



Executives today are more challenged than ever to make quick, well-informed decisions that address growing business complexity and increasing regulatory requirements. They must closely examine their core business transactions to uncover unforeseen risk, potential control breaches, and opportunities for operational improvement. More powerful and timely business analytics and reporting are needed to produce reliable results and drive confident decision-making.

Arbutus Analytics Continuous Controls Monitoring solutions take the ad hoc, point-in-time analysis and interrogations of data performed during traditional audit processes, and incorporate additional sophisticated analytics to embed them in organisation's day-to-day operations. They independently and continuously check and validate all transactional data against control parameters, business rules, and historical data trends to identify anomalies. Business unit managers and financial executives can be quickly notified of significant control breaches. Other suspicious activities are captured and summarised for further investigation and follow-up.

Early detection of potential indicators of fraud, error, and operational inefficiencies prevents problems from escalating and improves overall confidence in organisational controls. This provides management with better visibility into the performance of key business processes, thereby reducing risks of financial reporting restatements and misstatements.

Arbutus Analytics solutions are based on continuous monitoring technology that can rapidly access and analyse unlimited volumes of transactional data from disparate systems, enabling seamless data extractions and aggregations from production systems, databases, spreadsheets, and flat files, among others. Data from all sources is normalised to enable integrated analysis while maintaining data integrity. The powerful Arbutus Analytic engine is designed specifically for continuous controls monitoring, built on a foundation of activity-specific commands used to identify control and weaknesses and potential business risks, enabling sound decisions and faster response to organisational and market changes.

Many business processes are common to nearly all organisations. They are part of the system that sustains the day-to-day vitality and integrity of businesses, governments, and other concerns. Many of these processes are complex, highly automated, and heavily data-reliant. Their built-in controls are often rudimentary so they represent strong candidates for control monitoring with data analytics.

## Purchase Card

Managing PCards and their associated transactions is a field in its own right.

Duplicate cards, post-termination purchases, and favoured vendors are just some of the tests that should regularly be run on this data

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| <b>Cardholders / Card Status</b>       | <b>Unauthorised Purchase Cards</b>             | To ensure all purchase cards are Authorised by validating all purchase cards with authorised personnel. Identify cards created by unauthorised personnel.  |
| <b>Cardholders / Card Status</b>       | <b>Invalid Employees</b>                       | To review all affiliate cardholder transactions. To Identify all transactions where the employee ID does not exist in the Employee File.   |
| <b>Cardholders / Card Status</b>       | <b>Invalid Active Cards</b>                    | To ensure all cards are issued to active employees. Identify all cards belonging to employees with a non-active status in the Employee File. Results should display whether card has transactions or not, however if there are transactions during this period list those transactions in the results.   |
| <b>Cardholders / Card Status</b>       | <b>Duplicate Cards – Name (or Employee ID)</b> | Match To identify all active employees with multiple cards. Identify all procurement card transactions from cards where the cardholder has more than one procurement card based on exact or similar Name matching (or Employee ID matching).   |
| <b>Cardholders / Card Status</b>       | <b>Duplicate Cards – Address Match</b>         | To Identify all active employees with multiple cards. Identify all procurement card transactions from cards where the cardholder has more than one procurement card based on exact or similar Address matching.  |
| <b>Cardholders / Card Status</b>       | <b>Validate Card Limit Changes</b>             | To ensure all additions and modifications to Card Master File are authorised and valid. Flag cards with a significant limit change.  |
| <b>Cardholders / Card Status</b>       | <b>Inactive (Removed/Stolen) Cards</b>         | To ensure card transactions are valid and authorised. Identify all transactions for de-activated, lost, or stolen cards (inactive).  |
| <b>Merchant / Conflict of Interest</b> | <b>Unauthorised Merchants</b>                  | To ensure all transactions are to approved MCCs (Unauthorised Merchants Audit). To Identify all transactions where the MCC is in the Restricted Merchant MCC list.   |
| <b>Merchant / Conflict of Interest</b> | <b>Debarred Merchants - GSA Name Match</b>     | To ensure all Merchants are authorised and valid. Identify all procurement card transactions where the same or similar Merchant Name is in the GSA list of debarred merchants. Matches do not include words in the Exclude Word list and only matches with a percentage greater than the Percentage Match will be reported.  |
| <b>Merchant / Conflict of Interest</b> | <b>Debarred Merchants - GSA Address Match</b>  | To ensure all merchants are authorised and valid. An address match is returned if the numeric values for street address and zip code are the same, or, in the absence of numeric values in the address, if the character values are the same.  |
| <b>Merchant / Conflict of Interest</b> | <b>Specific Merchant Audits of Interest</b>    | To review all transactions to specific merchants. Identify all transactions where the Merchant ID is included in the Watched Merchant ID list.   |
| <b>Merchant / Conflict of Interest</b> | <b>Cardholder and Merchant Name Match</b>      | To ensure all cardholders are not merchants (Conflict of Interest) To Identify all transactions where any Cardholder Last Name is included in any Merchant Name.   |
| <b>Merchant / Conflict of Interest</b> | <b>Creator vs Approver - SOD</b>               | To ensure all additions and modifications to Card Master File are authorised and valid. Identify cards where the creator and approver are the same person.   |
| <b>Transactions</b>                    | <b>Split Transactions</b>                      | To ensure transactions are authorised and in compliance with transaction limits. Transactions are suspected to be split if there are multiple card transactions (2 or more),<br><br>Used by the same cardholder;<br>For the same Merchant;<br>Where the transaction date of those transactions happened within the <<number of days>> specified;<br>Where the total of those transactions exceeds or is within the <<Percent Below Threshold >> of the card's single purchase limit. |

