

2018 IIA INDONESIA NATIONAL CONFERENCE

Nurturing Agile Internal Auditors in Disruptive Times

Data Analytics Embedded in Internal Audit

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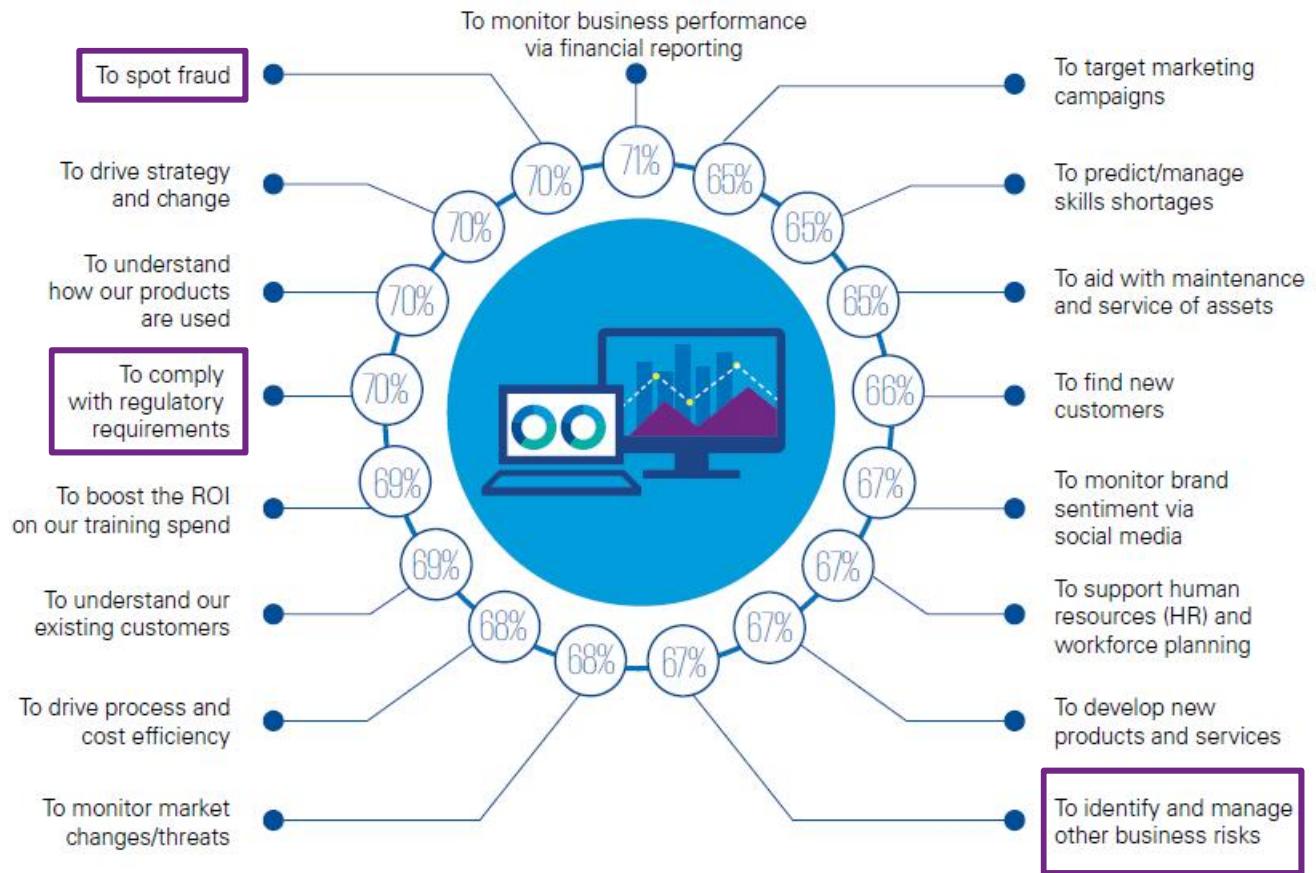
Partner KPMG

2018 NATIONAL
CONFERENCE
Bali, 28-29 August



Data underpins competitive advantage

How integral are data and analytics in helping your organization to make decision in the following areas?



Source: Responses from 2,165 respondents from 10 countries for a commissioned study conducted by Forrester Consulting on behalf of KPMG, July 2016

Why does data analytics matter?

Efficiency



- ▶ Automate manual work (e.g. collecting, analyzing and reporting of data)
- ▶ A defined and iterative process to report on exceptions on predefined intervals

Effectiveness



- ▶ Ability to filter or sort exceptions based on thresholds or severity ratings
- ▶ Allows to spend more time on root cause analysis of the exceptions
- ▶ Better decision making based on visualizations (e.g. trend lines)

Better Quality



- ▶ Inspect all data to detect exceptions instead of taking samples from the data
- ▶ Less chance on manual errors because of the high level of automation
- ▶ Standard exception reporting where the chance of misinterpretation is reduced

Higher Frequency



- ▶ Exceptions can be detected in a early stage which allows for less corrective actions

Building trust in analytics

D&A underpins competitive advantage

To know your customers

D&A is integral to understand:

How products are used – **70%**

Existing customers – **69%**

New products and services to develop – **67%**

To streamline existing operations

D&A is integral to understand:

Business performance – **71%**

How to drive process and cost efficiency – **68%**

How to drive strategy and change – **70%**

To manage risk and compliance

D&A is integral to understand:

