2016 IIA INDONESIA NATIONAL CONFERENCE 6-8 SEPTEMBER

Concurrent Session - 2:

Leveraging Data Analytics in Continuous Auditing

Presented by:

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BoG, IIA Indonesia

AGENDA

Technology Trends

Current trends in data analytics technology

Current Practice & Common Terminology

What we found in survey?
Data Analytics Definition and characteristic

AGENDA

Leveraging data analytics (DA)

Leverage DA, Data Maturity Model,
Continuous Auditing & Monitoring (CA/CM)

Common Concern to Continuous Auditing (CA) Implementation

4 concern to consider

AGENDA

Practical approach & samples

How to start, complete picture some analytics method, Use case screenshot

Conclusion

DA and CA Implementation Fact, Question & Answer

Technology Trends

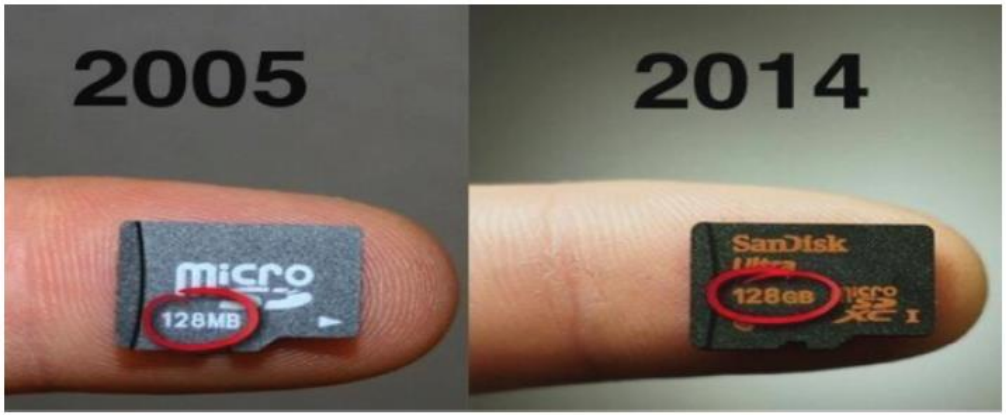
Technology Trends

Technology Cycles Have Tended to Last Ten Years

Reporting, Visualization, Dashboards, Analytics

Every generation of technology created the need for new analytics capabilities and new technology platforms

Technology Trends



Technology Trends

IBM Investor Briefing

IBM

Data is the new basis of competitive advantage

By 2017 there will be more than **1 trillion** connected objects and devices on the planet generating data.

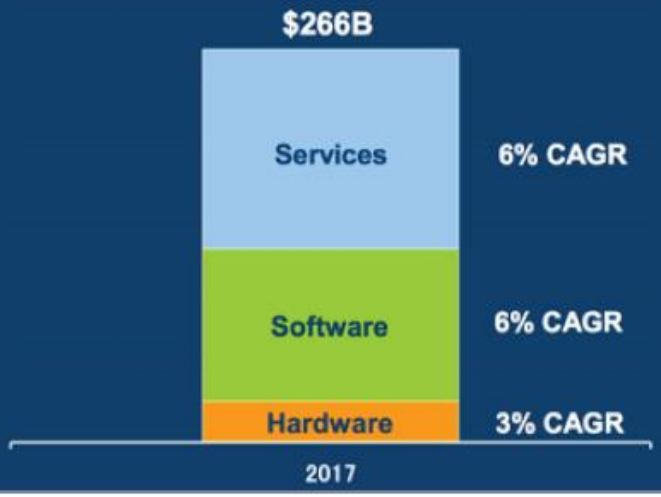
There are **2.5 billion** gigabytes of data generated every day…

of which **80%** is unstructured.

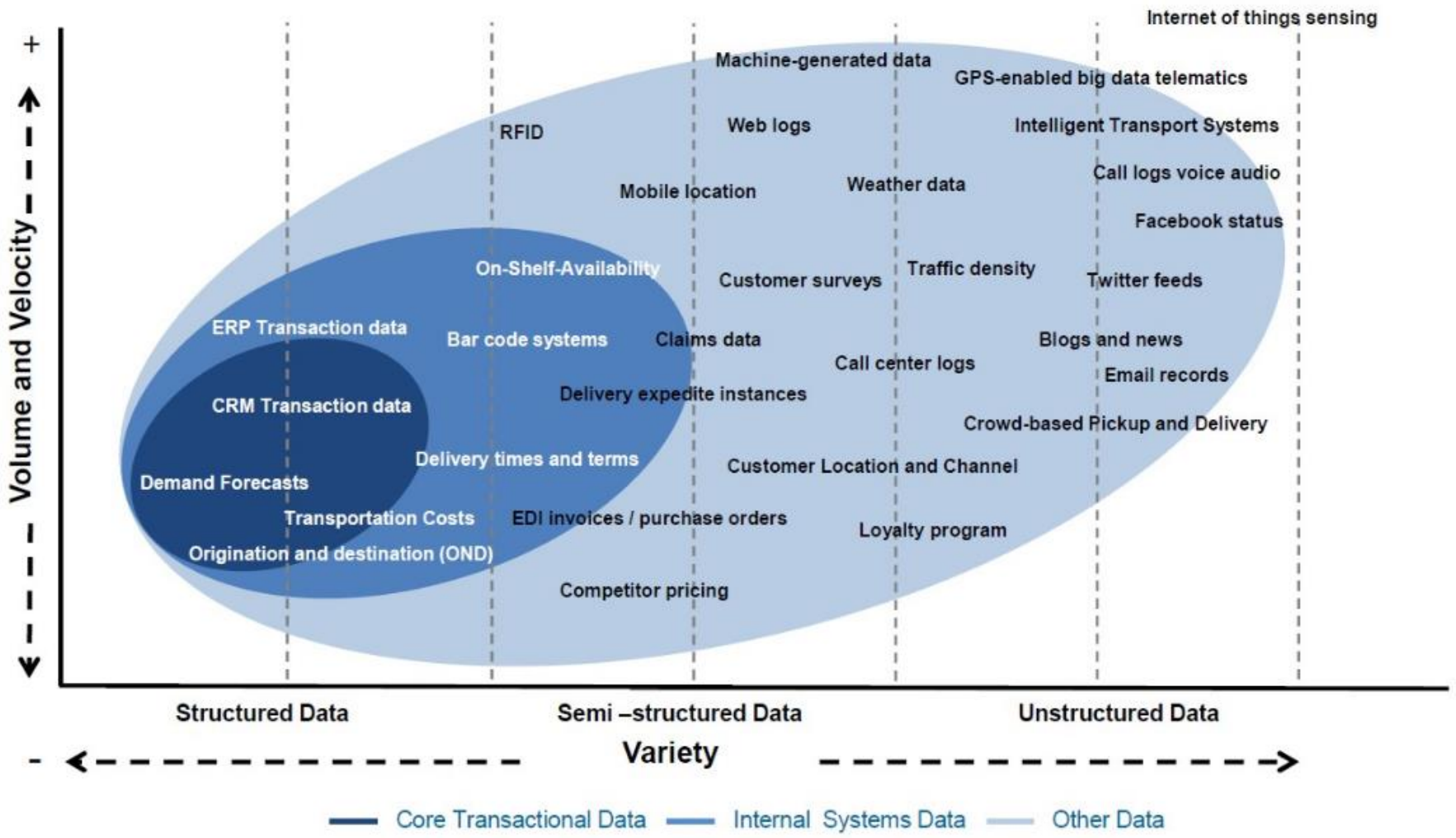
By 2017, WW data spend will be **$266B**.

Big Data & Analytics Market Opportunity

6% CAGR through 2017



Technology Trends



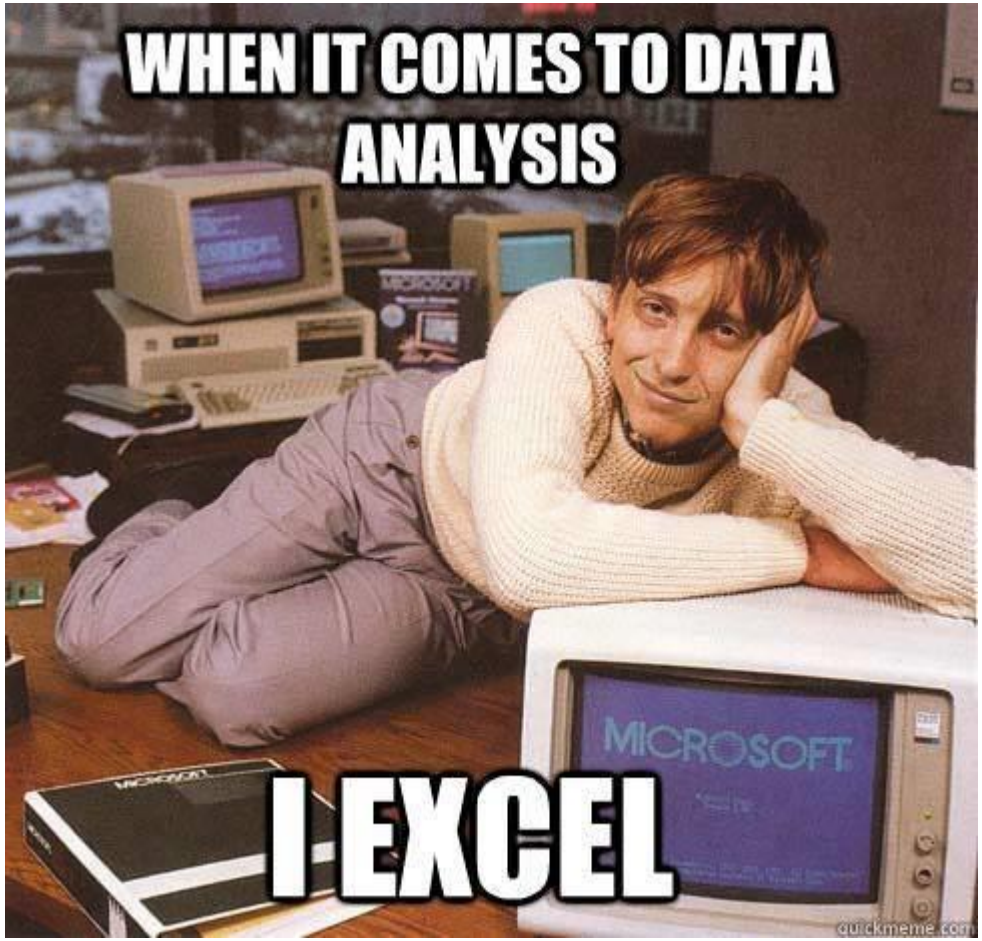
Technology Trends

What Lady Gaga Can Teach You About Analytics?

The current benchmark is **NBS Chart.** Manage Lists Hide

Metrics	May 23 - Jun 6	Jun 7 - Jun 21	% Change	Benchmark	Total
Spotify Connect Plays	302K	542K	80% ↑	-	-
Facebook Page Likes	6.93K	9.64K	39% ↑	-	879K
Wikipedia Pageviews	23.6K	59.6K	153% ↑	-	-

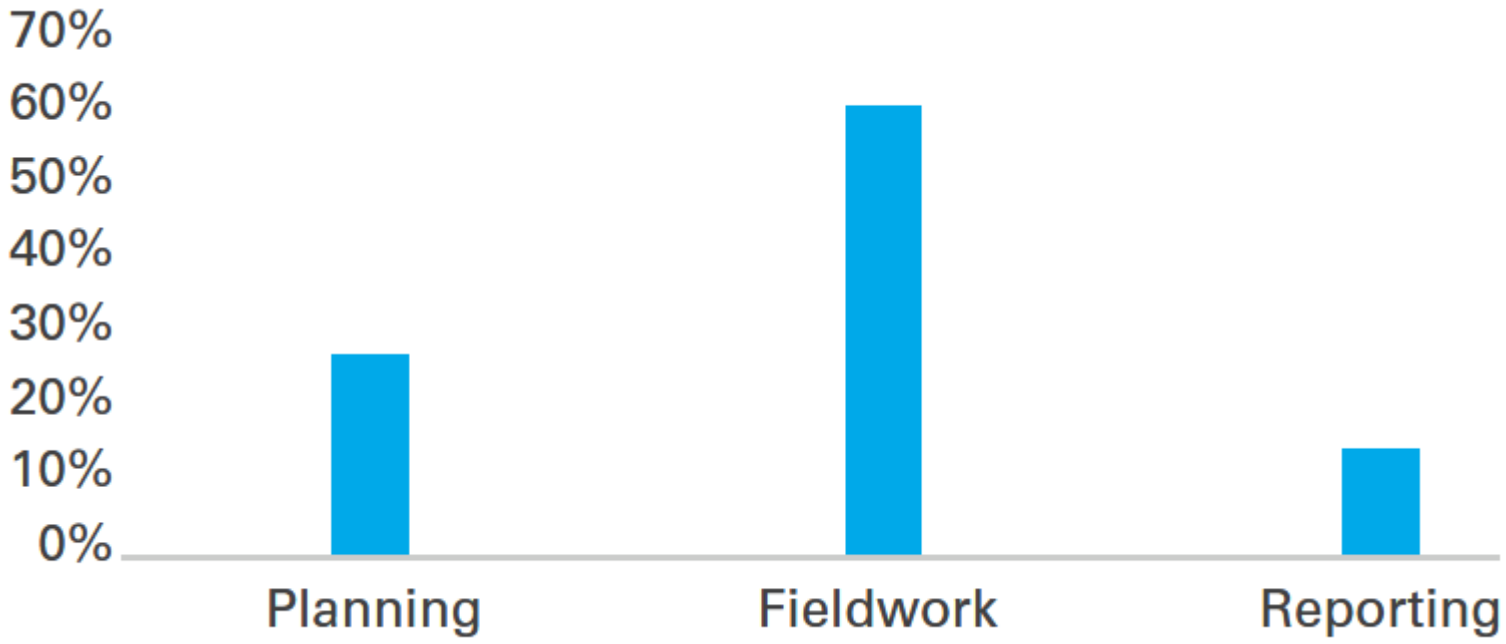
Technology Trends



Current Practice & Common Terminology

Current Practice & Common Terminology

Indicate in which of the following audit stages you are using DA tools and techniques?



