Western India Regional Conference (WIRC) of ICAI

Data Analytics for Auditors using IDEA – Overview and Case Studies
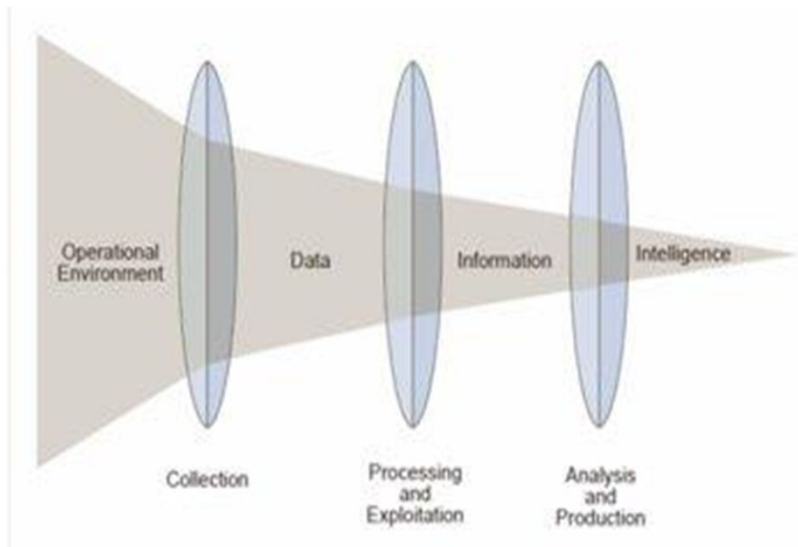
Presentation by
Jairam Rajshekhar
Director – Client Relations
Sama Audit Systems and Softwares Pvt. Ltd.

Audit Analytics - Premise
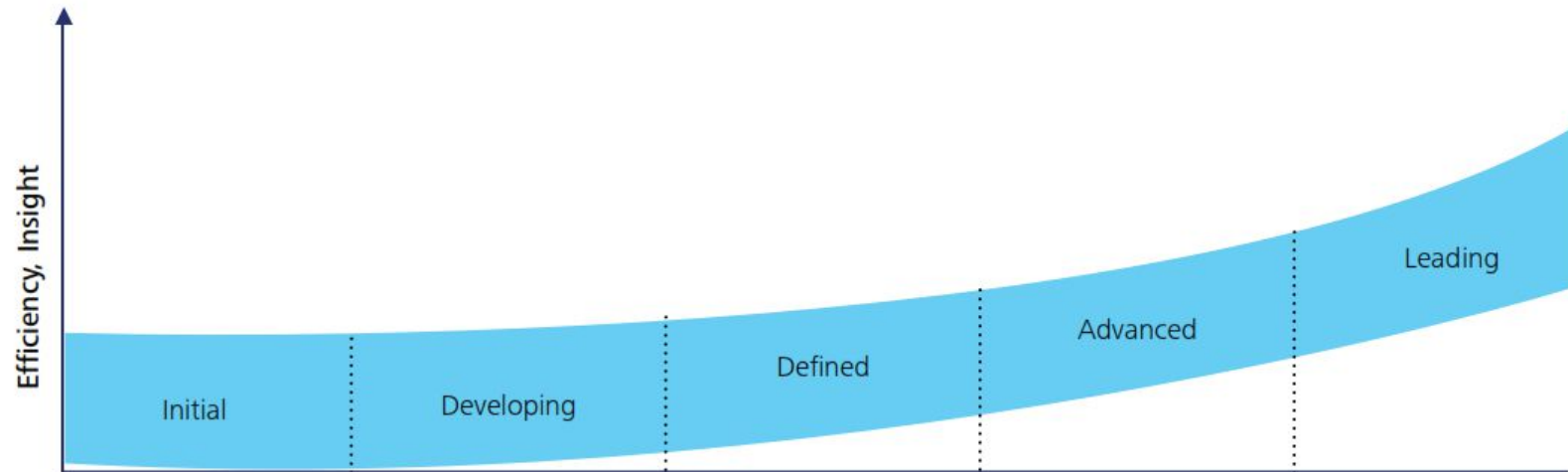
Analytics is not a "nice to have," but a "must have"

"*Information is the oil of the 21st century, and analytics is the combustion engine.*"

"*Things get done only if the data we gather can inform and inspire those in a position to make a difference.*"

"*The goal is to turn data into information, and information into insight.*"

Data Analytics – Why?