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| <b>Transactions</b> | <b>Single Card Transaction Limit</b>                             | To ensure all transactions are considered within the transactions limits and are complete and accurate. This analytic identifies purchasing card transactions exceeding or is within the <<Percent Below Threshold >> of the card's single purchase limit.   |
| <b>Transactions</b> | <b>Transaction Limits - Monthly</b>                              | To ensure transactions are authorised and in compliance with transaction limits. Identify all procurement card transactions where the accumulated Monthly Transactions Amount was greater than the Cardholder's Monthly Transaction Limit.   |
| <b>Transactions</b> | <b>Transaction Validity - Restricted Items</b>                   | To ensure all transactions are for authorised purposes. Identify all procurement card transactions using words from the Restricted Word List anywhere in the Transaction Description entered by the Employee that indicates a potentially unauthorised purchase.   |
| <b>Transactions</b> | <b>Transaction Validity – Declined Transactions</b>              | To ensure transactions are for authorised purposes. Identify cardholders with excessive declined transactions.   |
| <b>Transactions</b> | <b>Transaction Validity – Disputed Transactions</b>              | To ensure all transactions are for authorised purposes. Identify cardholders with excessive disputed transactions.   |
| <b>Transactions</b> | <b>Unauthorised Transactions - Weekend and Holiday</b>           | To review all transactions incurred on weekend and/or holidays for possible personal purchase (Suspicious Transaction Dates). To Identify all transactions incurred on weekends or holidays.   |
| <b>Transactions</b> | <b>Unusual Transactions - Even Dollar Transactions</b>           | To ensure all transactions are for valid or authorised purposes and to review all transactions for possible gift card purchases. Identify all purchase cards with even dollar transactions evenly divisible by the <<Even Dollar Divisor>> and with a value greater than the <<Even Dollar Threshold Amount>>. Group the transactions by cardholder name and compare the number of transactions per cardholder to the <<Minimum Transaction Count>>. Transaction |
| <b>Transactions</b> | <b>Unusual Transactions - Small Dollar Transactions</b>          | To ensure all transactions are for complete and valid purposes. Identify all purchase card transactions less than the <<Small Dollar Threshold Amount>> occurring more than <<Minimum Transaction Count>> times during the analysis period.  |
| <b>Transactions</b> | <b>Suspicious Transactions - Cardholder Watch List</b>           | To ensure all transactions are accurate and valid. Identify all procurement card transactions for cardholders included in the Watched Card Numbers list.   |
| <b>Transactions</b> | <b>Duplicate Transactions – Same Merchant Same Amount</b>        | To ensure all transactions are accurate and have been accounted for only once. Identify two or more transactions where the card, merchant, and amount are the same.  |
| <b>Transactions</b> | <b>Duplicate Transactions – Same Merchant Similar Amount</b>     | To ensure all transactions are accurate and have been accounted for only once. During the Investigation Period, identify all purchase card transactions made to the same Merchant with similar Transaction Amounts within a user-specified Percentage Variance of each other.  |
| <b>Transactions</b> | <b>Unusual Transactions</b>                                      | Convenience Checks To ensure all transactions are accurate and for valid purposes. Identify convenience check transactions exceeding a threshold.  |
| <b>Transactions</b> | <b>Suspicious Transactions</b>                                   | Checks To ensure all transactions are accurate and for valid purposes. Identify convenience checks with the cardholder's name included in the payee name.  |
| <b>Transactions</b> | <b>Multiple Card Transactions (split amount, multiple cards)</b> | To ensure all transactions are within authorised transaction limits. Identify instances where 2 or more cards from the same Organization are used at the same Merchant for 2 or more transactions and the total of those transactions exceeds the purchasing employees' lowest single purchase limit.  |
| <b>Transactions</b> | <b>Multiple Card Transactions (same amount, multiple cards)</b>  | To ensure all transactions are accurate and have been accounted for only once. Identify all procurement card transactions with duplicate Transaction Amounts made on SAME or separate procurement cards to the same Merchant and for the same Amount.  |

## Payroll

Analyse and Manage Payroll Employee-vendor matches, variable compensation, phantom employees, and commission validation need to be independently tested.