2015 KPMG Survey, Data & Analytics-enabled Internal Audit

Current Practice & Common Terminology

Where does IA use data analytics in the audit lifecycle?

2015 EY GRC Survey insights

Current Practice & Common Terminology

In which processes or compliance areas does IA use data analytics?

2015 EY GRC Survey insights

Current Practice & Common Terminology

Data analytics:

defined as the process of **inspecting, cleaning, transforming, and modelling data** with the goal of highlighting useful information, suggesting conclusions, and supporting decision making.

- Various source

Current Practice & Common Terminology

Data analytics:

an analytical process by which insights are extracted from operational, financial, and other forms of electronic data internal or external to the organization.

Insights can be ..

- Historical, real-time, or predictive
- risk-focused or performance-focused, and
- frequently provide the 'how?' and 'why?' answers to the initial 'what?' questions frequently found in the information initially extracted from the data

- KPMG

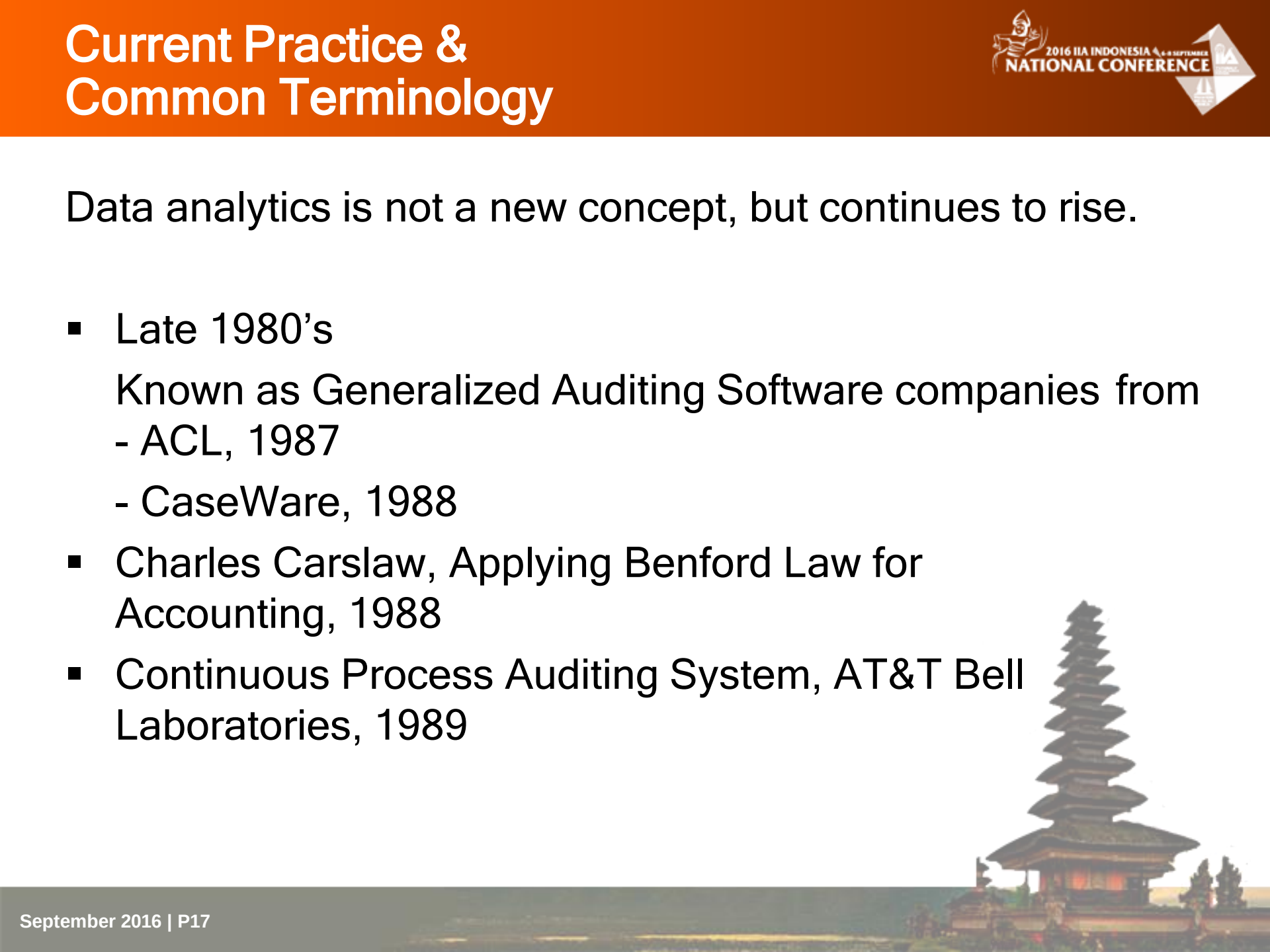
Current Practice & Common Terminology

Data analytics is not a new concept, but continues to rise.

- Late 1980's

  Known as Generalized Auditing Software companies from
  - ACL, 1987

  - CaseWare, 1988
- Charles Carslaw, Applying Benford Law for Accounting, 1988
- Continuous Process Auditing System, AT&T Bell Laboratories, 1989



Current Practice & Common Terminology

Internal Audit has been using data analysis techniques since the 1990s when CAATs (Computer Assisted Auditing Techniques) first became a 'buzz' acronym.

The industry has now progressed ..

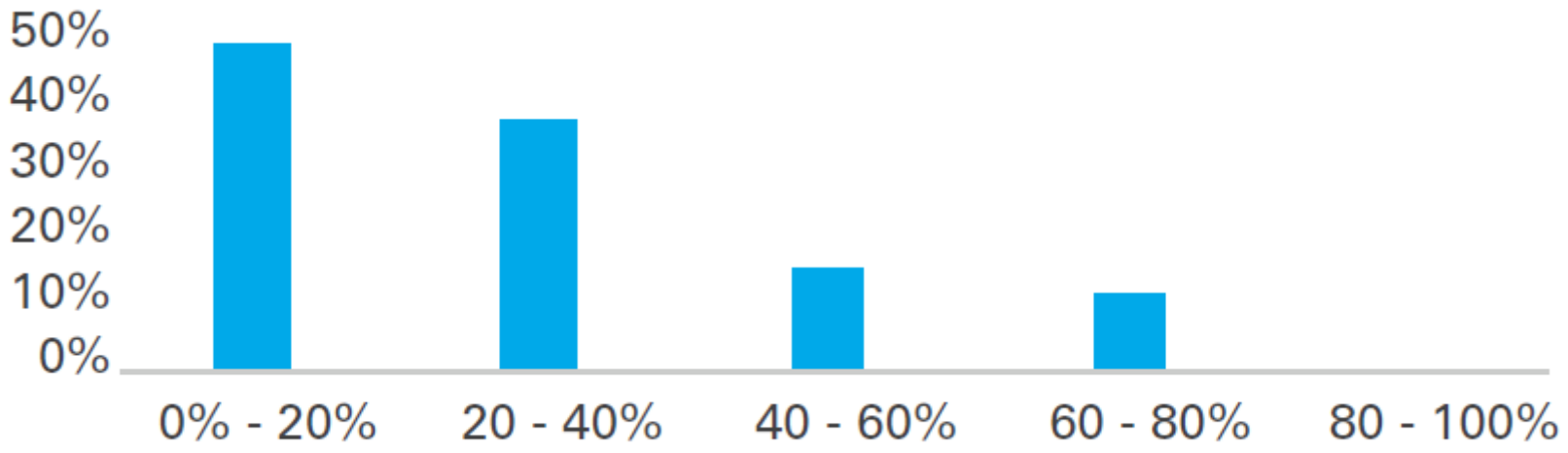
from CAATs → to Analytics

The difference is **analytics goes beyond control testing** helping understand business risk and tell the business something not know.

Leveraging data analytics (DA)

Leveraging Data Analytics

Indicate the proportion of your audits that leverage DA?



2015 KPMG Survey, Data & Analytics-enabled Internal Audit

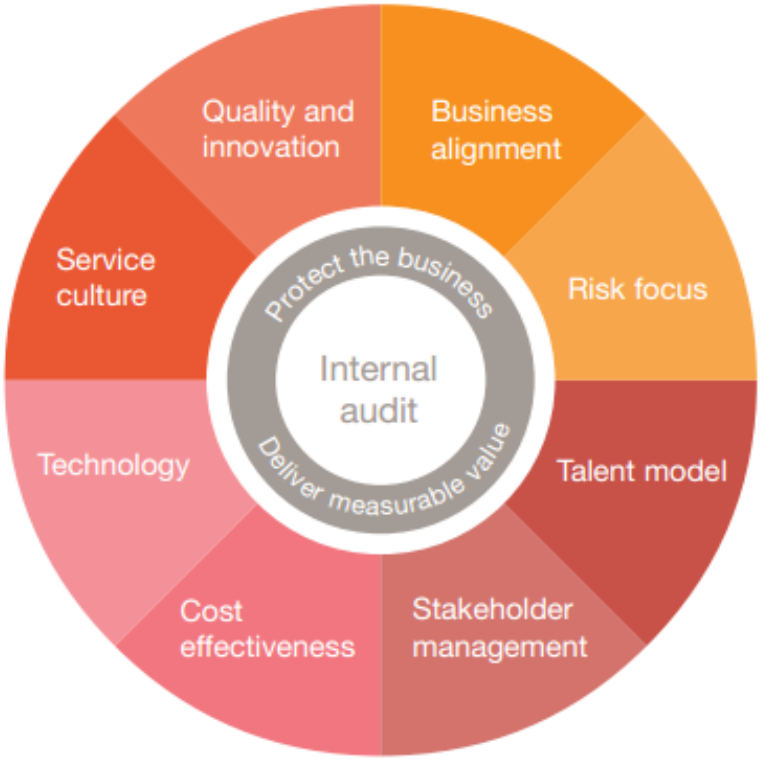
Leveraging Data Analytics

How Internal Audit is leveraging data analytics

- As part of audit planning process (quantitative component to complement traditional qualitative process) to help enable dynamic audit planning (e.g. technology enabled, quantitative enhanced, continuous risk assessment process)
- As part of the pre-fieldwork scoping (data discovery using operational BI tools, etc.)
- As part of audit execution
- In connection with specific, tactical efforts like proactive fraud detection, compliance, etc.

Leveraging Data Analytics

Foundational Attributes



Technology

Data analytics are deployed, which allows for alignment with business areas while also providing efficiency in testing through automation.