- Better Strategic Decisions – Analytics will help you make sense of the impact of uncertain business events.

- Enhanced Ability to Take On Problems Head On – Analytics demystify the cause, let alone treat the symptoms.

- Streamlined Processes – Analytics structure decision making within Processes.

- Anticipating Game Changing Risks – Analytics provide a compelling early warning mechanism.

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Maturity Model for Analytics

Efficiency, Insight (vertical axis)

Stages (left to right): **Initial**, **Developing**, **Defined**, **Advanced**, **Leading**

Initial
- No or limited capabilities
- Ad-hoc activities resulting in unpredictable performance
- Success is based on individual competence and not on repeatable processes

Developing
- The organization exhibits a basic set of capabilities
- Processes are rudimentary and loosely woven
- Success is repeatable with similar application and scope, but not consistent across organization

Defined
- Capabilities are developed and adopted consistently
- Capabilities are used to drive some audit activities
- Management defines goals and objectives for standardized processes and confirms they are communicated

Advanced
- Capabilities are well-developed and practiced with appropriate governance
- Processes are used to drive audit activities
- Processes and practices are routinely analyzed for effectiveness and efficiency

Leading
- Capabilities are well-defined and institutionalized
- The department has differentiated itself based on its capabilities
- Continuous improvement methodologies are used to adapt to future changes

SAMA — Enabling Business Excellence

What is a Data Analytic Tool for Internal Auditors

- Powerful, Versatile and Scalable Audit and Fraud Analytic Tool

- Plug and Play Software with Easy to Use Audit Features designed by Auditors for Auditors, Accountants, Investigators, Security Professionals and Compliance Professionals

- Effortlessly imports data from multiple applications/databases.

- Seamlessly analyses the imported data to reveal control failures and red flags for timely management control reporting and action.

IDEA in Few Clicks

Effortlessly import your records—from virtually any source

View a graphical or tabular history of all actions performed in a project

Easily access, save and share files

Detect errors and discrepancies in data

Access online tutorials, free scripts and add-ons, expert and community help and more through IDEA Passport

Perform a wide variety of analytic tasks, including data summarization and stratification

Key Functionalities

✓ Filter and Extract – quick exception identification reporting

✓ Categorize and Profile – dynamic MIS representation

✓ Merge, Match and Reconcile – seamless reconciliation for improved compliance monitoring

✓ Sample – objective sample representation verification

✓ Track Duplicates and Observe Gaps – present on completeness of data or otherwise