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| <b>Accuracy</b>      | <b>Time Entry vs. Expected Hours (Excess Hours)</b> | To ensure all time entered in system reflects expected time worked. Identify time and attendance transaction variances where Actual Time Worked exceeds Scheduled Time Worked based on a Percentage Variance on scheduled hours per employee.   |
| <b>Accuracy</b>      | <b>Time Differentials</b>                           | To ensure all booked time is allocated to the appropriate employee accurately. Identify payroll transactions where employee hours entered is equal to zero.   |
| <b>Accuracy</b>      | <b>Overtime Threshold</b>                           | To ensure all overtime transactions are valid. Identify payroll transactions where the overtime hours equals or exceeds a Percentage Variance based on standard hours.  |
| <b>Accuracy</b>      | <b>Unauthorised Commissions</b>                     | To ensure all commissions authorised and valid and adhere with company policies and procedures. Identify commissions to ineligible employees.   |
| <b>Accuracy</b>      | <b>Invalid rate</b>                                 | To ensure all payroll transactions in the system are consistent with company policy & procedures. Using in-house reports, check employee's hourly rate prior to running payroll and verify that payroll processing paid same hourly rate during processing. Assure that employee's hourly rate of pay is true to the assigned dollars |
| <b>Accuracy</b>      | <b>Service Provider - 2 Way Match</b>               | To ensure all payroll payments are valid. Identify payments where the amount does not match the payroll amount.   |
| <b>Data Validity</b> | <b>Data Validity – Employee</b>                     | To ensure payroll validity by identifying employee transactions where critical data elements deviate from expected values and formats. Identify payroll transactions where critical employee master data is either missing from or incorrectly formatted in ADP.  |
| <b>Existence</b>     | <b>Termination - New Hires</b>                      | To ensure all termination calculations are to valid employees. Identify cases where an employee is terminated within "X" days of their hire date.   |
| <b>Existence</b>     | <b>Suspicious Payments - Phantom Employees</b>      | To ensure all payroll payments are valid. Identify payments where the Employee ID does not exist in Human Resource data.  |
| <b>Compliance</b>    | <b>OFAC Employee Match</b>                          | To ensure no employees are entered that are listed on the OFAC terrorist watch list. Identify payroll transactions to employees that are identified on the OFAC terrorist list.   |
| <b>Compliance</b>    | <b>GSA - EPLS Employee Match</b>                    | To ensure no employees are entered that are listed on the GSA-EPLS list. Identify payroll transactions to employees that are identified on the GSA-EPLS list based on name matches.   |
| <b>Timeliness</b>    | <b>Payroll Cut Off Dates</b>                        | To ensure all payroll entries are captured in the appropriate pay cycle. Identify payroll transactions where the adjustment date is "X" days after the payroll cut off.   |
| <b>Timeliness</b>    | <b>Suspicious Payments - Employee Start Date</b>    | To ensure all payroll payments are valid. Identify payment transactions in the last 4 weeks where the Employee hire date is more recent (later) than the pay cycle date.  |
| <b>Timeliness</b>    | <b>Terminated Employees - Termination Date</b>      | To ensure only active employees receive payroll and benefits. Identify payroll transactions where the Payroll Date is X Number of Days or more after the Effective Termination Date.  |
| <b>Timeliness</b>    | <b>Terminated Employees - Employee Status</b>       | To ensure only active employees receive payroll and benefits. Identify payroll transactions, where terminated employees are paid X Number of Days or more days past their termination date.   |

## General Ledger

Journal entries, particularly manual journal entries, can be a source of significant risk.

There are many tests that can quickly identify high-risk JEs and risk-score them.