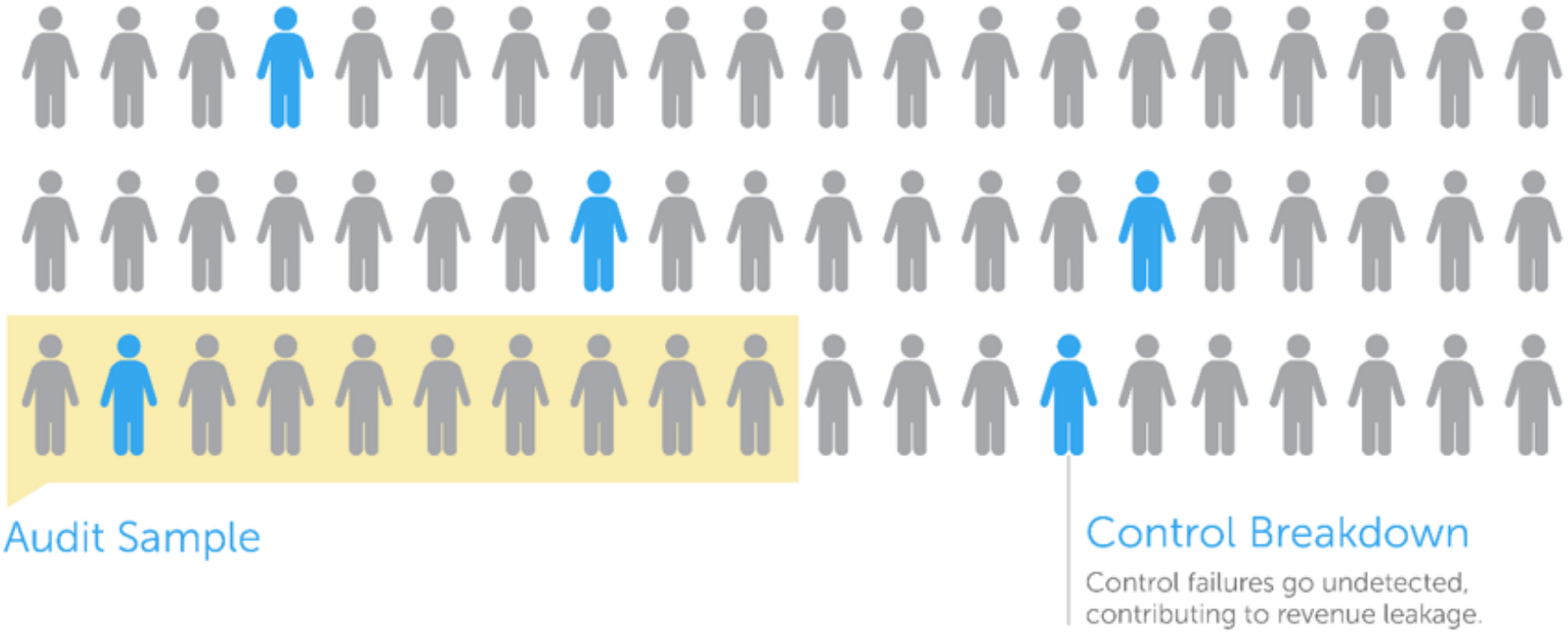
Data is utilized to provide deep and persuasive intelligence business issues and observations/recommendation.

Continuous auditing techniques are leverage to increase audit coverage to provide early warning of risk indicators and increase audit coverage.

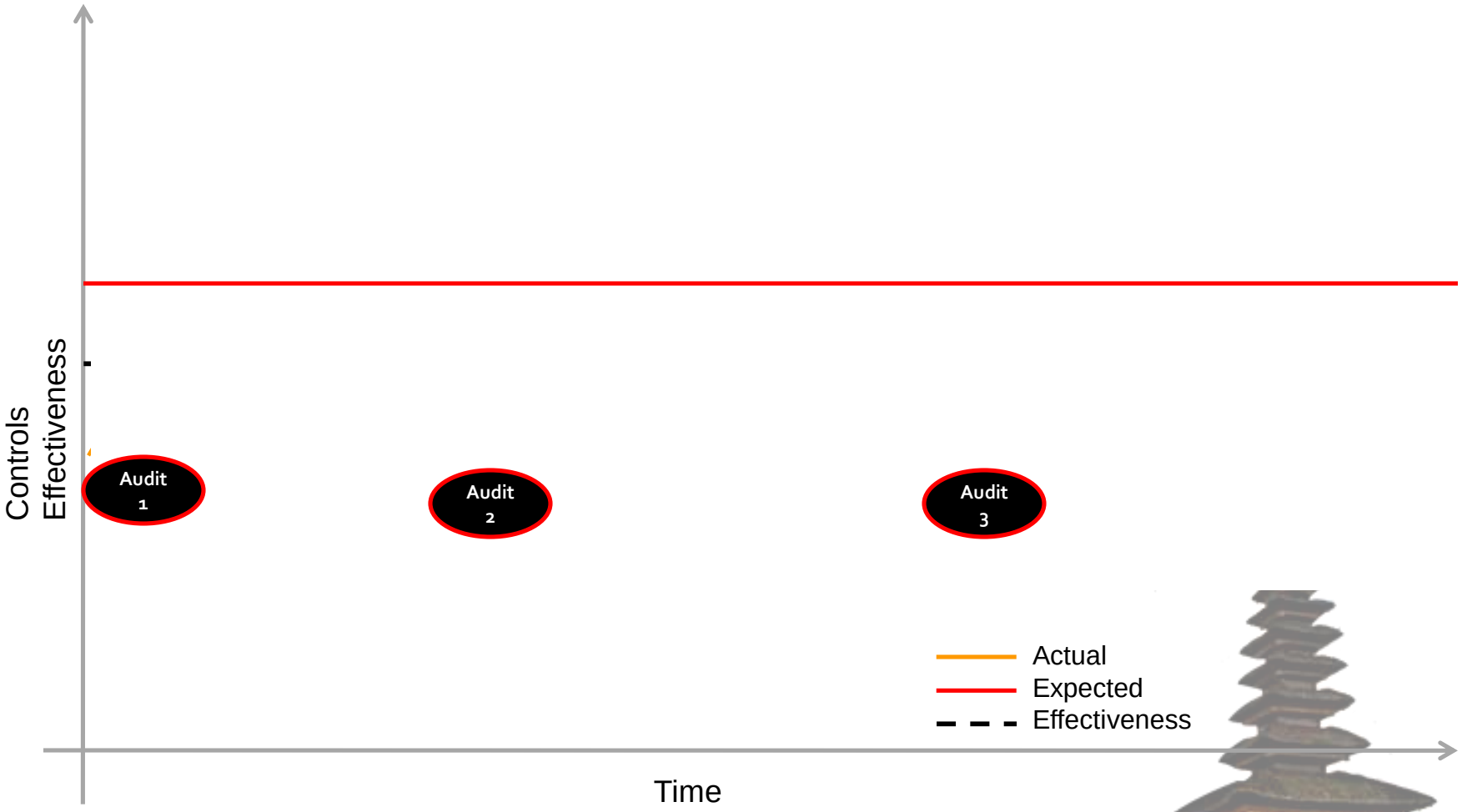
Source: PwC 2014 State of the Internal Audit Profession Study

Leveraging Data Analytics

Sampling and periodic audit are unreliable for detecting and preventing potential threats.

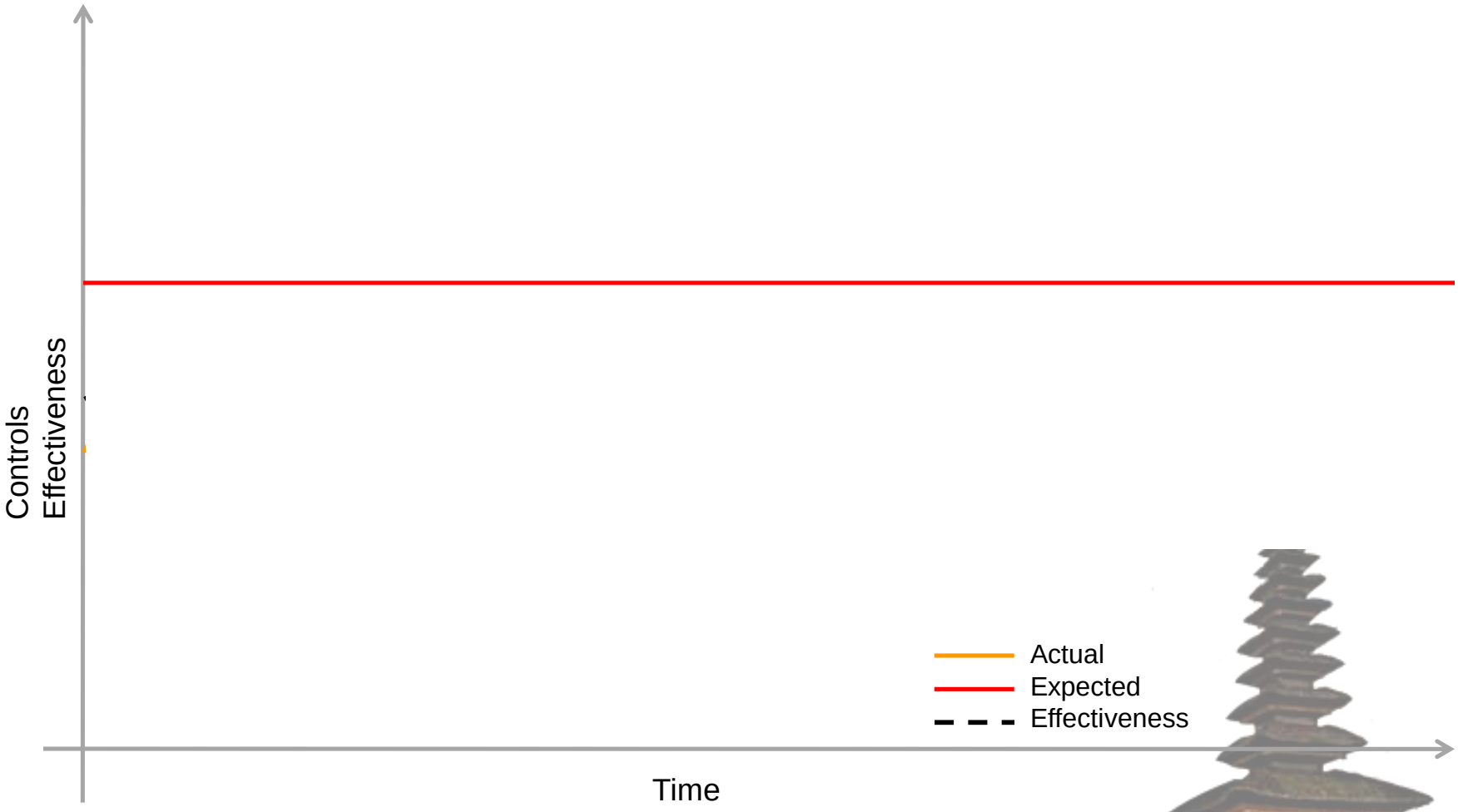


Leveraging Data Analytics



Source: Continuous Auditing From a Practical Perspective, Kevin Handscombe

Leveraging Data Analytics



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Leveraging Data Analytics

Continuous Auditing:

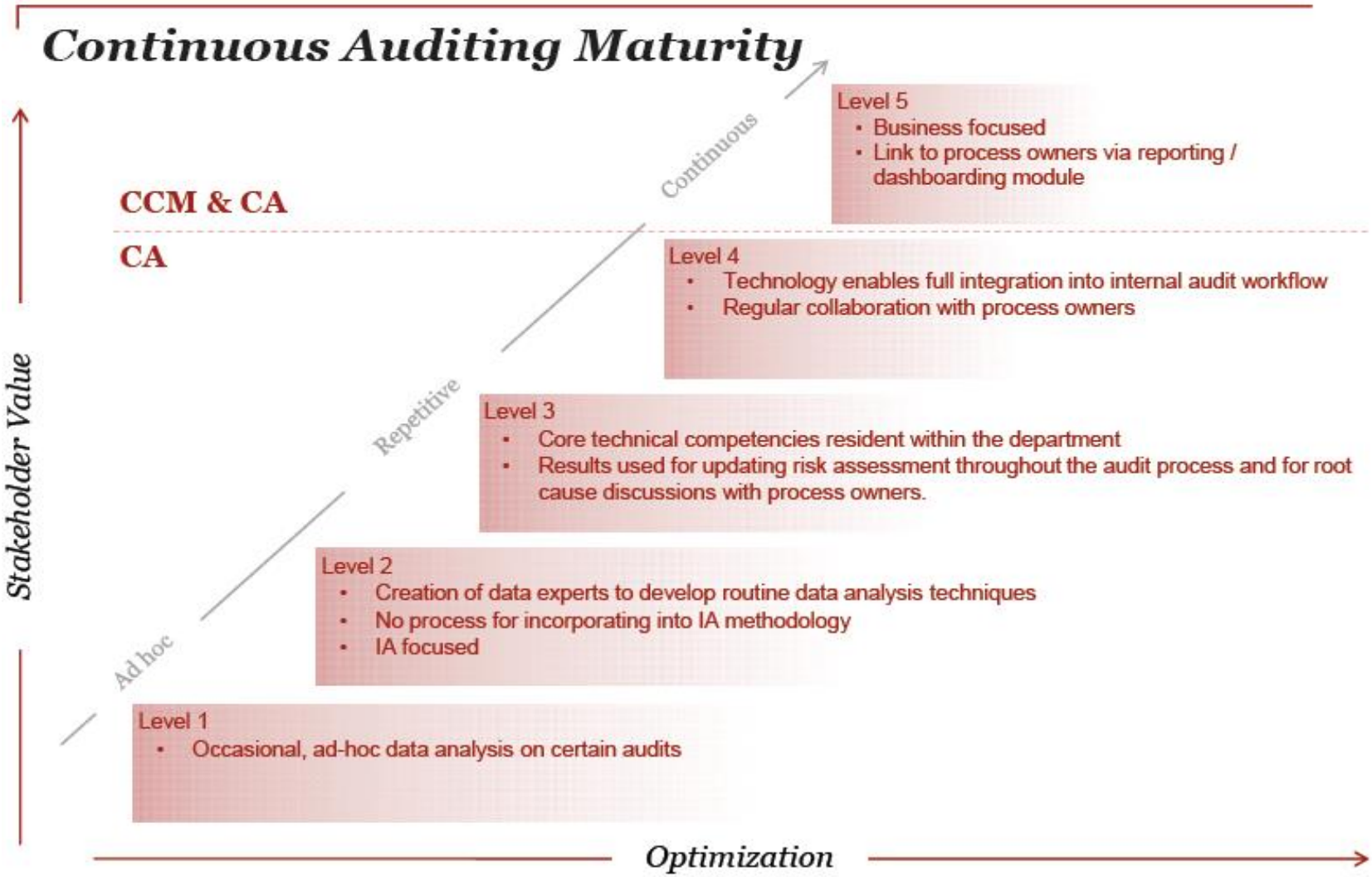
defined as any method used by auditors to perform audit related activities on a **more continuous** or **continual** basis.

It is the continuum of activities ranging from continuous control assessment to continuous risk assessment – all activities on the control-risk continuum."

-The IIA, GTAG 3: Continuous Auditing: Implications for Assurance, Monitoring, and Risk Assessment

- Continuous controls auditing using automated tools is one of the methods of continuous auditing
- Set frequency – daily, weekly, monthly, etc.

Leveraging Data Analytics

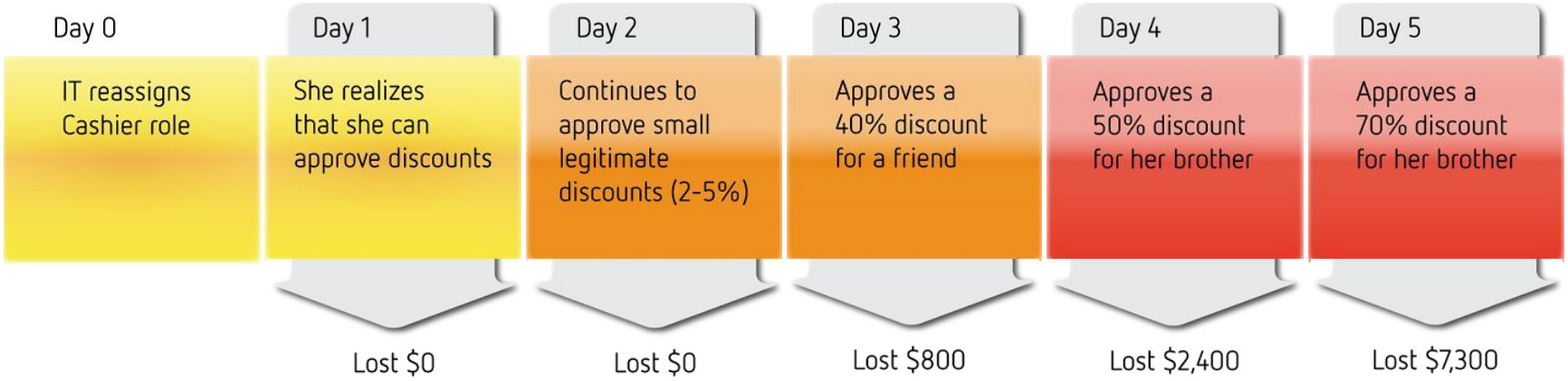


Leveraging Data Analytics

Activity	Definition	Unique Characteristics	Common Characteristics
Continuous Auditing (CA)	Collection of audit evidence and indicators by an auditor on information technology (IT) systems, processes, transactions, and controls on a frequent or continuous basis, throughout a given period	▪ Third Line of Defense ▪ Not intended to become part of the internal control environment ▪ Process can also be used for Continuous Risk Assessment for dynamic audit planning purposes	▪ Wide variety of organizational Data ▪ Technology-enabled process ▪ Analytic capabilities include: – Efficient ETL processes – Flexible types of analytics – Scalable and extendable – Frequency can be modified
Continuous Monitoring (CM)	Feedback mechanism (monitoring method) used by management to ensure that controls operate as designed and transactions process as prescribed	▪ First and second lines of defense ▪ Responsibility of management ▪ Important component of the internal control structure ▪ Can provide automated controls and processes	▪ Dynamic reporting with actionable output ▪ Workflow management capability ▪ Integration with a process

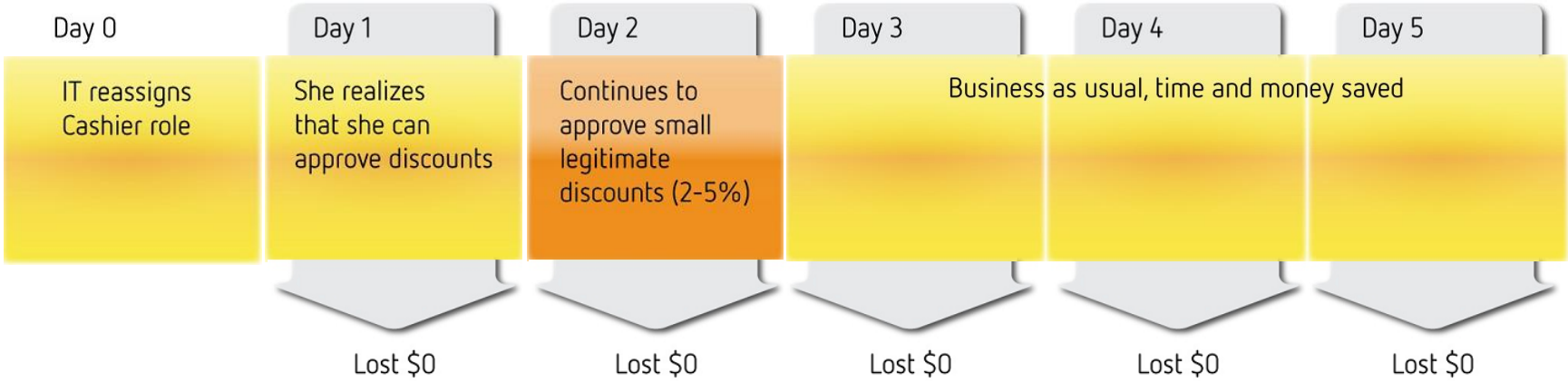
Definitions taken from KPMG LLP's *Continuous Auditing and Continuous Monitoring: Transforming Internal Audit and Management Monitoring to Create Value*, 2008

Leveraging Data Analytics



Month 6 Lost over $300,000

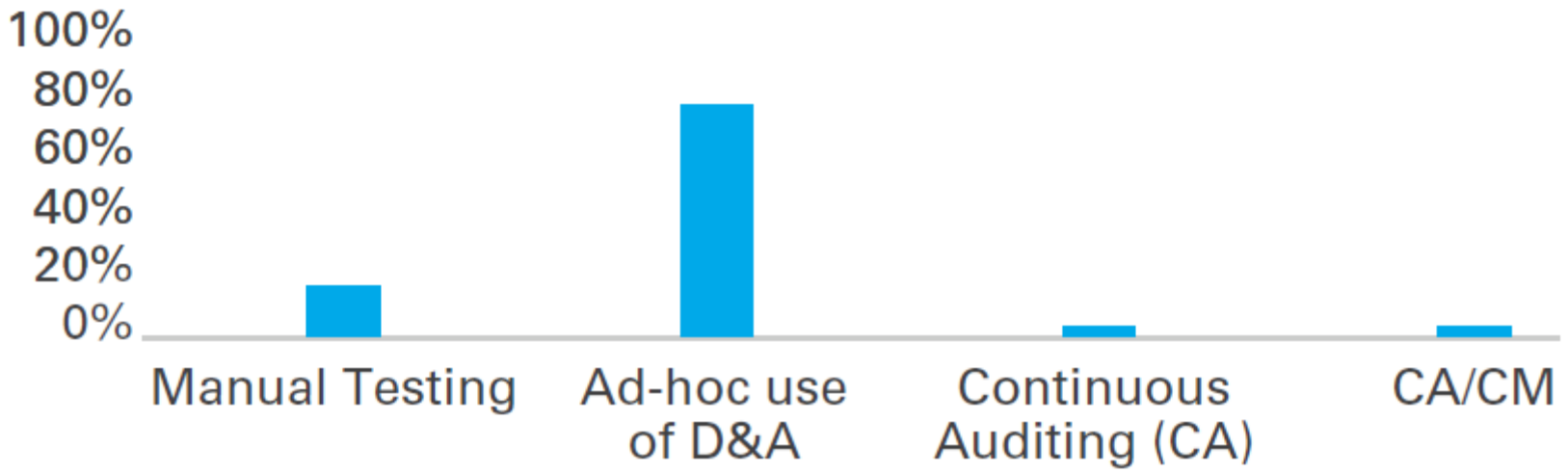
Leveraging Data Analytics



Detect	**Alert # 1 Store Manager** Segregation of Duties violated.	**Alert # 2 Escalation: Loss Prevention Officer** System Abuse – same user creating and approving discount.	
Correct	**No Action Taken**	**I.T. ALERTED. Cashier's privileges revoked**	
Protect			Business as usual, time and money saved

Leveraging Data Analytics

Select your DA maturity level for internal audit purposes?



2015 KPMG Survey, Data & Analytics-enabled Internal Audit

Common Concern to CA Implementation

Common Concern to CA Implementation

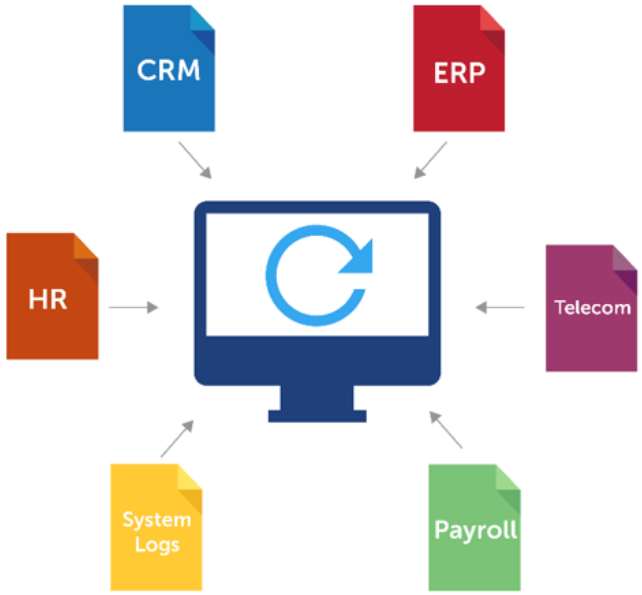
Concern # 1

I have too many disparate system

Common Concern to CA Implementation

Disparate System

- Access data from any source
- Pull data from:
  - ERP (SAP, Oracle, etc.)
  - Legacy systems
- Access data dumps:
  - Data files
  - Reports
  - Spreadsheets, PDF