✓ Trend Analysis – generate forecasts for performance monitoring

✓ Chart / Graph – storytelling through visual imagery

SAMA Enabling Business Excellence

Visualization
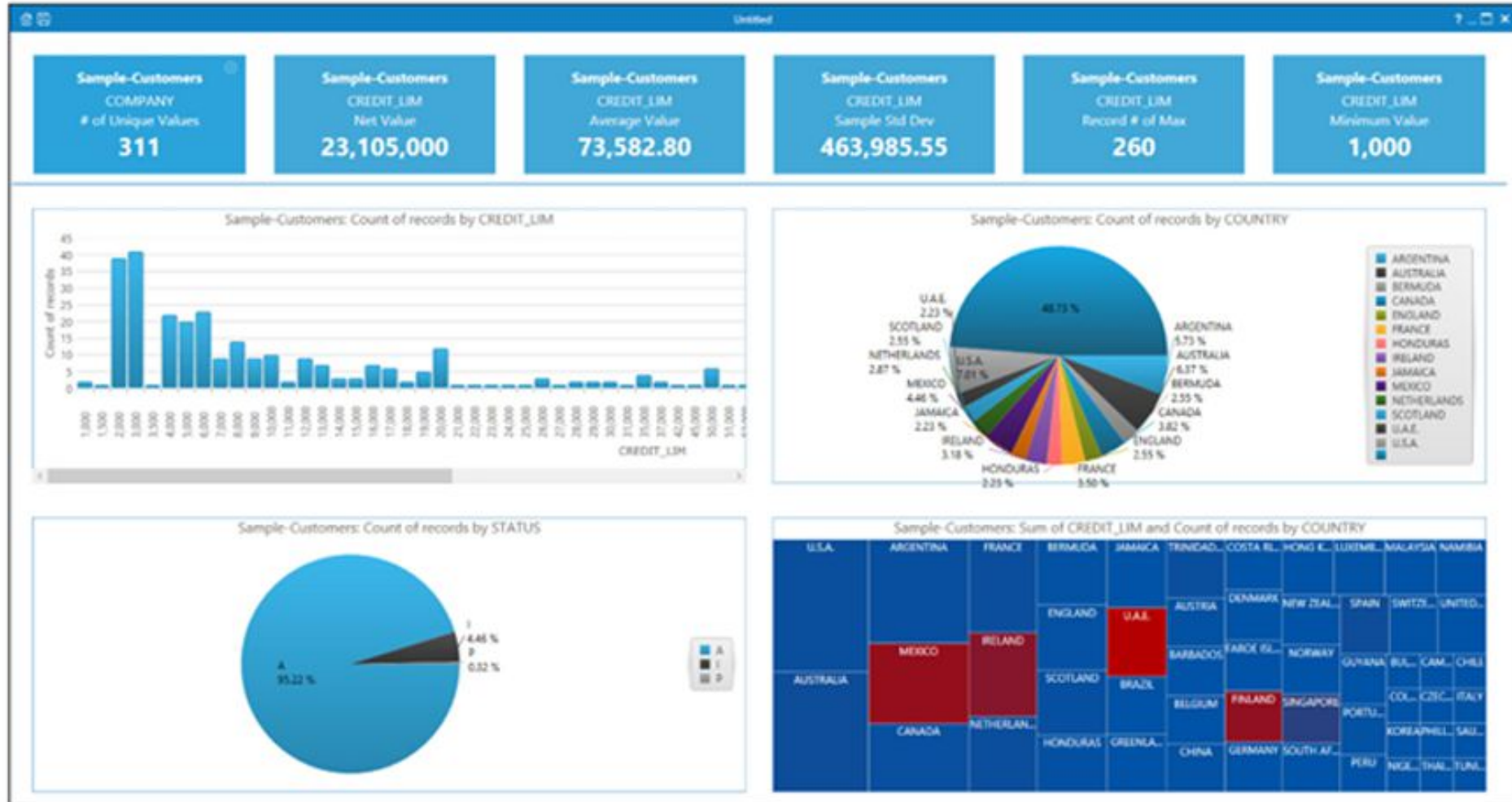
IT Framework for Implementation

Phase Reference	Phase Description	Client IT	Client Internal Audit	Sama Consultant
1	Internal Audit Objective/Management Control Report/MIS Report Definition.		✓	
2	Comprehensive identification of relevant table/s, field/s from all Application System module's for each of the Control Objectives/Reports identified in 1. above	✓		
3	Devising a ready Query based on 2. Above and creating a single report file	✓		
4	Importing the report file/View into IDEA.		✓	✓
5	Interrogation and analysis of report data converted into IDEA database in line with the Control Objectives/Reports identified in 1. Above.		✓	✓
6	Exporting the output reports into a shared IDEA Project folder as a Spreadsheet File.		✓	✓
7	Validating the findings arising out of the IDEA Reports		✓	
8	Correcting the analytics, report wise based on learnings from the validation.		✓	✓
9	Creating Macros for Repeat Analytics		✓	✓

Value Proposition and Business Benefits

- In-depth review of process generated data rather than traditional sample checks which is ineffective and inefficient.

- Ability to reveal surprises and insights which the Client Management never knew about – true value add.

- Possibility to go beyond controls and focus on cost saving and revenue maximization.

- Concurrent use of Data Analytics in Audit significantly reduces compliance costs.

- Framework to automate complex MIS reports through Macros.

Why should I bother about CAAT's?