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| <b>Duplicates</b>     | <b>Duplicate GL Accounts</b>                     | To ensure accuracy and validity of journal entries that are entered in the general ledger accounts and identify duplicate GL accounts based on same account. Identify all journal entries posted to GL accounts that begin with the same GL account number (first digit), and same GL account name.  |
| <b>Duplicates</b>     | <b>Duplicate JE's</b>                            | To ensure accuracy and validity of journal entries created in the Posted to avoid duplicate entries. In the previous period, identify all journal entries line items to the same GL account for the same amount with the different journal entry Numbers.  |
| <b>Duplicates</b>     | <b>Duplicate JE's</b>                            | To ensure accuracy and validity of journal entries created in the daily to avoid duplicate entries. In the previous period, identify all journal entries with the same journal entry Number for the same amount and same Location.   |
| <b>Split Entries</b>  | <b>Single JE Multiple Accounts</b>               | To ensure accuracy and validity of journal entries allocation to general ledger accounts. In the previous period, identify all journal entries split across multiple GL accounts and where the accumulated amounts exceed the minimum threshold amount.  |
| <b>Split Entries</b>  | <b>Multiple JE's Same Account</b>                | To ensure accuracy and validity of journal entries allocation to general ledger accounts. In the previous period, identify all journal entries entered multiple times to the same account and same location where the accumulated amounts exceed the minimum threshold amount.   |
| <b>Closings</b>       | <b>JE Cut Off</b>                                | To ensure authorization and validity of journal entries entered close to period end closing of the GL. On a quarterly basis, identify all journal entries over the minimum threshold amount where the current entry date (JE create date) is within X days before closing and within 4 days after the period end, with the effective date in the previous quarter. |
| <b>Closings</b>       | <b>JE Cut Off</b>                                | To ensure authorization and validity of journal entries entered close to period end closing of the GL. (Monthly/quarterly/yearly) Identify journal entries entered X days prior to period end that have been re-opened and exceed a dollar threshold.  |
| <b>Authorizations</b> | <b>Unauthorised JE's</b>                         | To ensure only authorised individuals have access to create journal entries. List all journal entries where the user id of the individual creating the journal entry is not included in the authorised employee table of journal entry creators.   |
| <b>Authorizations</b> | <b>Restricted Users</b>                          | To ensure only authorised individuals have access to create journal entries. List all journal entries where the user id of the individual creating the journal entry is not included in the authorised employee table of journal entry creators.   |
| <b>Authorizations</b> | <b>Single JE's - Approval Threshold</b>          | To ensure only authorised individuals have access to create journal entries. List all journal entries where the user id of the individual creating the journal entry is included in the restricted employee table of journal entry creators.   |
| <b>Authorizations</b> | <b>Split Journal Entries- Approval Threshold</b> | To ensure authorization and validity of journal entries based on approval limits defined in control policies and procedures. Identify cases where the same person splits a larger entry into multiple smaller entries to avoid exceeding their approval limit.   |
| <b>Authorizations</b> | <b>Create JE Vs Approve JE - SOD</b>             | To ensure authorization and validity of journal entries to identify any conflicts in segregation of duties. Identify entries created and approved by the same person.  |
| <b>Authorizations</b> | <b>Create JE Vs Create Account - SOD</b>         | To ensure authorization and validity of journal entries to identify any conflicts in segregation of duties. Identify entries where the person creating the entry also created the account.   |