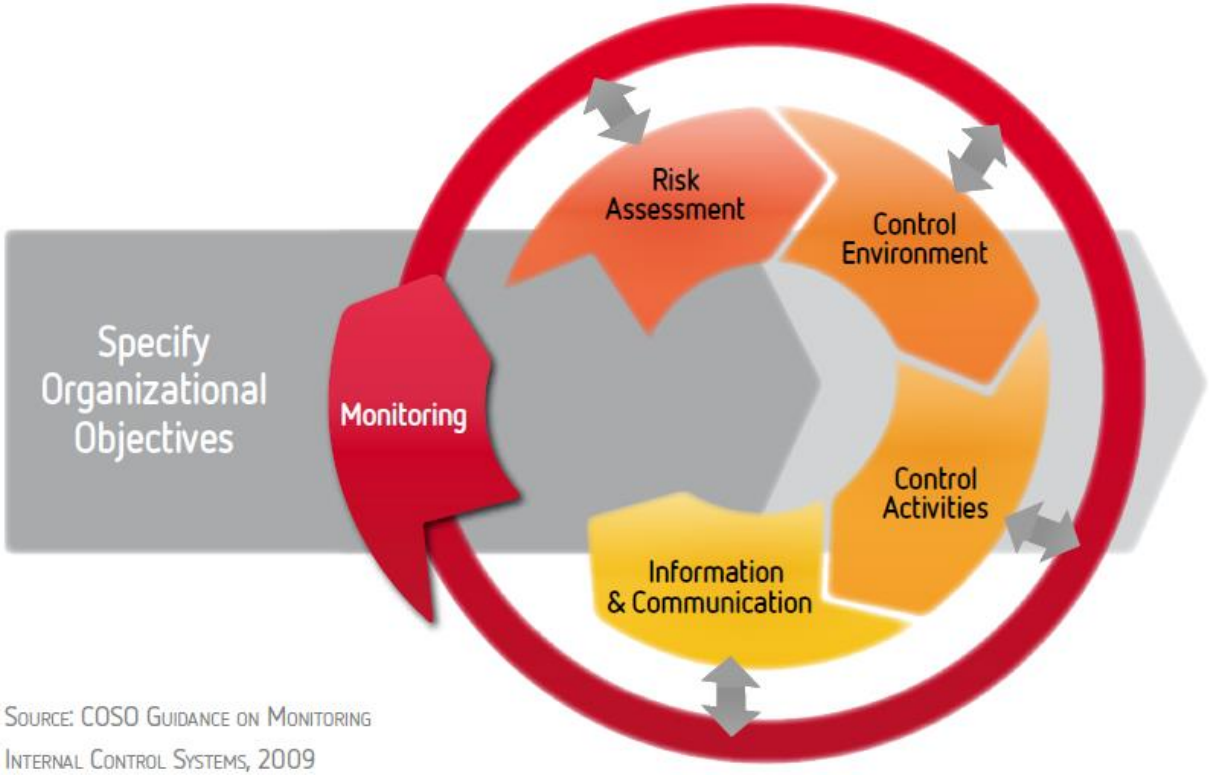
Common Concern to CA Implementation

Common Concern to CA Implementation

Concern # 2

This already covered by my GRC and ERM framework

Common Concern to CA Implementation



Source: COSO Guidance on Monitoring Internal Control Systems, 2009

Common Concern to CA Implementation

Concern # 3

I will not get adequate support from my IT Department

Common Concern to CA Implementation

Building Trust

- Audit wants:
  - "Can do" attitude
  - Advice and guidance
  - Some autonomy
- IT wants:
  - Less work from them
  - Nothing to disrupts existing infrastructure
  - To ensure that it will be properly managed
  - To maintain IT standards and security

Common Concern to CA Implementation

Concern # 4

My company is too small or not relevant for CA/CM

Common Concern to CA Implementation

Size is not relevant

- Company size
  - Billion IDR to Trillion IDR Company
- Audit Department size
  - 1 person to hundreds
- Control tested
  - 5 to 500

Common Concern to CA Implementation

What matters?

- Strong leadership in internal audit, risk and compliance
- Tone from the top
- Meeting the demand of the board

Practical approach & samples

Practical approach & samples

How to start/ implement ?

simple

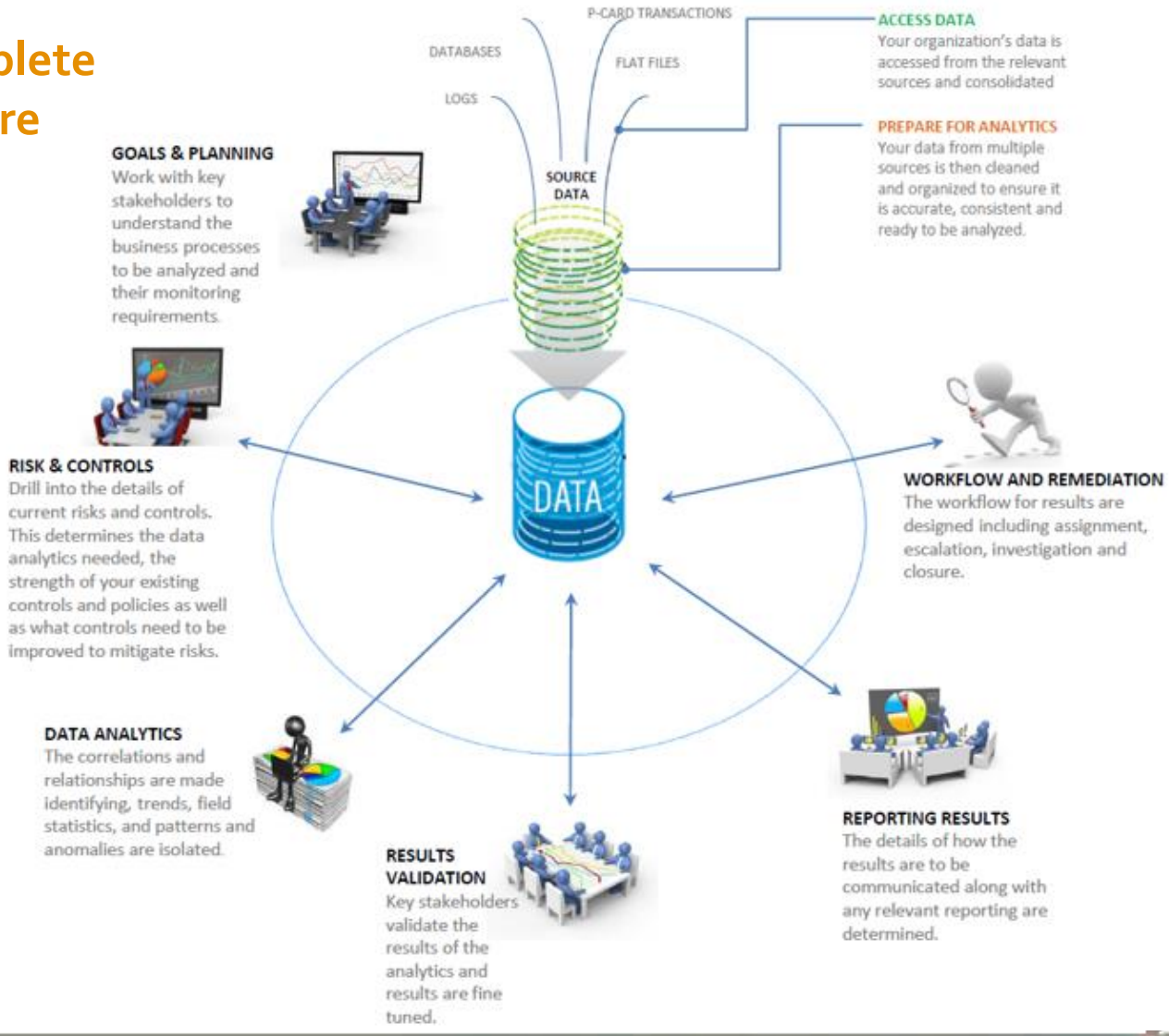
complex

Practical approach & samples

- Implement **in phase**
- Start with a **business process you know**
- Work with **data already available**
- Use **previous audit finding** as basis
- Use **existing risk and control** matrix
- Adopt **proven methodologies**

Practical approach & samples

Complete Picture



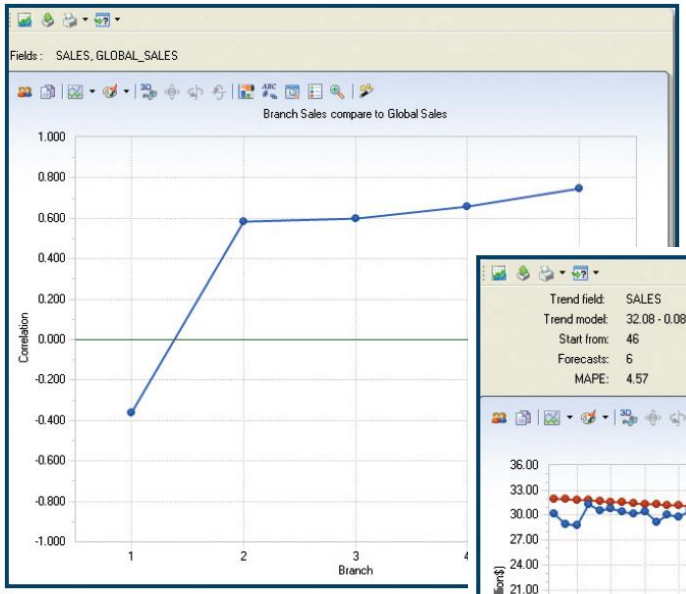
Practical approach & samples

Analytical Methods can be used

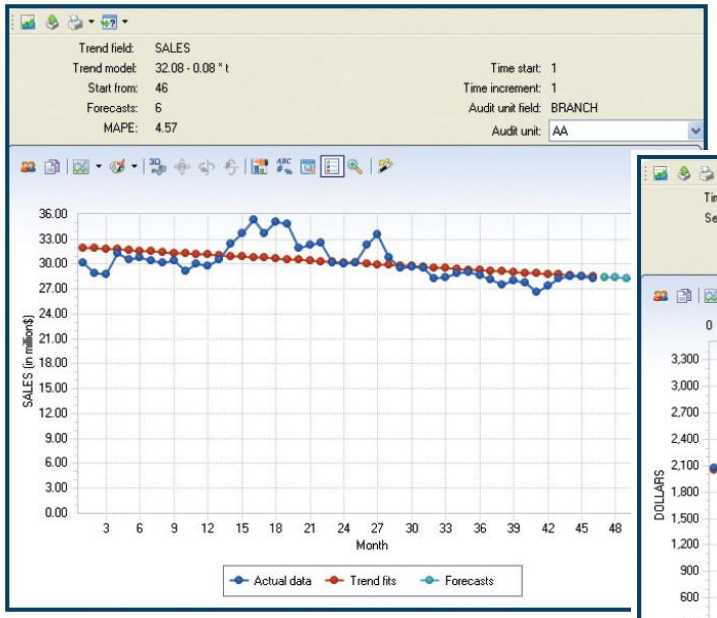
- Correlation analysis
- Regression
- Benford's Law
- Visualization
  - Tree Map