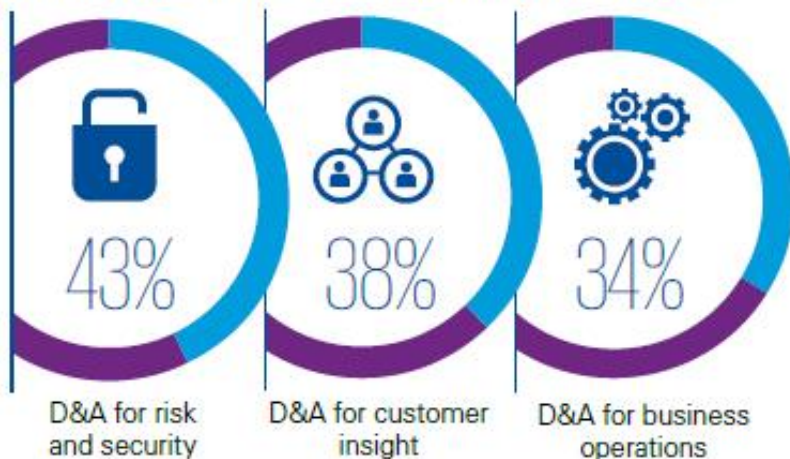
Fraud – **70%**

Business risks – **67%**

Compliance with regulations – **70%**

Trust in D&A is lacking

Few organizations are very confident in their D&A insights



Only

51%

of respondents believe their C-suite executives fully support their organization's D&A strategy.



Source: Responses from 2,165 respondents from 10 countries for a commissioned study conducted by Forrester Consulting on behalf of KPMG, July 2016

Full study can be downloaded from www.kpmg.com/trust

Drivers of data & analytics

Increased risks and compliance

Business transformation and cost savings

Major ERP implementation

M&A activity

Impact

Data



- Lack of factual, unbiased management information (KPIs, dashboards)
- **Unable to leverage** the wealth of information in **ERP**
- The **desire for insights** on internal control and risk management

Process



- Looking for ways to **cut costs or improve the efficiency and effectiveness** of operational, administrative, and/or financial processes
- Searching for **root cause** of process disruptions, issues, inefficiencies not clearly understood
- Seeking process-driven analyses and/or visualizations; currently, most are transactional driven

Technology



- Considering or implementing Continuous Auditing/Continuous Monitoring (CA/CM) or BI tools
- **CA/CM or BI tooling is not delivering** desired insights, reports, and flexibility
- Implemented or upgraded the ERP system, but not realizing the business case
- Lack of capabilities to consistently analyze data from Complex ERP footprint

People



- Lack of skilled resources in data analytics to analyze and improve business or financial process
- **Lack of harmonization of processes** across countries or business units
- New board member, C-level actor in need of management information and good advice



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Common misconceptions of data analytics



Common misconceptions of data analytics

“You just need an off-the-shelf solution that you can just buy and forget”

- The solutions are generating valuable data that should be leveraged on.
- Data analytics require continuous learning & improvement.
- Potential high maintenance and tuning fees.
- Manual review is required even after GO-LIVE to ensure that the system is working as intended and to continuously improve the system.



Common misconceptions of data analytics

“You need special expensive analytics tools and software”

- The most popular programming languages for data science comes with **free** open source packages.
- Leveraging on these also means that you can access a larger talent pool, compared to people trained to used specialized software.



Common misconceptions of data analytics

Almighty Management

“Hiring data scientists will solve all my problems”

- Data scientists are only part of the solution. It is however key that HODs understand what a data scientist does and what is the limitations of his/her ability.
- Within the realm of data science, there are various domains. Data scientists usually specialise in one or two domains. Knowing their area of specialisations are crucial to addressing the problem statement.
- Understanding the problem definition, identifying the correct domain and working towards a clear solution is still key for applying data analytics successfully.



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Data Analytics-enabled Internal Audit (DAeIA)



Analytics: Current state

Audit Analytics Today

Audit Analytics
of the Future

Analytics
a % of HC

Current FTE : 0.5%-5%

Analytics
Execution

Manual Extraction + Rule-based Scripts



Generating
exceptions

Data Utilization

Analytics on a pre-generated
data set



Focuses on a
"point-in-time"

Follow-up Action

Targeted sampling



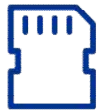
Manual checking of exception results

Analytics: Future state

Audit Analytics Today

Audit Analytics of the Future

Auditor of the Future



5%-33%

Audit FTE are Data Analysts

* Denotes an approximate amount of FTE as a starting point to effectively utilize data analytics

Moving from reliable, historical data to real time



Identifying anomalies

Dynamic risk assessment

* Note: As close to real time as possible.

Automated extraction and validation



Machine Learning-enabled dynamic risk assessment



Pattern-based scripts



Deep insights to identify potential fraud and errors



Faster response time



Case Management Tracking

Data & analytics-enabled internal audit (DAeIA)

The integration of technology-enabled data & analytics, as well as continuous auditing tools and techniques, into the risk assessment, planning, scoping, execution and reporting phases of an Internal Audit methodology to *provide greater insights and value into processes and help mitigate risks.*



Transformation of traditional internal audit to a robust data analytics enabled program

When transforming a traditional internal audit program to a robust DA enabled program, consider People, Process and Technology

People

- Compile a profile/job description for personnel required for the DA program
- Identify personnel within the organization that have the required experience/skills; consider other sourcing opportunities if required skills/experience are not resident within IA
- Develop a training program
 - Techniques
 - Tools
 - Results Interpretation
- Develop program “champions” by providing personnel with the appropriate skills/experience with the training program