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| <b>Authorizations</b> | <b>JE's - Weekends &amp; Holidays</b>                          | To ensure accuracy and validity of journal entries during weekends and holidays. In the previous period, identify all journal entries created on weekends or holidays that may indicate unusual activities. These dates are defined by the fixed holidays, variable holidays and unauthorised weekday parameters.   |
| <b>Key Accounts</b>   | <b>Adjustments to Dormant Accounts</b>                         | To ensure authorization and validity of journal entries to dormant accounts. Identify all journal entries made to GL accounts where the different between the current entry date and the date of the last journal entry to the same account is greater than the dormant period.   |
| <b>Key Accounts</b>   | <b>JE's - New GL Accounts</b>                                  | To ensure accuracy and validity of journal entries entered to new accounts incorporated in the general ledger by monitoring the transactions made to newly created GL accounts. In the previous period, identify all journal entries greater than the minimum threshold amount made to GL accounts where the GL account create date falls within the tested period.   |
| <b>Key Accounts</b>   | <b>Journal Entries to Temporary Accounts</b>                   | To ensure accuracy and validity of journal entries entered to temporary general ledger accounts. Identify material journal entries entered as adjustments posted to temporary accounts shortly before closing a period.   |
| <b>Key Accounts</b>   | <b>Outstanding Journal Entries to Temporary Accounts</b>       | To ensure accuracy and validity of journal entries entered to temporary general ledger accounts. Identify material journal entries entered into temporary accounts that have not been allocated to an appropriate GL account within X days.   |
| <b>Key Accounts</b>   | <b>Outstanding Journal Entries to Accrual Accounts</b>         | To ensure accuracy and validity of journal entries entered to accrual accounts in the general ledger accounts. Identify material outstanding journal entries entered in the accrual's general ledger account that have not been allocated to the appropriate payable sub ledger accounts within X days of posting.  |
| <b>Key Accounts</b>   | <b>Outstanding Journal Entries to Deferred Income Accounts</b> | To ensure accuracy and validity of journal entries entered to deferred income I accounts in the general ledger accounts. Identify material outstanding journal entries entered in the deferred income general ledger account that have not been allocated to the appropriate payable sub ledger account within X days of posting.   |
| <b>Keywords</b>       | <b>JE's - Key Word Test</b>                                    | To ensure validity of journal entries created in the daily that may indicate a potential control breakdown. Identify all journal entries where the restricted word is found anywhere in the journal entry description field that may indicate an invalid or suspicious entry. Also identify where the JE description is less than the minimum description length.   |
| <b>Even Amounts</b>   | <b>Unusual JE's - Even Dollar Transactions</b>                 | To ensure accuracy and validity of journal entries with even dollar amounts. In the previous period, identify all journal entries with even dollar transactions grouped by user ID based on the even dollar divisor and over the minimum threshold amount. The even dollar divisor defines the even dollar amount each transaction must be divisible by.  |
| <b>Reversals</b>      | <b>Frequently Reversed JE's</b>                                | To ensure accuracy and validity of journal entries that reverse adjustments entered to general ledger accounts. Within a specific Investigation period based on the effective date, identify all journal entries that have matching DRs and CRs to the same GL account, with the same amount and same location that have been reversed multiple times over the number of journal entry reversals threshold. |
| <b>Data Quality</b>   | <b>JE Critical Data Fields</b>                                 | To ensure validity of journal entries where critical data elements deviate from expected values and formats. List all journal entries where critical data elements are either blank or deviate from expected values and formats.  |

## Travel & Expense

Although these expenses may not be financially significant, many organisations continue to analyse them to maintain "tone at the top".

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| <b>Duplicates</b>     | <b>Merchant Receipt Sequence</b>   | To ensure all transactions are accurate and have been accounted for only once. Identify T&E transactions where the increments between receipt numbers for the same merchant occur consecutively within a specified range [gap range] and have a transaction date within the investigation period.   |
| <b>Duplicates</b>     | <b>Suspect Reimbursement Claims</b>  | To ensure all transactions are accurate and have been accounted for only once. Identify T&E transactions from the same employee who has claimed for both meals or group meals and per diem expense (or for both gas and mileage expense).   |
| <b>Duplicates</b>     | <b>Duplicate TNE Cards - Name Match</b>  | To identify all active employees with multiple cards. Identify all T&E cards with transactions where the cardholder has more than one T&E card in the card master file based on exact or similar name matching.   |
| <b>Duplicates</b>     | <b>Duplicate Reimbursement Claims (Different trips)</b>                                | To ensure all transactions are accurate and have been accounted for only once. Identify all T&E transactions with duplicate transaction amounts to the same expense type from the same employee for different trips. [same employee, same expense, same amount, different trip].  |
| <b>Duplicates</b>     | <b>Duplicate Reimbursement Claims (Same trip)</b>                                      | To ensure all transactions are accurate and have been accounted for only once. Identify all T&E transactions with duplicate transactions based on to the same expense type, with a similar transaction amount within a percentage variance and incurred on the same day by the same employee for same trip. [same employee, same trip, same expense, similar amount]. |
| <b>Duplicates</b>     | <b>Duplicate Transactions - Card Expense &amp; Reimbursement Claim (Same Employee)</b> | To ensure all transactions are accurate and have been accounted for only once. During the investigation period, identify all T&E transactions with duplicate transaction amounts to the same expense type from the same employee, charged as both a T&E card expense and a reimbursement claim in the expense.  |
| <b>Duplicates</b>     | <b>Duplicate Attendee Claim</b>  | To ensure all transactions are accurate and have been accounted for only once. During the investigation period, identify all T&E transactions with duplicate transaction amounts to the same merchant ID, charged on the same date claimed by two different employees, with one matching the attendee name.   |
| <b>Authorizations</b> | <b>Unauthorised TNE Cards</b>  | To ensure authorised personnel issue all T&E cards. Identify all T&E transactions where the employee who created the T&E card is not listed in the authorised employee list.  |
| <b>Authorizations</b> | <b>Validate Card Limit Changes</b>   | To ensure all additions and modifications to the T&E card master file are authorised and valid. Identify all T&E daily card transactions where the monthly card limit for the employee has changed by at least the specified credit limit tolerance.  |
| <b>Authorizations</b> | <b>Unauthorised Merchants</b>  | To ensure all merchants are authorised and valid. Identify all T&E transactions where the MCC is included in the restricted merchant MCC list.  |
| <b>Authorizations</b> | <b>Creator vs Approver - SOD</b>   | To ensure all additions and modifications to the card master file are authorised and valid. Identify all T&E card transactions where the cardholder was created and approved by the same individual in the card master file.  |
| <b>Authorizations</b> | <b>Invalid Transactions - Restricted Items</b>   | To ensure all transactions are for authorised purposes. Identify all T&E transactions using words from the restricted word list anywhere in the transaction description and business purpose field that indicates a potentially unauthorised purchase.  |
| <b>Authorizations</b> | <b>Submitter vs Approver - SOD</b>   | To ensure transaction authorization and validity by identifying expense report transactions without appropriate segregation of duties controls in place. Identify all T&E transactions where the employee who created the expense claim is the same employee who approved the expense claim.  |