Practical approach & samples

Correlation



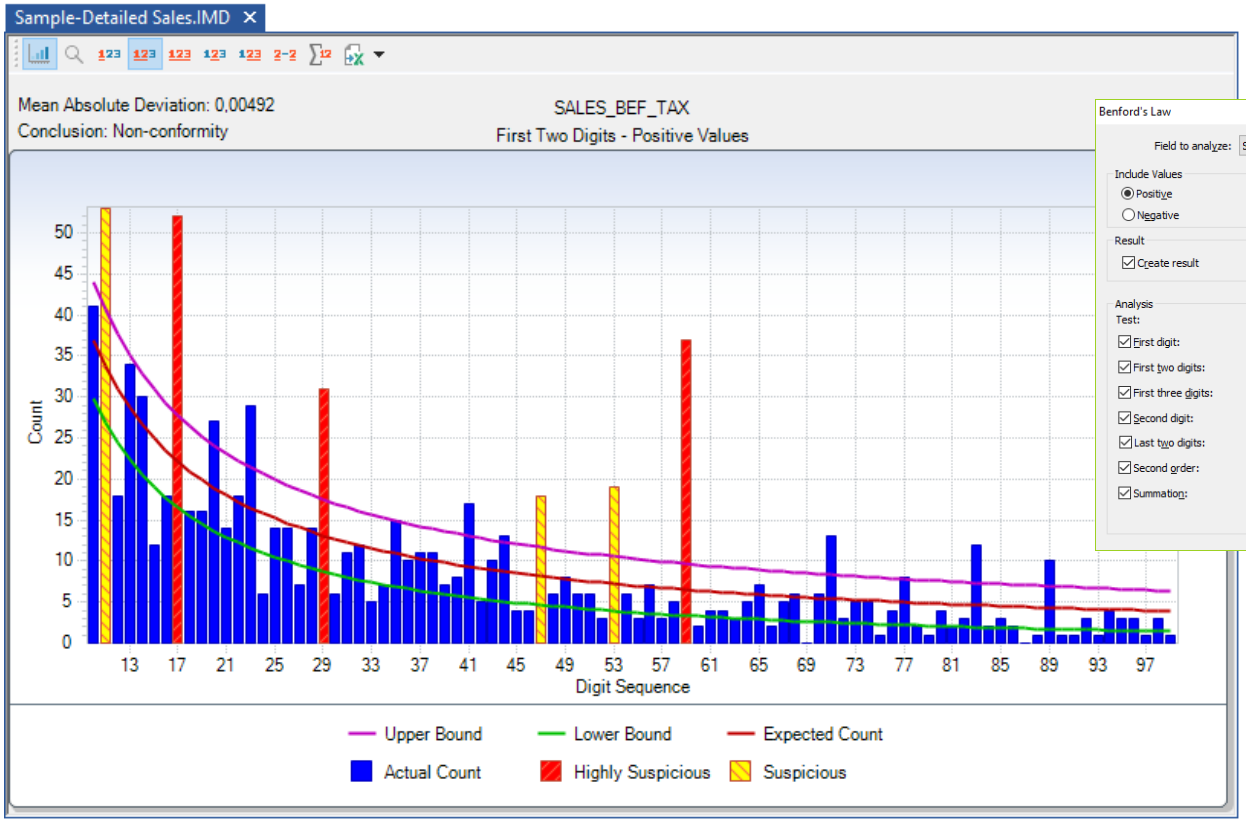
Trend Analysis

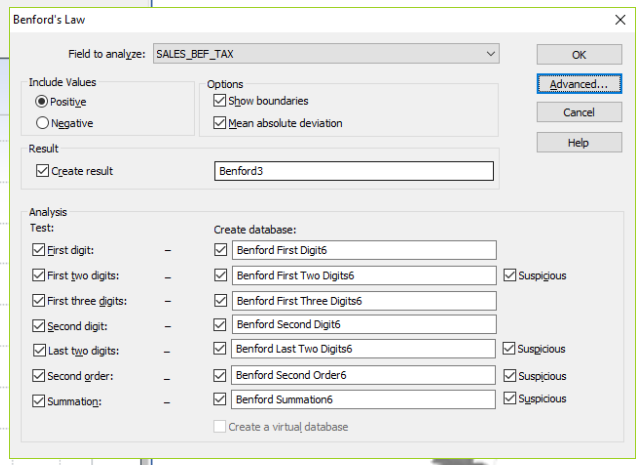


Time Series

Practical approach & samples

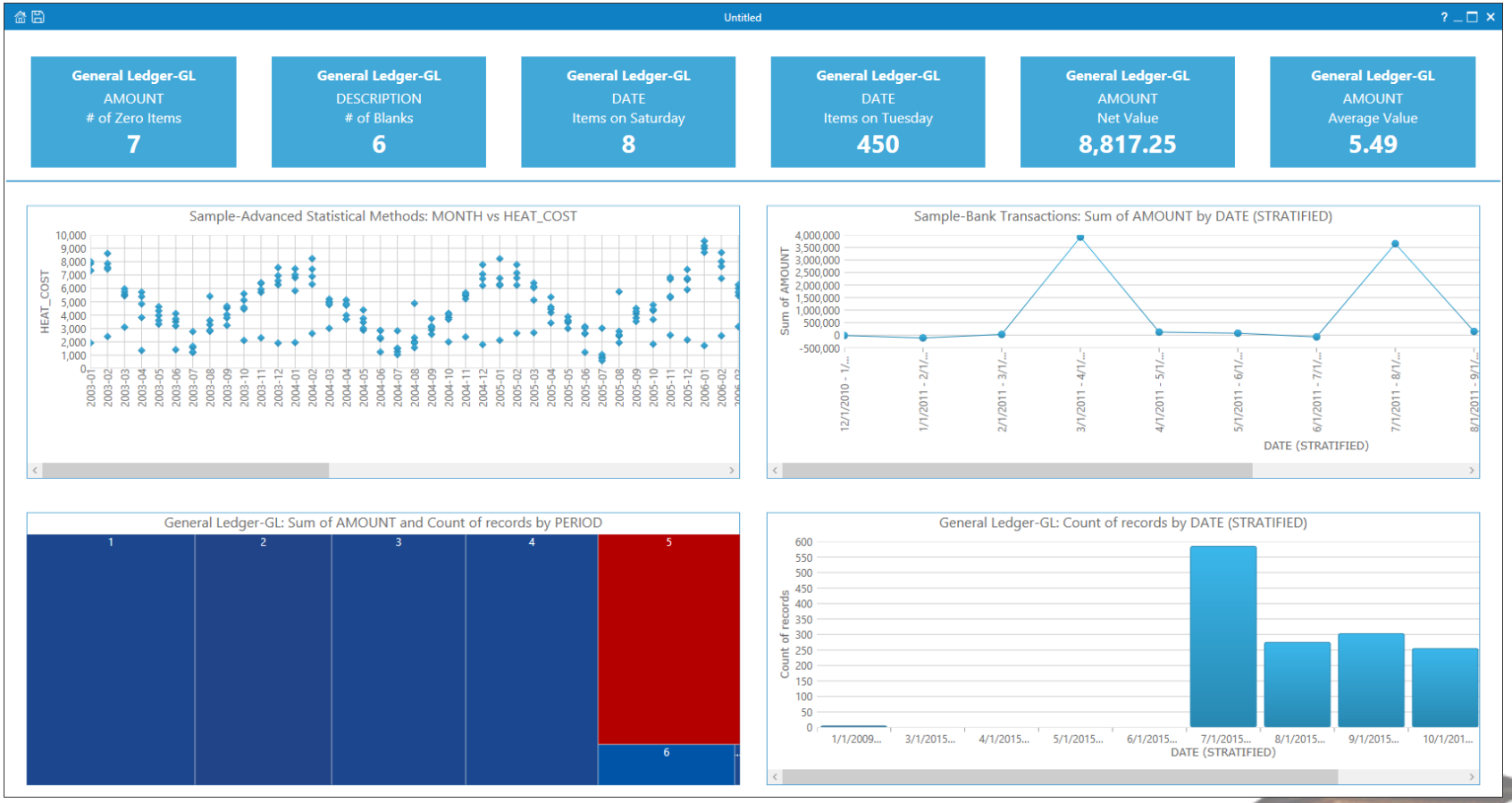
Benford's Law





Practical approach & samples

Data Visualization



Practical approach & samples

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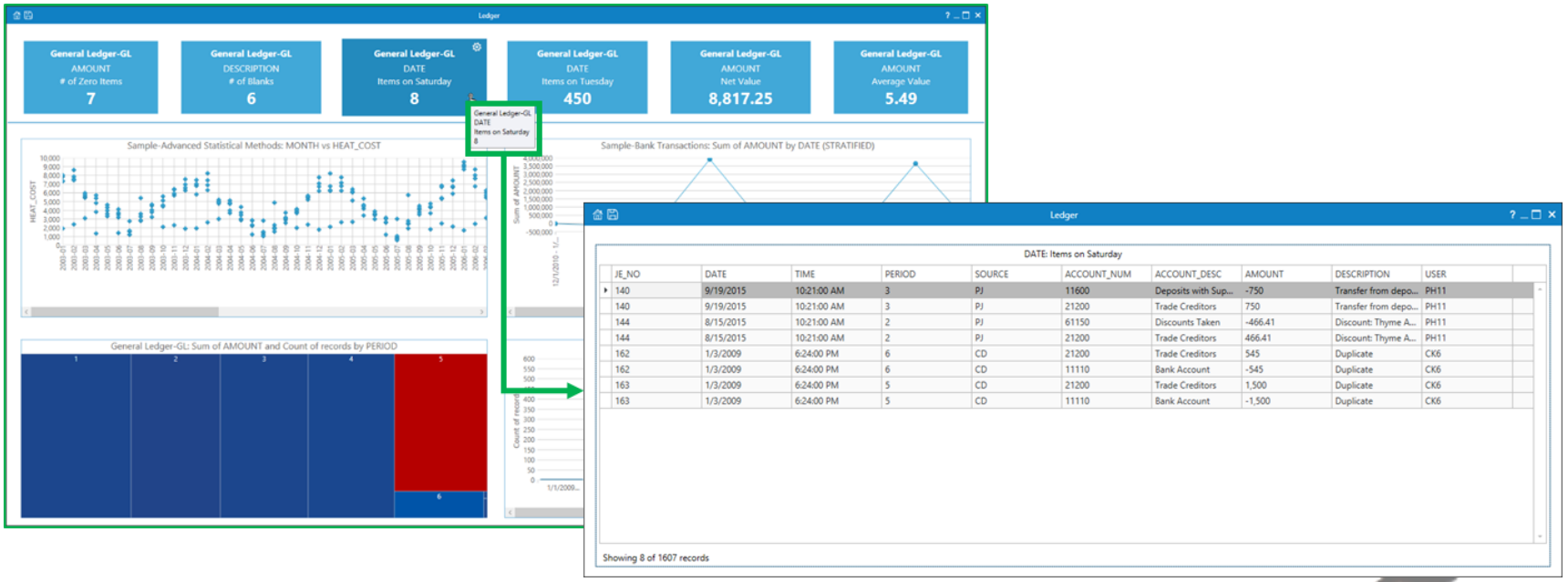
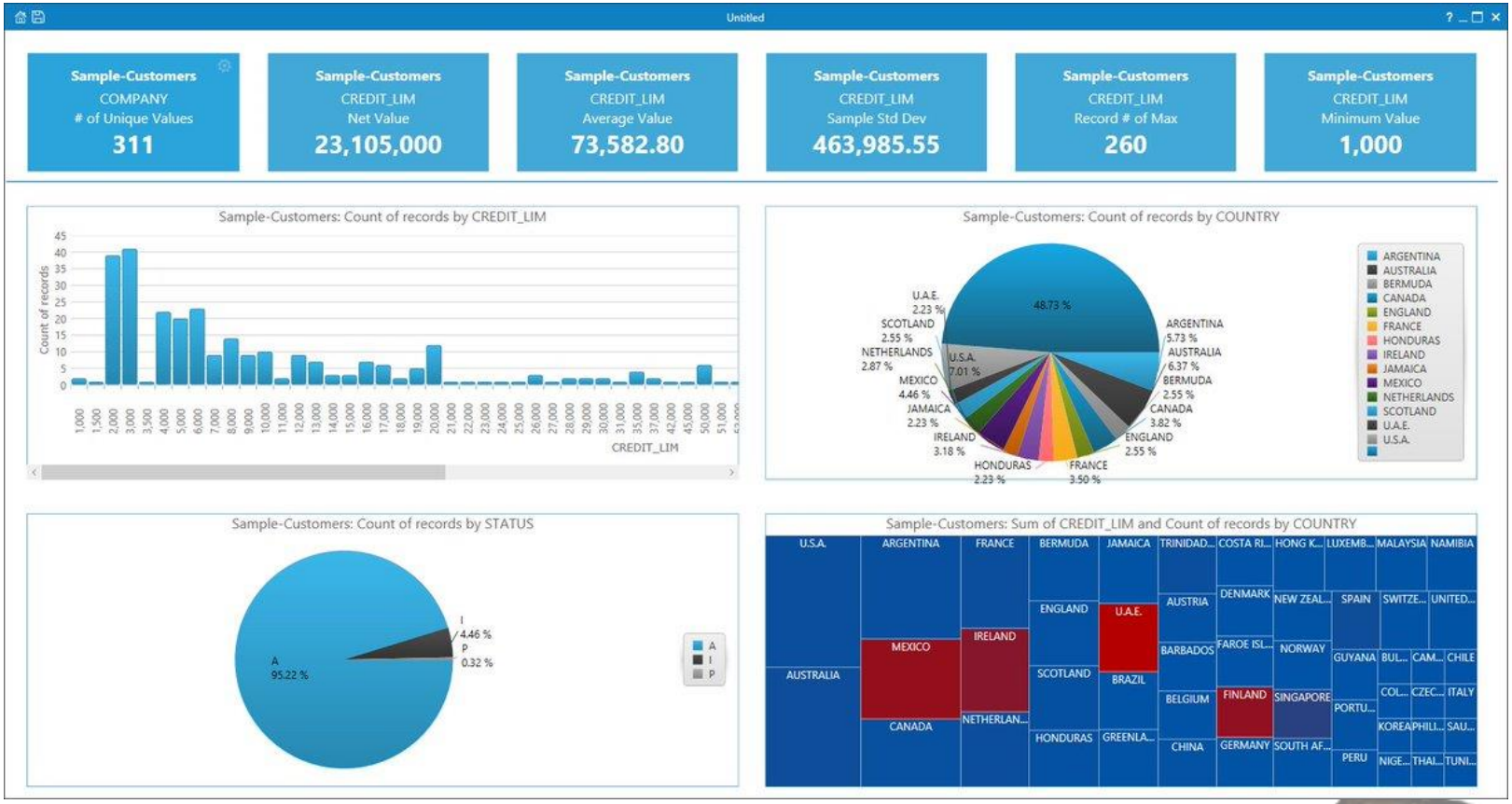