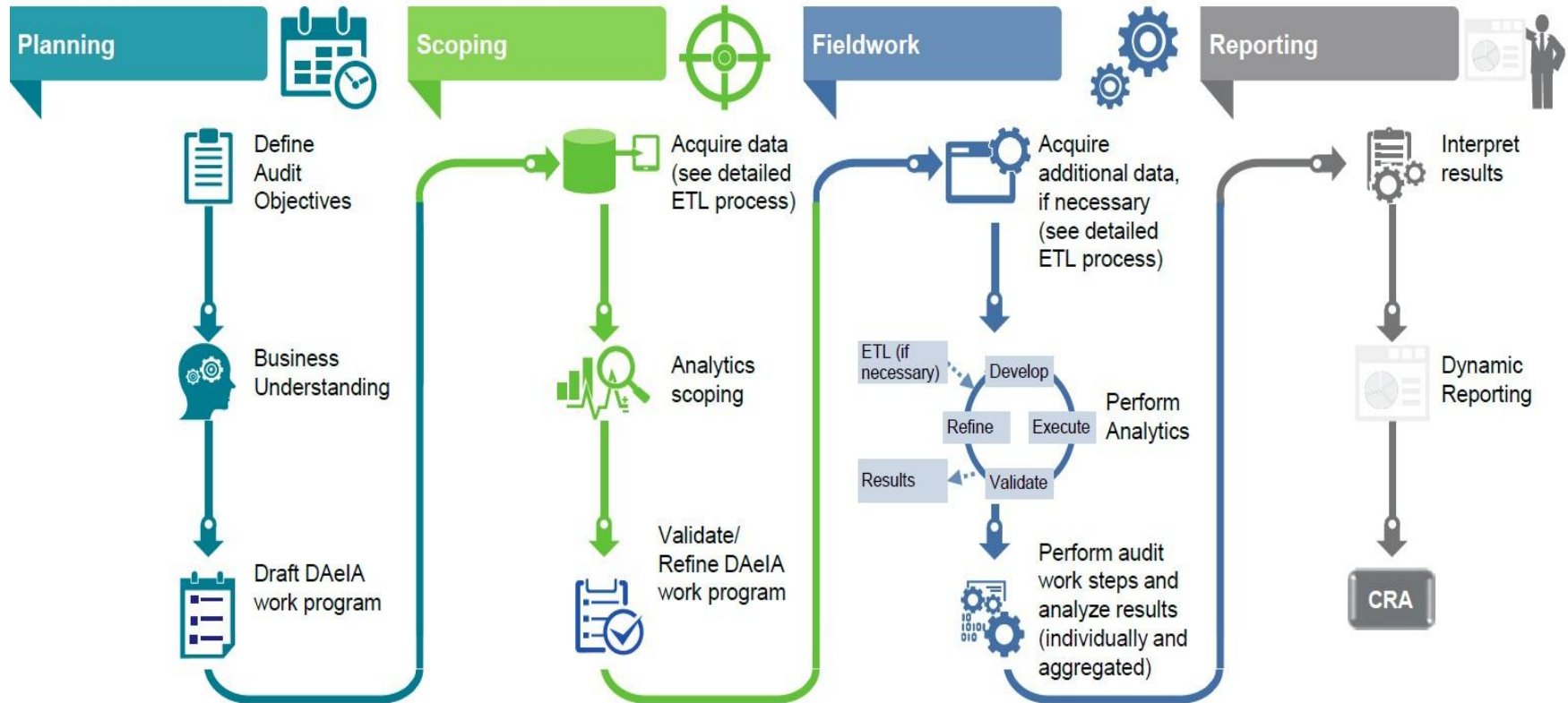
Process

- Develop a DA audit methodology, including:
 - Risk Assessment
 - Audit Candidate Profile
 - Procedures to transform an audit candidate to a DA enabled program (e.g., incorporating DA into planning, scoping, procedures, etc.)
 - DA reporting
 - Develop DA KPIs

Technology

- Tool(s) selection
- Tool usage maximization
- Data availability/understanding/ETL
- DA tool obsolescence monitoring/prevention