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| <b>Data Quality</b>         | <b>Expense Critical Data Fields</b>  | To ensure validity of T&E card transactions where critical data elements deviate from expected values and formats. For each T&E transaction, test that critical transactional data is present. For example: check for blanks, specified formats, or excluded values.   |
| <b>Compliance</b>           | <b>Debarred Merchants - Name Match</b>   | To ensure all merchants are authorised and valid. Identify all T&E transaction where the same or similar merchant name is in the GSA list of debarred merchants. Matches do not include words in the excluded word list and only matches with a percentage greater than the specified percentage match parameter will be reported.                                       |
| <b>Compliance</b>           | <b>Debarred Merchants - Address Match</b>                                      | To ensure all merchants are authorised and valid. Identify all T&E transactions where the same or similar merchant address has been included in the GSA list of debarred merchants.  |
| <b>Compliance</b>           | <b>Prohibited Merchants</b>  | To ensure all merchants are authorised and valid. Identify transactions made to merchants listed in the OFAC watch list.   |
| <b>Compliance</b>           | <b>Excessive Claims - No Receipts</b>  | To ensure all transactions are for valid and authorised purposes. Identify expense report transactions where no receipt has been submitted that fall over the receipt threshold amount or the receipt count threshold.   |
| <b>Compliance</b>           | <b>**Possibility of large number of false positives. Suspect Expense Dates</b> | To ensure all transactions are for valid and authorised purposes. Identify T&E transactions where the transaction date occurred on a weekend or holiday as defined by the variable holiday, unauthorised weekday, and fixed holiday parameters.  |
| <b>Timeliness</b>           | <b>Stale Claims Age transaction date and expense report.</b>                   | Identify all T&E transactions where the difference between the date the expense was incurred and the date the expense claim was submitted is greater than the aging period.  |
| <b>Timeliness</b>           | <b>Aging Expense Report</b>  | To ensure all transactions are accurate and have been submitted on a timely basis. Identify all T&E transactions where the difference between the expense report date and the posting date is greater than the x [aging period] number of days based on the company policy for submission of expense reports.  |
| <b>Limits</b>               | <b>Single Transaction Limit</b>  | To ensure transactions are authorised and in compliance with transaction limits. Identify all T&E transactions where the transaction amount was above or below a percentage threshold of the single transaction.   |
| <b>Limits</b>               | <b>Split Transactions</b>  | To ensure transactions are authorised and in compliance with transaction limits. Identify instances where a card is used at the same merchant two or more times, and the total of those transactions exceed or is within the specified percentage threshold parameter of the single purchase limit.  |
| <b>Limits</b>               | <b>Claim Transaction Limits - Monthly</b>                                      | To ensure transactions are authorised and in compliance with transaction limits. Identify all T&E transactions where the accumulated monthly transactions amount was greater than the authorised monthly limit parameter.  |
| <b>Limits</b>               | <b>Transaction Validity - Declined Transactions</b>                            | To ensure all transactions are for authorised purposes. During the investigation period, identify all purchase cards with transactions that have been declined. Total the count and amount of transactions per card. Report on cards that exceed the declined threshold count or the declined threshold amount.  |
| <b>Limits</b>               | <b>Transaction Validity - Disputed Transactions</b>                            | To ensure all transactions are for authorised purposes. During the investigation period, identify all purchase cards with transactions that have been disputed. Total the count and amount of transactions per card. Report on cards that exceed the disputed threshold count or disputed threshold amount.  |
| <b>Limits</b>               | <b>Excessive Claims - Expense Type</b>   | To ensure all transactions are for authorised purposes. Identify employees who have a number of expense claims per day greater than the acceptable maximum number of claims by expense type by amount or count. Total the count and amount of transactions per employee per day and report on cards that exceed the maximum expense count or the maximum expense amount. |
| <b>Conflict of Interest</b> | <b>Merchant Employee Name Match</b>  | To ensure all T&E expenses are valid. Identify transactions where the employee last name is included in the merchant name.   |

## Order to Cash

Order management, credit, fulfilment and invoicing need to be optimized for organizations to realize revenues as efficiently as possible.