1. A Not-For-Profit industry IT association – Efforts to identify duplicate entries Efforts reduced from 12 days a week to 30 mins

2. A Pharma Major – Reconciliation of Rate of Credit Note vs Invoice Rates – Rs. 50 million savings

3. An Auto Conglomerate – Recalculation with entry - computation of retrospective rate amendments – Leakage identified – Rs. 8 Crores

4. A Bank – GST Reconciliation – 20 days to less than 1 hour with additional benefit identification

5. A Large Manufacturing Company - Fraud Investigation of Overtime Collusion amongst workers – result identification in minutes

6. An NBFC – Reconciliation of few million line items of Retail Loan EMI Collections with bounced EMIs to avoid NPA Detection. Complete Coverage – 25% to 100 %

7. A Leading Manufacturing Company – Stockist Reco – PDF and HTML Compare

8. The Shared Services Centre – Duplicate Vendor Bill Booking – Daily - 5 members working 8-12 hours a day to macros providing the results in 2 hours.

Drivers for implementing Analytics

✓ Maturity and Stability of business process applications

✓ People oriented repetitive audit work

✓ Cost and availability of qualified audit personnel

✓ Budgetary pressure on audit departments

✓ Complexity of business transactions and increasing risk exposure

✓ Scale and scope of audit procedures & data volume

✓ Timeliness of audit results

Red Flag Analytics – Indicative Case Studies

Methods adopted	Examples of failures detected
Exception analysis	• Loans sanctioned at rates lower than the existing borrowing cost
Trend analysis	• Sales executive productivity across months
Volume analysis	• Number of receipts cut by an executive on the last day of the month
Variance analysis	• Increase in vendor level average payments (RSF analysis)
Duplicate analysis	• Payments made more than once for the same invoice submitted by the vendor
Split transactions	• Individual vendor invoice split into two or more to circumvent approval limits
Data reconciliation	• Fund transfer payments processed as per ERP vs. fund transfer advise sent to banker.

Case Studies
Control Objectives – Procurement - 1

- ABC Pareto analysis of procurements ~ profiling of procurements into high, medium and low value bands to study maximum value assurance with minimum record checks.

- Trend Analysis of Unit Prices ~ trend analysis of unit prices material wise in the review period (quarter)

- High value items being purchased from a single Vendor

- Low value items purchased through multiple Purchase Orders ~ where cost of ordering is more than the cost of items purchased

- Purchase Order splitting ~ multiple purchase orders raised on the same date for the same item at the same plant on the same vendor by the same user where the value of the cumulative orders per date are more than the approval limit of the user.

Case Studies
Control Objectives – Procurement - 2

- Purchase Order Unit Price variance within the same month ~ capture orders where the same item is ordered in the same month at different prices from the same or different Vendors.

- Purchase Order Unit Price variance within the same week ~ capture orders where the same item is ordered in the same week at different prices from the same or different Vendors.

- Purchase Orders created on weekends.

- Unreleased Purchase Order Aging.

- Purchase Orders with Advance Payment Terms

- Open Purchase Orders beyond 6 months where deliveries are pending.

Case Studies
Control Objectives – Procurement - 3

- Relative Size Factor (RSF) test ~ gaining insights into the ratio of the highest to the next highest order value per Vendor.

- Missing Purchase Orders ~ break in sequential numbering of purchase orders.

- Vendors where Orders are being changed ~ orders where the Order Change Date is after the Order Release Date and also Material Receipt Date

- Vendors with single Orders in the entire review period.

- Purchase Orders created on Public Holidays.

- Purchase Orders created for high cost Vendors when low cost Orders are open within the Ordering System.

Case Studies
Control Objectives – Procurement - 4

- Sequential Purchase Orders for suspect Vendors ~ potential vendor favoritism.

- Top value Purchase Orders per Material and Vendor.

- Backdating of Purchase Orders.

- Same Material being procured under different item codes.

- Procurements from the same Vendor under different Vendor Codes.

Case Studies
Control Objectives – Payroll - 1

- Payroll Deductions : actual deductions matches the master deductions despite Leave without Pay.

- Multiple payments to the same Employee ~ employees receiving both Salary and Retirement Benefit Pay.

- Trend analysis of Employee payments for any month.

- Payroll payments to departed Employees where the Payment Date is after the Employee departure / termination date.

- Potential duplicate payroll payments to the same bank account number in the same pay period.

- Potential duplicate payroll payments to Employees with the same Date of Birth in the same pay period.