Practical approach & samples

Data Visualization – Tree Map

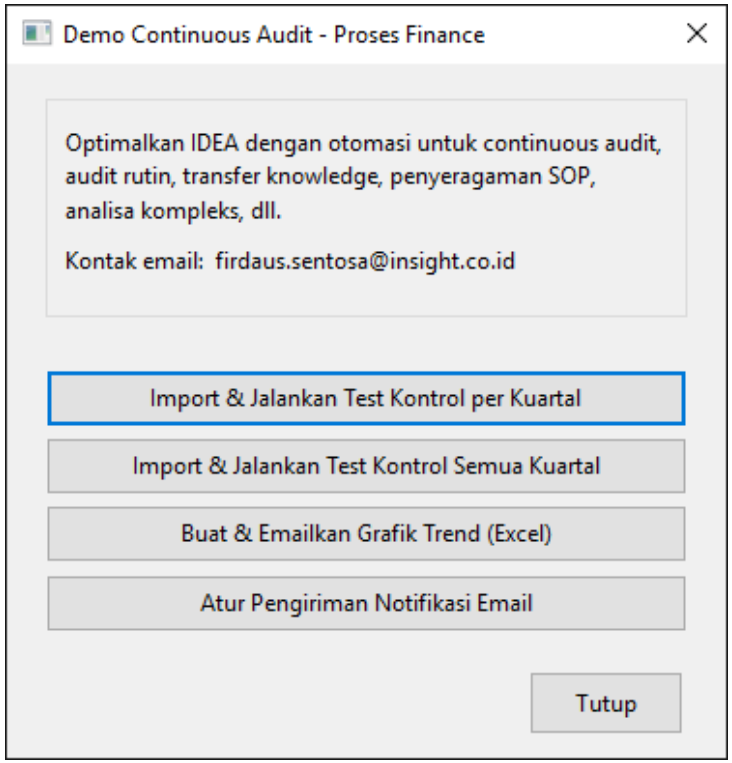
Practical approach & samples

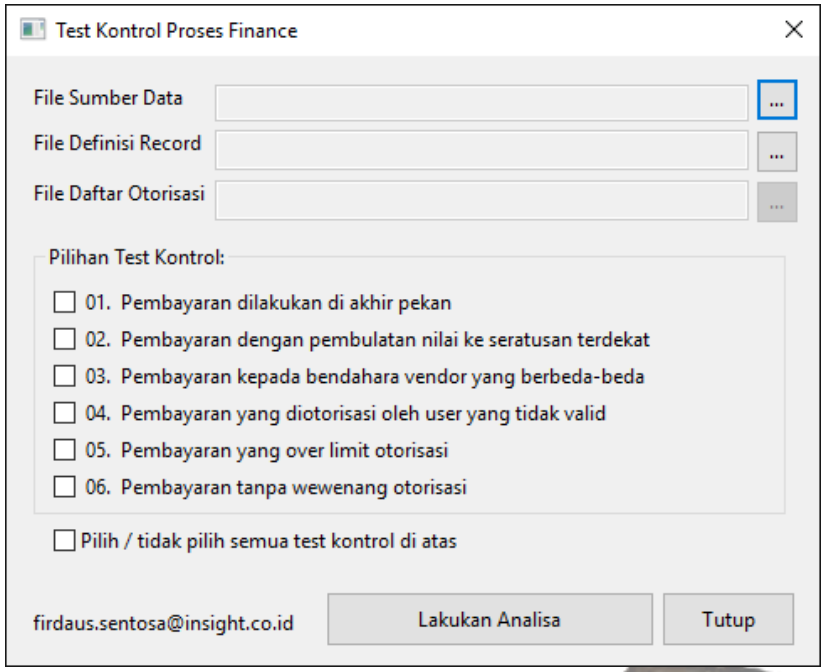
Data Visualization



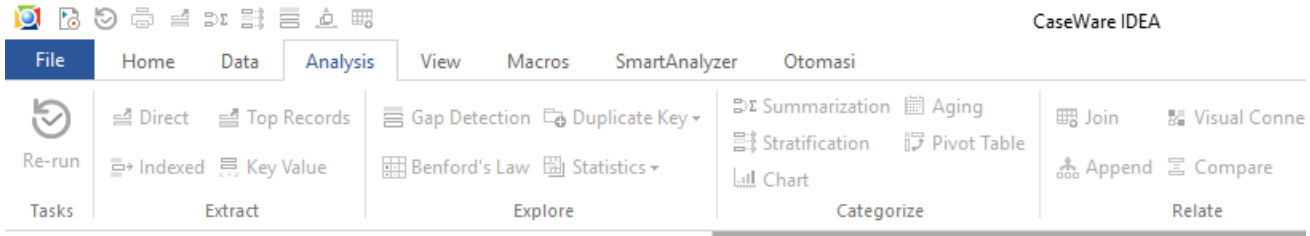
Use Case Screenshot:
Leveraging Desktop Tools