Identifying open items and clients with high adjustment rates can be readily detected with an effective data analysis application.

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| <b>Collection</b> | <b>AR Open Item and Sales Price Review - Test 1</b> | <p>Test 1 entails the profiling of unpaid invoice data by invoice date. Aging process by invoice date, and report number of invoices outstanding, and totals, under the following categories:</p> <ul style="list-style-type: none"> <li>&lt; 0 days</li> <li>0 – 30 days</li> <li>31 – 60 days</li> <li>61 – 90 days</li> <li>91 – 120 days</li> <li>121 – 180 days</li> <li>&gt;180 days</li> </ul>   |
| <b>Collection</b> | <b>AR Open Item and Sales Price Review - Test 2</b> | <p>Test 2 entails the profiling of unpaid invoice data by due date. Aging process by due date, and report number of invoices outstanding, and totals, under the following categories:</p> <ul style="list-style-type: none"> <li>&lt; 0 days</li> <li>0 – 30 days</li> <li>31 – 60 days</li> <li>61 – 90 days</li> <li>91 – 120 days</li> <li>121 – 180 days</li> <li>&gt;180 days</li> </ul>   |
| <b>Collection</b> | <b>AR Open Item and Sales Price Review - Test 3</b> | <p>Test 3 entails the examination of sale price data to identify possible unauthorised customer discounts. Profile sales data and identify unit price variances by product code. Segregate transactions where standard deviation exceeds 0 and profile the results by client and product. The test generates two outputs: first table provides detailed transactions tagged with price variances; second table provides a summary of items found with variances by product.</p>   |
| <b>Collection</b> | <b>AR Client Master Review</b>                      | <p>The objective of this analytic is to examine the customer credit master details to identify possible weaknesses in the credit review process and its respective controls. This test entails an examination of AR client master data to identify potential credit vulnerability – credit limits, credit review date. Profile AR client master data by credit limits and credit review dates.</p>  |
| <b>Collection</b> | <b>AR Duplicate Clients Review</b>                  | <p>The objective of this analytic is to identify instances where a customer might be established in the AR system under various business identities. Entails the examination of AR client data to identify credit vulnerability – identify same businesses under different names. Duplicate process under various scenarios – address detail and name. Three tables are generated to present the results of the analysis.</p>   |
| <b>Collection</b> | <b>AR Billing Review</b>                            | <p>The objective of this analytic is to monitor the AR transactions, specifically billing and adjustment type transactions, per customer, to identify clients with a high adjustment ratio. This information can help uncover the manipulation of client records, and ultimately assets such as inventory.</p> <p>This analytic is designed to examine the AR transactions file (billing and adjustments) with the objective of profiling clients who appear to have a high number of adjustments, write-offs when compared to their charges.</p> |

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|----------------------|--|---|
| <b>Cancellations</b> | <b>SM Sale Order and Purchase Order Review</b> | The objective of this analytic is to determine if it is apparent from the cancelled sales orders versus cancelled purchase orders that inventories might be accumulating. Entails the examination of cancelled sales orders to cancelled purchase orders with the objective of identifying conditions where inventory levels (materials) continue to accumulate. Profile by month of SO cancellations to PO cancellations   |
| <b>Adjustments</b>   | <b>AR Billing Review</b>                       | The objective of this analytic is to monitor the AR transactions, specifically billing and adjustment type transactions, per customer, to identify clients with a high adjustment ratio. This information can help uncover the manipulation of client records, and ultimately assets such as inventory. This analytic is designed to examine the AR transactions file (billing and adjustments) with the objective of profiling clients who appear to have a high number of adjustments, write-offs when compared to their charges. |

## Compliance

Regulations can change frequently, and a flexible application that enables you to be current can reduce the cost of compliance through the timely detection of potential issues.