DAeIA engagement life cycle - methodology



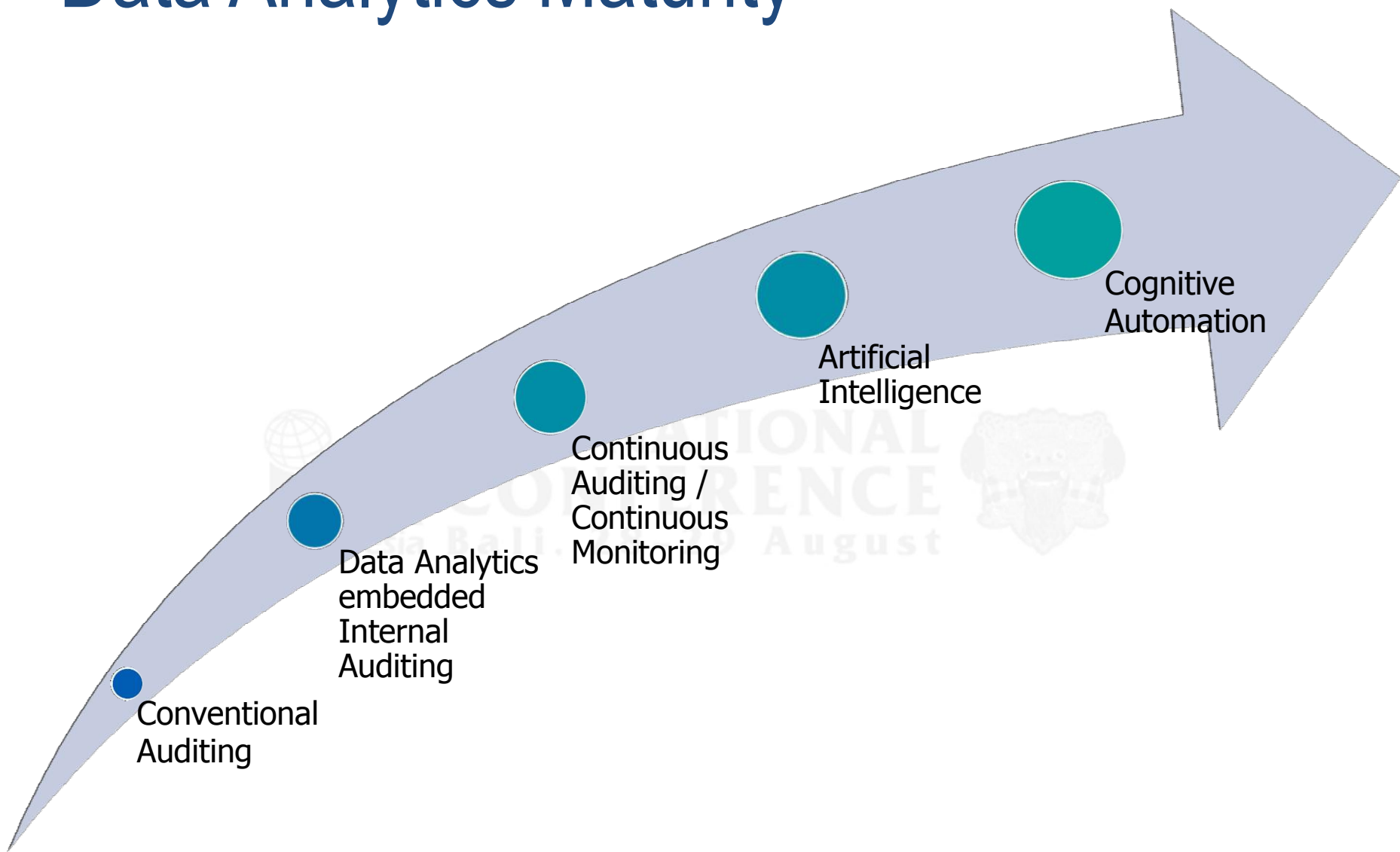
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Future of DAeIA

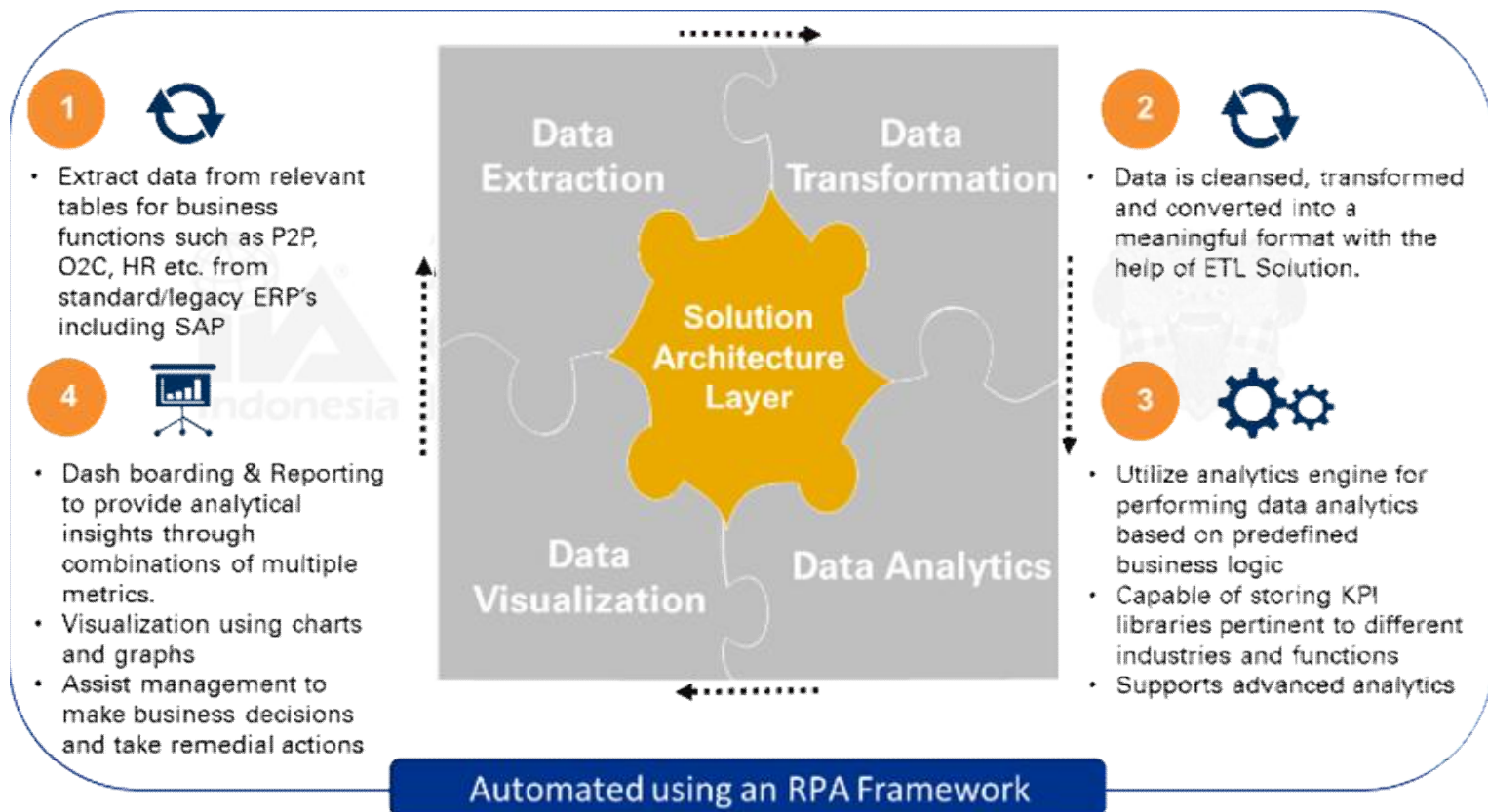


Data Analytics Maturity



Continuous Auditing / Continuous Monitoring (CA / CM)

