calls and the cost by external telephone number
- Stratify time and costs for both the detailed and the summarized files
- Extract high-value calls on both the detailed and the summary files
- Extract high-frequency call numbers
- Extract and analyze overseas calls
- Extract calls to premium service numbers (e.g., chat-lines, speaking clocks and folder enquiries)
- Extract calls made outside normal working hours (e.g., before 7:00 a.m. and after 8:00 p.m.)
- Extract calls made on weekends (using @Dow)
- Extract calls to "blacklisted" numbers (if a list of such numbers is kept, the items can be identified using the Join Databases task with the Equal Keys only option)
- Compare/match monthly files to identify high-value "new" call numbers
- Append and analyze monthly or quarterly files over longer periods

Additional Tests for a Call Logging System that Identifies the Caller

- Summarize time and cost by caller
- Extract exceptions by caller
- Extract and analyze fax and modem calls
- Extract high-value calls made from unusual numbers (i.e., conference/meeting rooms)

Housing Rents

A specific set of tests for those organizations with rent ledgers include:

Analyses

- Analytical review of rents received, including the size and profile of rents
- Age analysis and profile of arrears
- Proof of year-end arrears listing
- Estimate/assess the adequacy of provision against outstanding rents

Calculations

- Reconcile housing rents received to ledger accounts, including voids, service charges and garages
- Calculate the length of time it takes to process claims and examine any oddities

Exception Tests

- Identify unlet and void properties
- Identify any records with missing information (e.g., missing claim reference)

Gaps and Duplicates

- Isolate duplicate tenant names and addresses
- Identify duplicate rent accounts
- Isolate duplicate claims

Matching and Comparing

- Check the validity of property details by matching with the details in the property database

Other Audits

Distribution/Service Provide Applications

Distribution/service companies have many of the standard ledgers, payroll and Accounts Payable files, which can be key concerns.

List Management

- Combine extracted data from financial reports for presentations
- Automatically manage lists with select, extract, prints and count commands
- Merge audit verification letters with accounts and balances for external audit
- Generate multiple marketing mailings based on historical customer purchases
- Perform marketing tests with random name selections for promotional letters
- Create an auto-extract of activity data for direct transfer to spreadsheets

Sales Analysis

- Generate sales/profitability reports by sales representative, product and customer
- Recap product sales by region, customer and category
- Identify high sales volumes by region, customer and category
- Extract all sales data for audit by customer, product and region
- Compare ratios of current sales to open receivables (high–low; low–high)
- Summarize shipments by warehouse for product distribution analysis

Sales Order Control

- Report on the correlation between items shipped and items ordered
- Analyze open orders and open invoices by customer for credit control
- Isolate detail and average backlogs by customer, item and location
- Reconcile booked items to inventory reserved (on hold) items
- Control profits by calculating line item margins before shipment
- Analyze product demand by summarizing products ordered by due date

Service Management

- Create real-time service tracking reports in any format to manage fieldwork
- Coordinate service personnel schedules to maximize performance in real time
- Quickly recap the routes and times of service calls by employee and area
- Compare arrival and service times for field service representatives
- Calculate the cost of service by call for labor, materials and transportation
- Compare service report time to time-card hours from payroll

Inventory and Stock

Inventory and stock can vary in volume and cost within organizations.

Analysis

- Reconcile physical counts to computed amounts
- Analyze usage and ordering to improve turnover
- Analyze high-value transactions
- Summarize and stratify turnover by stock item
- Summarize stock on-hand by group, location, type, etc.
- Create custom reports on stock and high-value balances
- Review product reordering volumes by item, warehouse and vendor
- Summarize products by group, location, type, etc.
- Summarize and stratify turnover by stock item in any order
- Age inventory (e.g., by date of receipt)

Calculations

- Report on products in order of profitability
- Statistically analyze usage and ordering to improve turnover
- Test clerical accuracy of totals and extensions
- Check product reordering volume by item, warehouse and vendor
- Determine the percentage change in sales, price and/or cost levels by product/vendor
- Assess the financial viability of LIFO versus FIFO management

Exception Tests

- Identify surplus obsolete/damaged inventory by sorted turnover analysis
- Identify differences between standard costs and actual costs
- Identify stock acquired from group companies
- Segregate variances from standard pricing in amount order
- Isolate stock lines/products with cost greater than retail price, with zero/negative quantities or with zero/negative prices
- Isolate items where stock exceeds maximum stock levels
- Select items from perpetual stock for test reconciliation

Gaps and Duplicates

- Test for duplicate parts, item numbers, prices or descriptions

Matching and Comparing

- Compare cost to retail price to look for pricing discrepancies
- Compare the value of physical counts to general ledger value

Sampling

- Attribute Sampling, Random Sampling or Stratified Random Sampling for physical verification or checking additions

Management Accounting

IDEA is generally considered an audit tool. However, it is often used by management accountants for reporting and ad hoc investigations. Many systems come with their own report generators or query tools, but sometimes they are limited in their functionality, are difficult to use, or in some cases do not exist. Most work with IDEA is analysis or exception testing. Some common uses are noted below:

- Calculate ratios on a line-by-line or summary basis
- Summarize items by customer or supplier followed by a ranking in order of value
- Calculate response days (e.g., sales order to invoice), stratify the results and create an exception report
- Profile the population (e.g., Accounts Receivables and Inventory) in value bands
- Remove duplication of marketing databases
- Search for payments to individuals (e.g., for tax returns)
- Calculate the inventory provision.
- Identify uncosted items
- Analyze the profitability of each product line or grouping

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