|                              |   |  |
|------------------------------|---|--|
| PEP/OFAC Sanctioned Provider | <b>Name Matching</b>                    | Identify expense transactions where the vendor name (and attendee name in the case of meals) closely matches a name on the OFAC/GSA list or other supplied lists of names (e.g. PEP list, prohibited vendors).   |
| PEP/OFAC Sanctioned Provider | <b>Suspicious Key Word Matching</b>     | Identify payment transactions containing suspicious words in identified fields (e.g. description or comments fields) such as: gifts, services rendered, facilitation, cash.  |
| PEP/OFAC Sanctioned Provider | <b>Transactions with High Risk</b>      | Countries Identify payment transactions to vendors or individuals in high risk countries.  |
| PEP/OFAC Sanctioned Provider | <b>Repeat Even Dollar Transactions</b>  | Identify employees with more than a defined number of even-dollar cash expense transactions above a specific amount threshold in a specified time period.  |
| PEP/OFAC Sanctioned Provider | <b>Flip-Flop Bank / Payee Details</b>   | Identify vendors with more than one change to bank account number or payee within a specified time period.<br>Unauthorised Vendor Data Changes Identify vendors with master data changes created and/or approved by an unauthorised employee.  |
| PEP/OFAC Sanctioned Provider | <b>Unauthorised Vendor Data Changes</b> | Identify vendors with master data changes created and/or approved by an unauthorised employee.   |
| PEP/OFAC Sanctioned Provider | <b>Overpaid Purchase</b>                | Orders Identify purchase orders where the total payment amount was greater than the total purchase order amount.   |
| PEP/OFAC Sanctioned Provider | <b>Manual Payments</b>                  | Look for manual overrides for payment processing, unusual use of miscellaneous / one-off vendor accounts.  |
| PEP/OFAC Sanctioned Provider | <b>Unusual Journal Entries</b>          | Identify unusual journal entries (e.g. No clear business purpose, Abnormal Debits/Credits, Benford's Law).   |
| PEP/OFAC Sanctioned Provider | <b>Phantom Employees</b>                | Identify Employees that may not be true employees.   |
| PEP/OFAC Sanctioned Provider | <b>Individual Gifts</b>                 | Identification of multiple gifts to a single individual<br>Government Official Entertainment Identification of entertainment of government affiliated individual<br>Segregation of Duties Identification of Segregation of Duties violations: E.g., Submitter vs. Approver (Travel & Entertainment). |
| PEP/OFAC Sanctioned Provider | <b>Unauthorised T&amp;E Cards</b>       | Identification of unauthorised Travel & Expense cards<br>Charitable Donations Identification of charitable contributions to organizations affiliated with the government.  |
| PEP/OFAC Sanctioned Provider | <b>Bonuses or Commissions</b>           | Identification of bonuses or commissions of unusual quantity or timing.  |
| PEP/OFAC Sanctioned Provider | <b>One-Time Vendors</b>                 | One-time vendor analysis: Identification of payment more than the threshold value  |
| PEP/OFAC Sanctioned Provider | <b>Cash Checks</b>                      | Identification of checks made to "cash"  |
| PEP/OFAC Sanctioned Provider | <b>Cash Transactions Metric</b>         | Identification of high volume of cash transactions   |
| PEP/OFAC Sanctioned Provider | <b>Out of Country Bank Accounts</b>     | Identification of payments made from out of country bank accounts or sent outside the country of operation   |
| PEP/OFAC Sanctioned Provider | <b>Non Relationship Use</b>             | Identify Use of new attorney / accountant / agent / consultant with no prior relationship  |
| PEP/OFAC Sanctioned Provider | <b>Manual Overrides</b>                 | Identification of payments made following manual overrides in the system   |
| PEP/OFAC Sanctioned Provider | <b>Government Payments</b>              | Identification of payments classified as government expenses   |
| PEP/OFAC Sanctioned Provider | <b>Frequent Use One Time Vendor</b>     | Identification of frequent use of one-time vendor arrangements   |

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| <b>PEP/OFAC<br/>Sanctioned Provider</b> | <b>Non Reference<br/>Document Payments</b> | Detect payments made without reference documents                             |
| <b>PEP/OFAC<br/>Sanctioned Provider</b> | <b>Suspicious JE</b>                       | Identify invalid or suspicious journal entries to temporary accounts         |
| <b>PEP/OFAC<br/>Sanctioned Provider</b> | <b>Unusual Time JE's</b>                   | Identify suspicious journal entry bookings at unusual times or flip-flopping |
| <b>PEP/OFAC<br/>Sanctioned Provider</b> | <b>Account Adjustments</b>                 | Identify adjustments to accounts inactive for more than X days               |

## ARBUTUS ANALYTICS

Arbutus delivers the very best in purpose-built audit analytics technology to meet the exacting demands of today's business environment. Auditors, business analysts, and fraud investigators rely on Arbutus to enhance their testing, analysis and compliance capabilities.

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