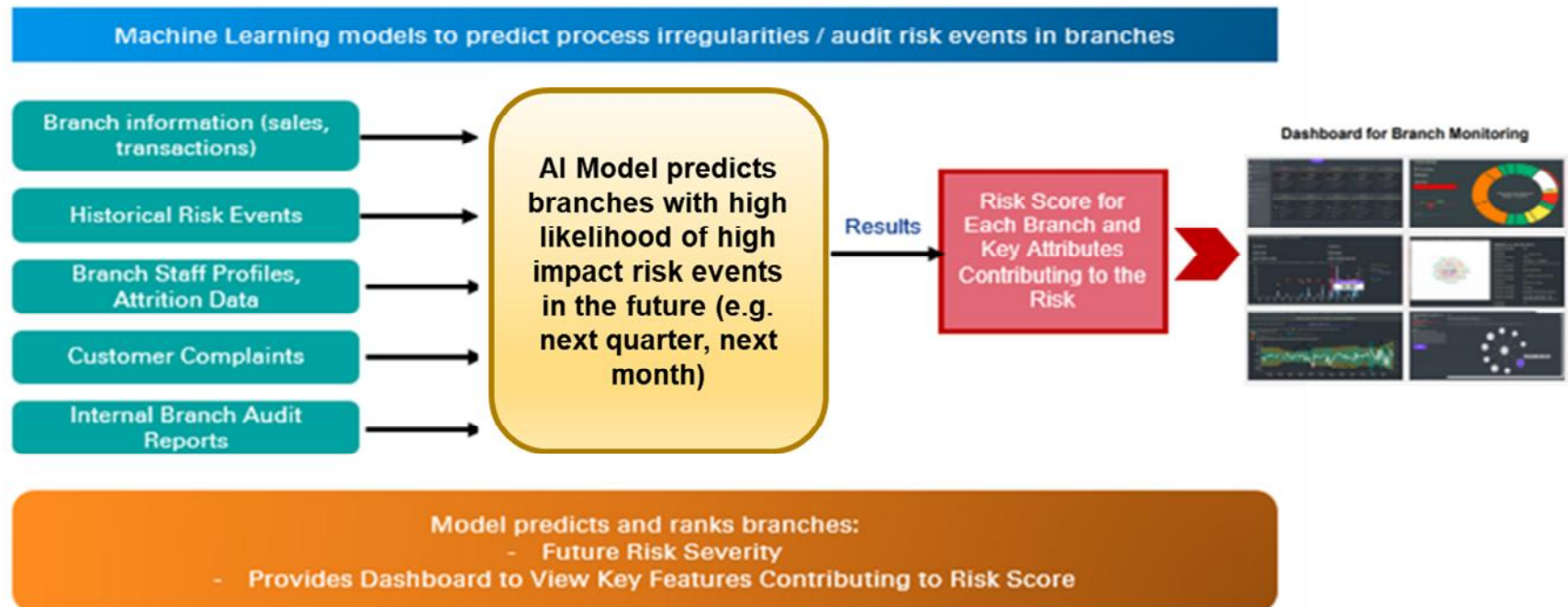
Continuous Auditing / Continuous Monitoring (CA / CM) can leverage the existing data analytics engine and logic towards the objective of having a real-time risk assessment, ensuring the highest relevancy in audit and decision-making.