Case Studies
Control Objectives – Payroll - 2

- Employees who have not taken leave for more than say 6 months or one year.

- Potential duplicate employees in the Masters ~ where the same bank account number is linked to different Employees.

- Salary Recipient and Payment approver are the same individual.

- Splitting of Employee Payments to circumvent threshold limits.

- Manipulation of Employee Leave Payments ~ identify Employee Leave payments in excess of the available leave balance.

- Department count of employee departures/leavers.

Case Studies
Control Objectives – Payroll - 3

- Variances in Master Total Deductions within the same Department ~ isolate transactions where the department, grade, job, year/month are the same but the master total deductions are different.

- Employees monthly average Net Pay varies more than 'x %' of the Grade average Net Pay.

- Employees Actual Net Pay Relative Size Factor (RSF) Test.

- Identify sudden and unexplained changes to Staff Loan recoveries in any month of the review period.

- Isolate TDS not deducted from Employee pay in any month of the review period.

Case Studies
Control Objectives – Payroll - 4

- Employees receiving multiple Performance Incentives during the review period.

- Employees receiving multiple Salary Increments during the review period.

- Employees having the same Master Total Deduction amount despite a Grand Change.

- Payroll payments without a valid PAN number or with no PAN number.

- Employees receiving Retirement Benefits after reinstatement.

- Payments to Employees where Actual Total Deductions are Nil

Case Studies
Control Objectives – Accounts Payable

- Vendor Favoritism – only advance payments being made to a select Vendor or Vendor raising a running Bill Series – 1,2,3...

- Same Vendor having multiple Vendor Codes where one Code has a Debit Balance (On Account Advance) and other Code is having regular Bill based payments without adjusting Advance

- Payments made to the same Vendor against similar Bill Numbers like ABC123 and abc~123# as an example

- Vendors to whom only advances remitted in the year but no Bills received – possible fund diversion.

Case Studies
Control Objectives – Accounts Receivable

- Bad Debt provisioning done in the current year but no revenue recognition for the Debtors in the past years/s.

- Aging analysis of Debtors with focus on Open Debits beyond one year and where billing continues in the current year.

- Same party Debtor as well as Creditor and value of inter-se business transactions exactly the same or almost the same – accommodation entries.

Case Studies
Control Objectives – Inventory Control

- Correlate Inventory Holding in days with Consumption to identify irregular trends say rising consumption and rising inventory or vice-versa.

- Inventory bought but not consumed for a year despite having an opening balance at start of the year.

- Same Inventory having multiple codes with shortage in one code and excess in the other code.

- Inventory holding below minimum level and / or above maximum level where such levels defined in System.

Case Studies
Control Objectives – General Ledger

- Journal Vouchers posted with blank narrations or irregular narrations like all numbers or narrations containing key words like suspense, adjustment, write-off etc.

- System Journal Vouchers posted on Sundays or Public Holidays.

- ABC value sampling of Journal Vouchers to identify high-value entries – study patterns like – same approvers, same cost centers, same narrations.

- Benford's Law Last Digit test on Voucher Amount to look at potential suspicious entries ending with 49, 79, 99 etc.

Sustaining Analytics Going Forward

How to accelerate the adoption of analytics through your enterprise and capture the value of organization data ~

- Start with low-hanging fruit and develop an analytic road-map.

- Know which Questions matter most to your organization and process to be monitored.

- Automate delivery of information to stakeholders.

- Engage and Visualize – Output must deliver insights to make fact based decisions.

- Embed analytic capabilities into decision-making processes.

- Match analytics to the job at hand.

Way Forward

- Auditors need to establish their technology blueprint for success before making any major investments.

- Technology is a facilitator for better risk monitoring.

- Audit and Fraud Analytics are core elements in the audit continuum that can be optimized through Technology.

- Application of the Maturity Model – focus on directional aspects, not absolutes – "Adapt while you Adopt".

Way Forward… Cont.

- Technology creates an environment for transparent conversion of audit issues to reportable areas of value

- Data Analytics in Audit creates an environment of discipline making preparation for peer reviews and quality certifications convenient.

- Imparting training for every audit staff member is imperative to gradually rising up the technology maturity curve.

Thank You

Questions

Email – j.Rajshekhar@samaaudit.com

Website – www.samaaudit.com