Artificial Intelligence – Drive Analytics

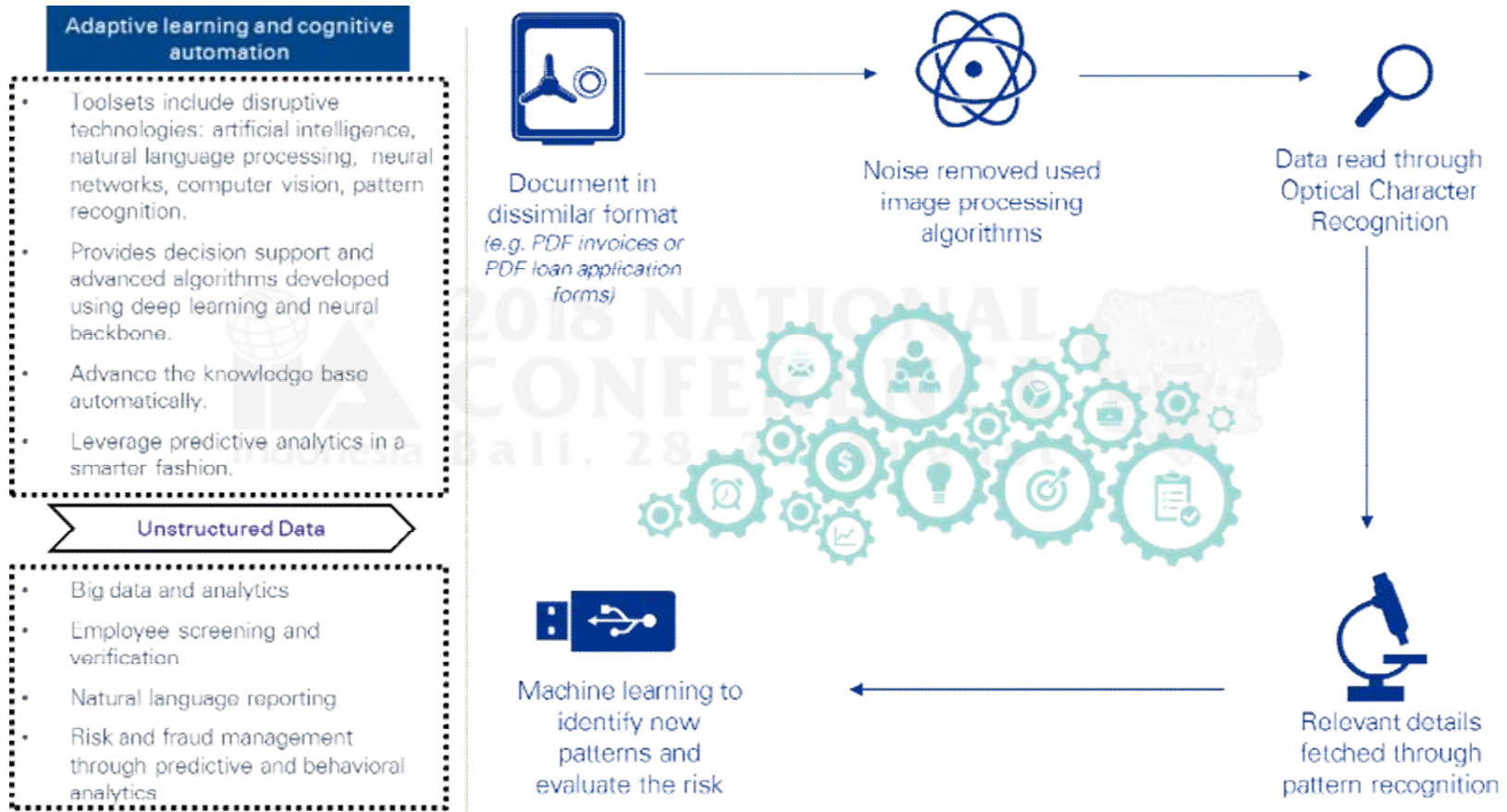
Artificial Intelligence-drive Analytics, using predictive machine learning models, is able process various data from multiple sources to help you assess and determine risk levels. In the example below, AI is used to predict branches with high likelihood of high impact risk events on a periodic basis.

Predictive Model for Branch Audit



Cognitive Automation

Any paper-based data (PDF scans) and unstructured data can be automated through **Cognitive Automation** to reduce the extraction and generation of data, thus enabling resources to focus more on analyzing results.



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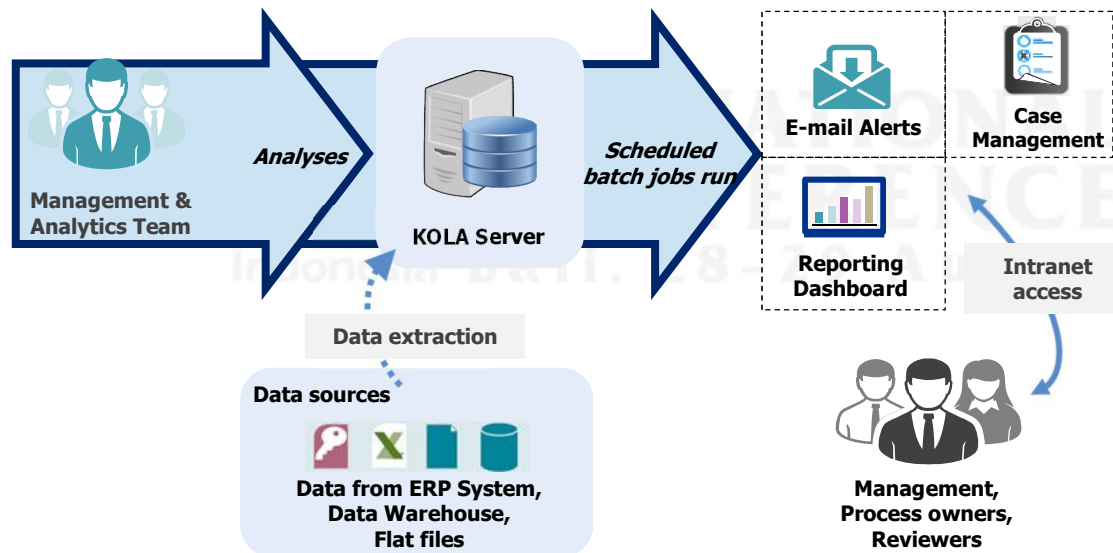
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KPMG Online Analytics (KOLA)



KPMG Online Analytics (KOLA) – Overview

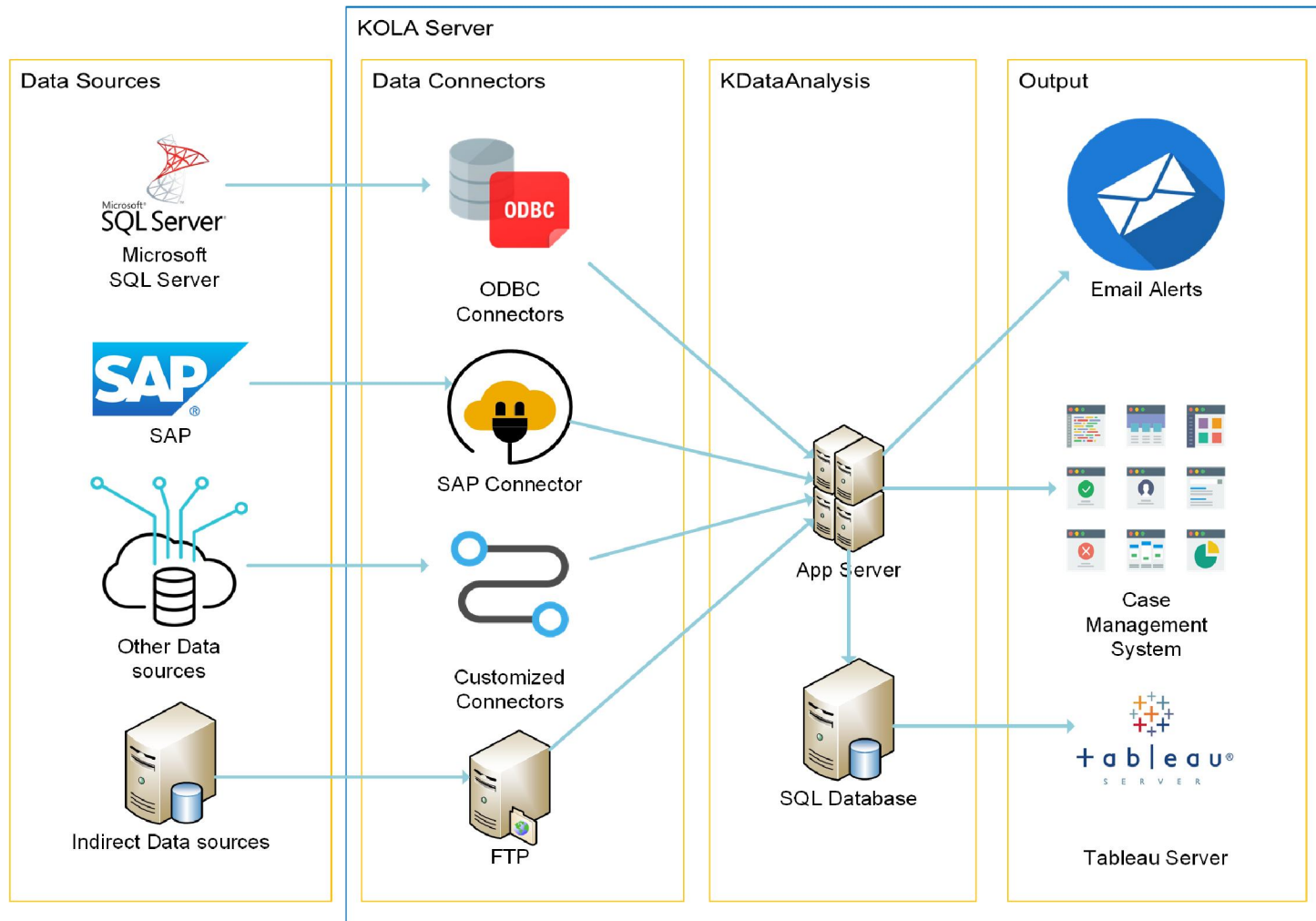
KOLA is a KPMG proprietary tool for continuous auditing and continuous monitoring. It is installed within the organization's network. It retrieves data from the various ERP and databases, and screens the transactions for any anomalies and flags them for future investigation. The tool is platform-independent and unobtrusive, and can be deployed on many systems. The KOLA platform is integrated with your IT infrastructure, with routines scheduled to run automatically or on-demand, providing the most up-to-date management information via a case management system, dashboards and email alerts.



Key Features:

- ▶ Case management system
- ▶ Independent data warehouse minimizes risk of affecting day to day operations
- ▶ Dashboard allows continuous monitoring of trends

KOLA System Configuration



KOLA – Benefits



Proactive warnings when controls fail or exceptions occur



Unobtrusive as no software is loaded on the system being audited and the tests can be run during out-of-office hours



Almost real-time detection, hence issues can be dealt with swiftly



Allows workload to be spread across time, hence easing the strain on audit resources



Efficiency gains with technology and automation



Focuses resources and management attention on where it matters as alerts can be set to warn the auditors or management on high-risk exceptions flagged



KOLA – Case Management

Case management dashboard home

This screen lists the alerts generated by KOLA, and allows users to filter alerts by date / description / status and other fields.

Home Page

Summary Report

Archive

Filter: All 2016

| Alert ID | Alert Date | Alert Area | Entity | Test Name | Test Description | Alert Overall in-charge | Overall Alert Status |
|----------|------------------------|------------|--------|--|--|-------------------------|----------------------|
| 38 | 29/02/2016 10:27:32 AM | P2P | SG | P2P_04 Approvers approving over \$1mil POs or more | 3 approvers found approving over \$1,000,000 worth of POs | testOverallAlertC | Open + |
| 37 | 29/02/2016 10:27:23 AM | P2P | SG | P2P_03 Amendment of PO value past \$10k and 300% | 21 POs noted with amendments crossing \$10,000 and 300% | testOverallAlertC | Pending - |
| 36 | 29/02/2016 10:27:07 AM | P2P | CN | P2P_02 Recommending parties involved in \$500k POs or more | 10 recommending parties found involved in over \$500,000 of PO transactions. | testOverallAlertC | Open + |
| 35 | 29/02/2016 10:21:58 AM | P2P | CN | P2P_01 Amendment of PO value past \$30k | 18 POs noted with amendments crossing \$30,000 | testOverallAlertC | Open + |
| 34 | 18/01/2016 11:35:48 AM | SoD | SG | SoD#01 | [SoD#01] [SG] 56 users noted with SoD conflicts | testOverallAlertC | Open + |

KOLA – Case Management





Case management details page

Upon drilling into an alert, the details of the alert are shown. This list consists of transactions which have been flagged by the specific analysis triggering the alert.

Home / Case Detail

Summary | **Alert Details** | Report

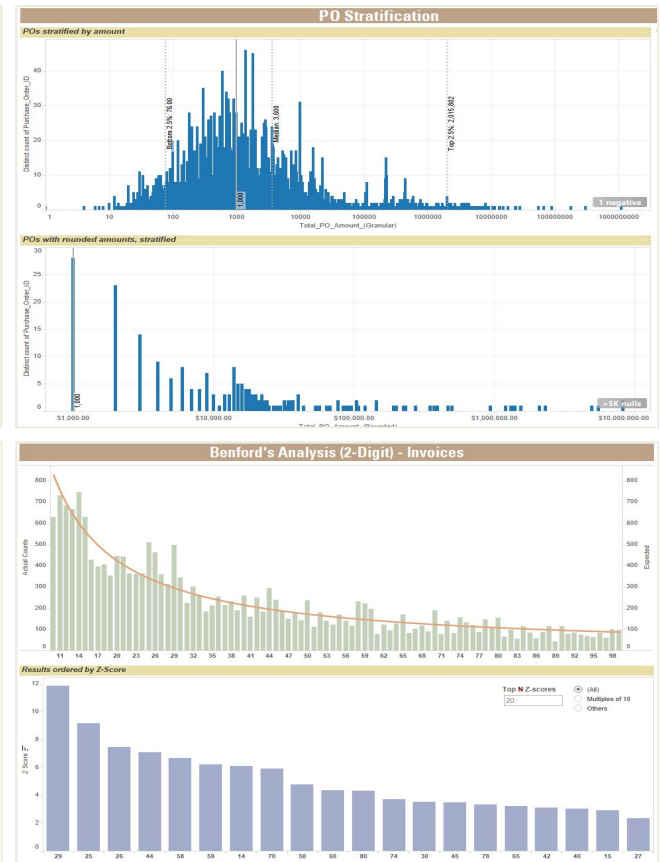
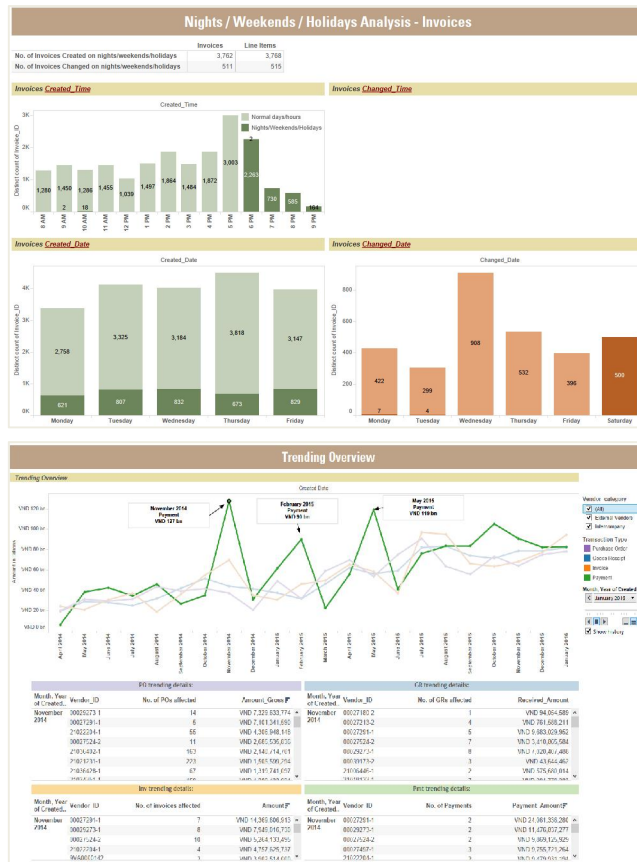
Status: --Select Status-- Assign To: --Select User-- [Update Selected](#) [Add Comment To Selected](#)

| Alert Detail ID | Alert Description | Status | Assigned To | Last Modified By | Action |
|-----------------|---|--------|-------------|------------------|---|
| 344 | PO # : 3020092561 Initial Value : 5000.00 Current Value : 20000.00 Percentage Change : 300% Vendor ID : 103099 Text : AFT DECT CRANE TO LOAD TEST | New | | |   |
| 343 | PO # : 3020086691 Initial Value : 5000.00 Current Value : 20000.00 Percentage Change : 300% Vendor ID : 104136 Text : REMOVED & RENEWAL S/W & FUEL PIPES | New | | |   |
| | PO # : 3020087732 | | | | |

KOLA – Data Visualisation

Interactive Dashboards

Interactive dashboards can be customized to user requirements, to best suit each specific analysis. Each dashboard allows users to drill down the analysis, down to transaction level details, allowing for quicker understanding and detailed investigations.



Conclusion: Expected benefits of DAeIA

Benefits to IA: More robust and focused audit evidence and more insight by analysing full populations; to “*blow away the hay to find the needle*”

Pressure to be lean

- Risk assessments and dynamic audit plans underpinned by actual data to focus assurance effort there where it matters most
- Centralised / offshored audit preparation, obtaining evidence and audit execution
- Create efficiencies - and global consistencies through automation (less manual testing)
- Leverage Continuous Control Monitoring (CCM)



Enhance audit quality

- A more focused audit by analysing the actual data flows and work out where controls are complied with or were bypassed
- Providing better coverage, up to 100% of the population, rather than random samples
- Identifying large or unusual transactions and items more accurately for further investigation

Increased relevance to Management

- Get insight into internal control deficiencies and their actual financial impact for the financial year
- Combine data from different sources to create new insights, e.g. into how effectively you're using your systems
- Identifying trends, exceptions and potential areas for improvement

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THANK YOU