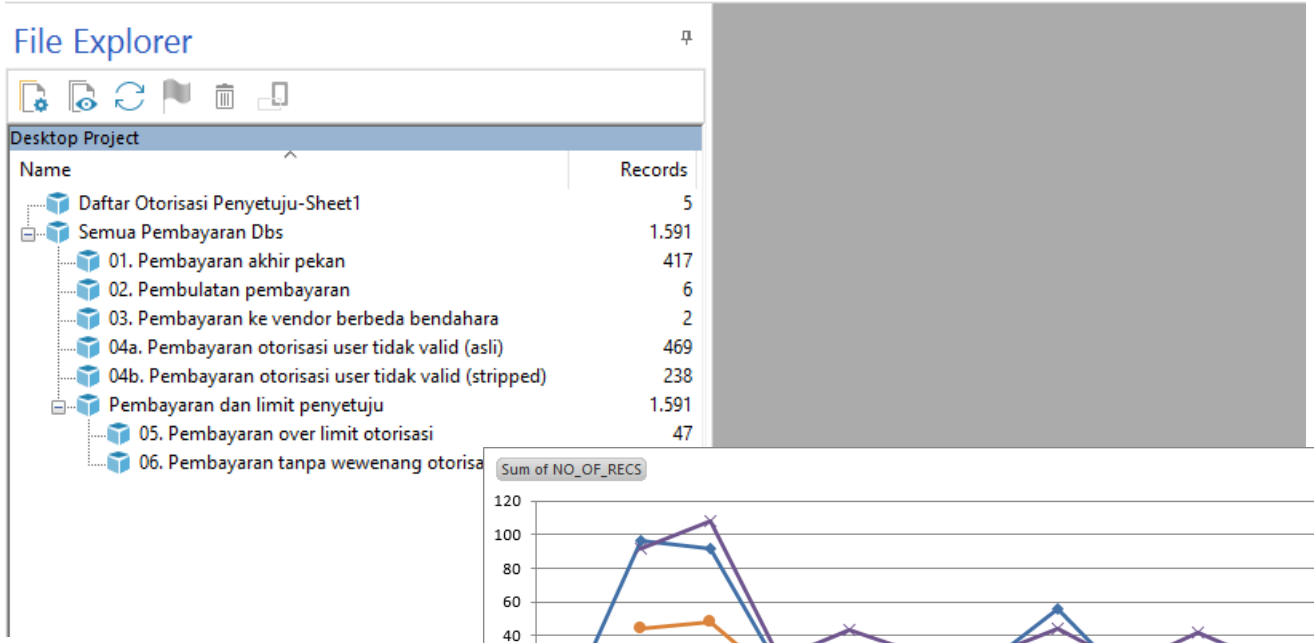
Practical approach & samples

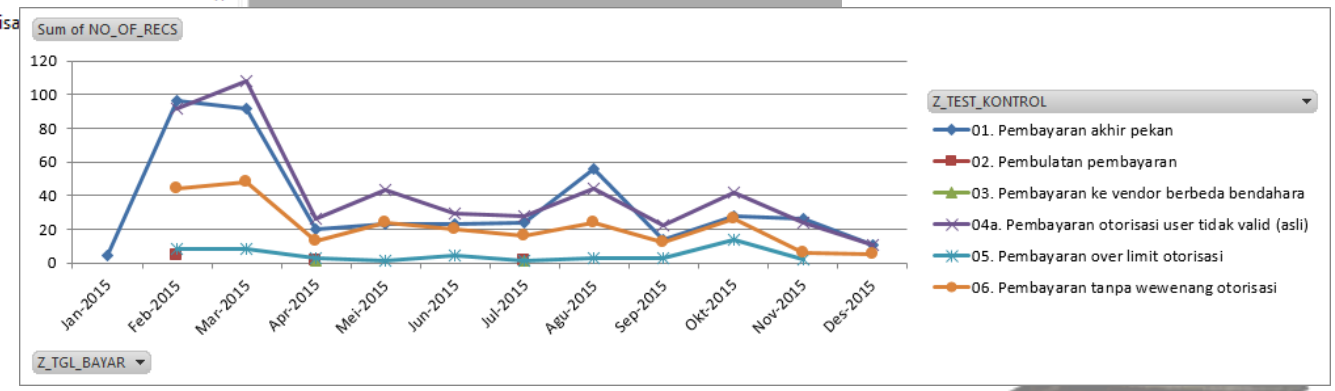




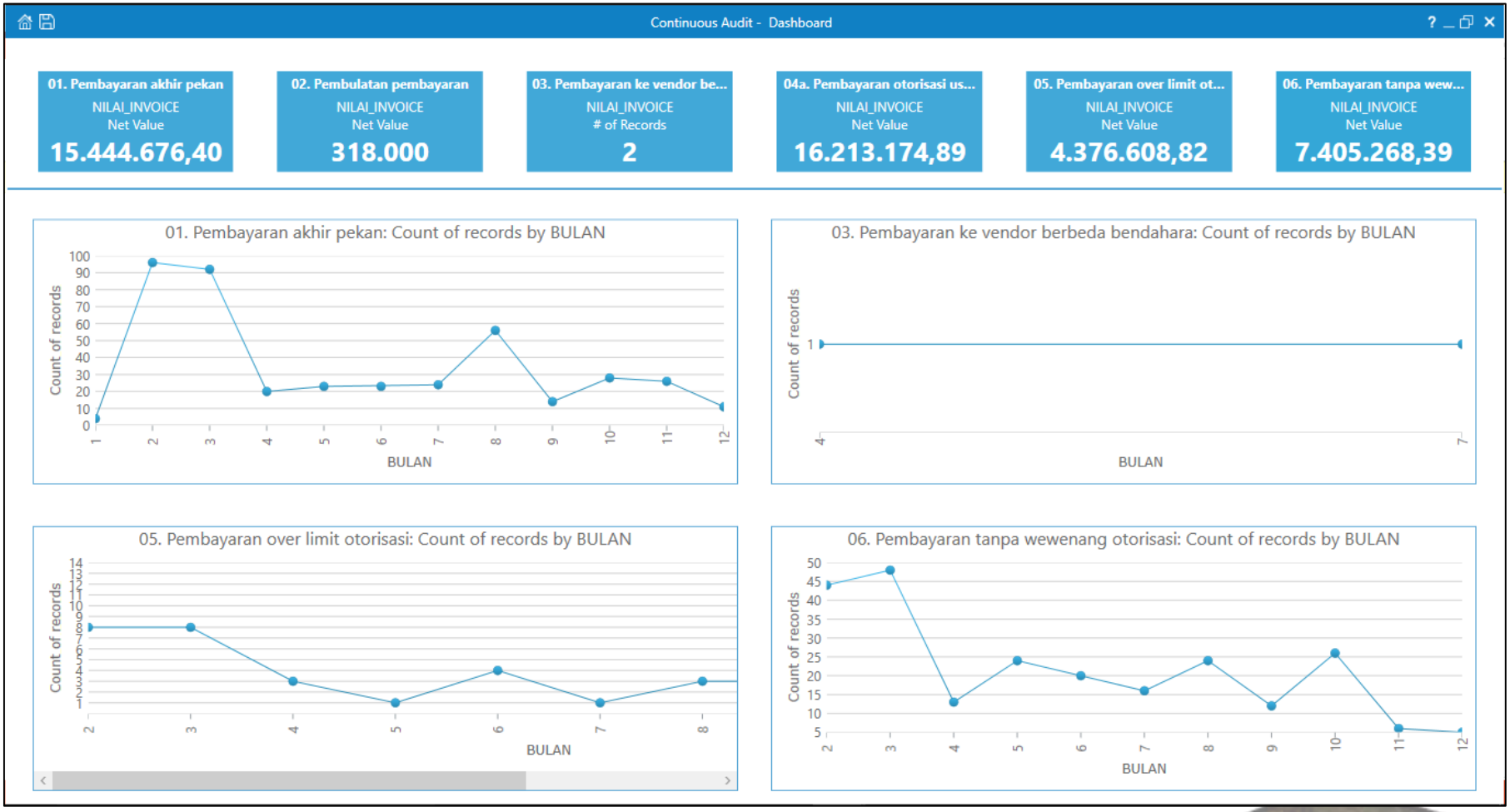
Practical approach & samples



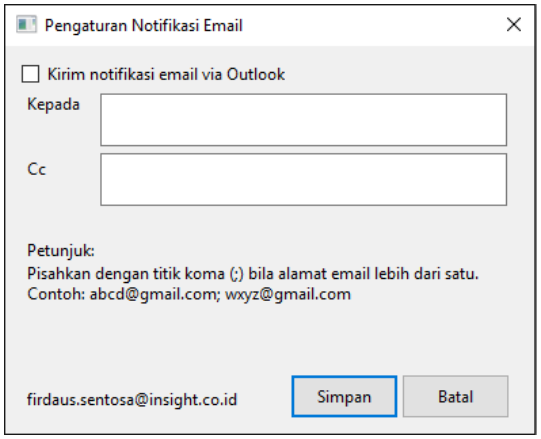


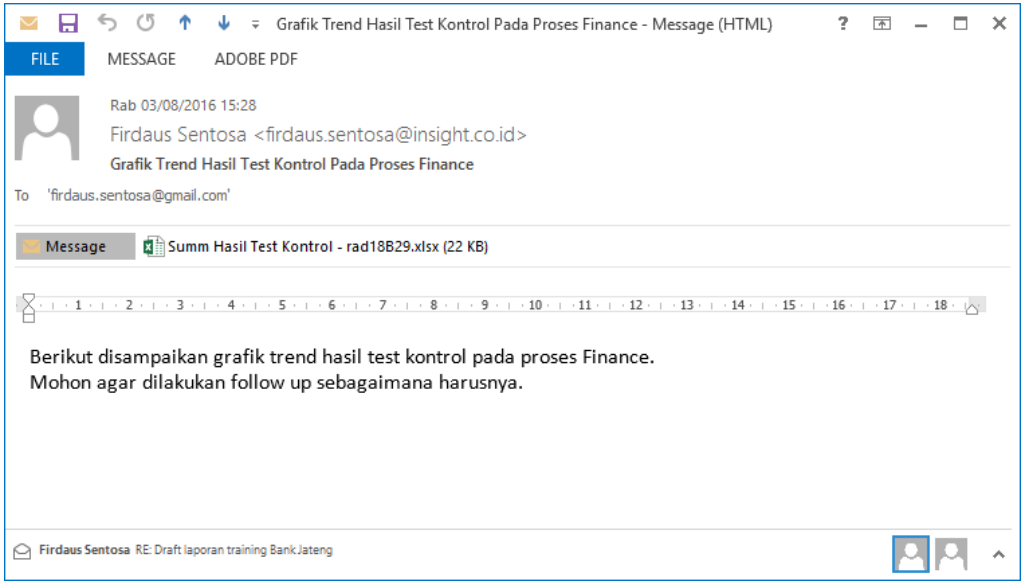


Practical approach & samples



Practical approach & samples

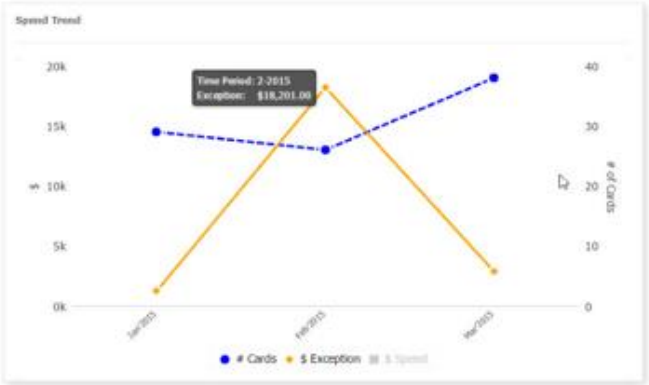




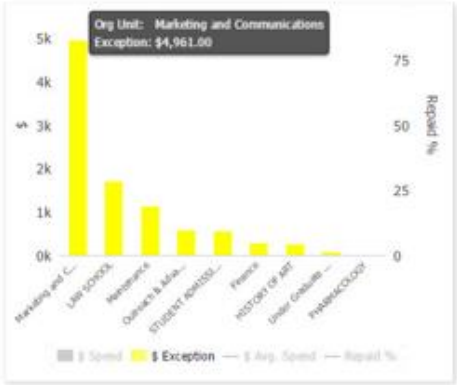
Use Case Screenshot:

Leveraging Data analytics using CA/CM Solution

Practical approach & samples



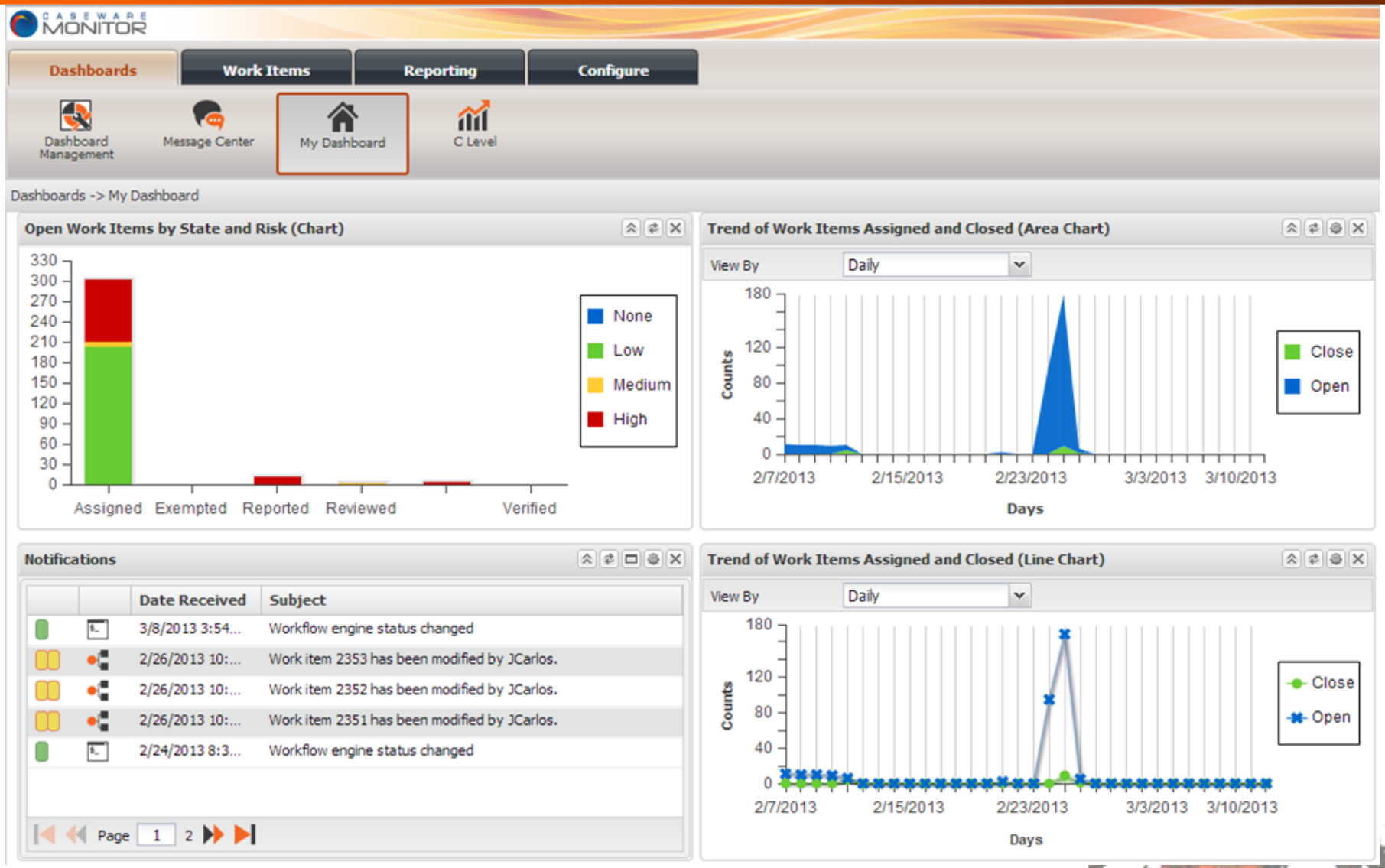
Significant spike



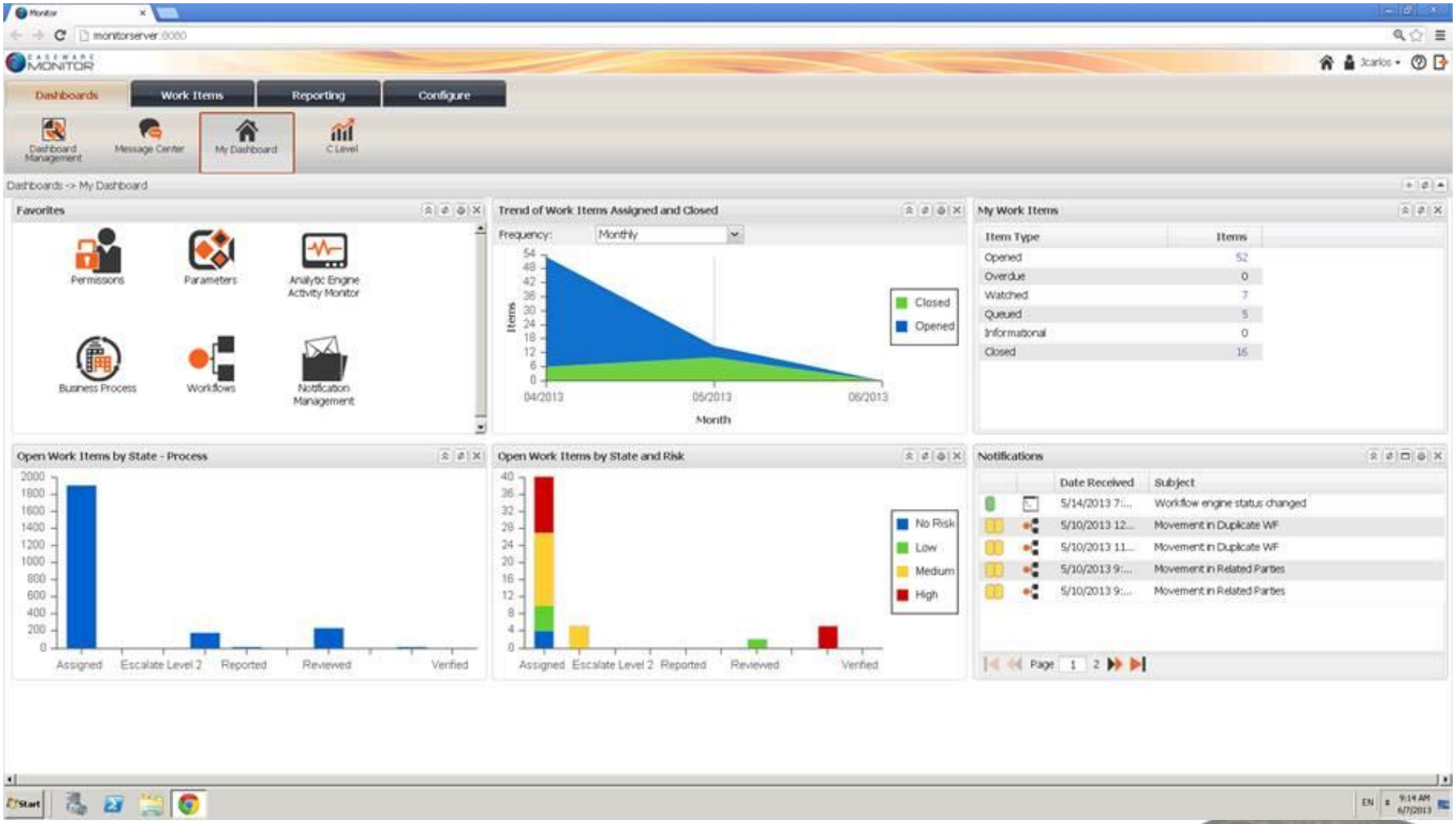
Identify outliers

See trends and patterns

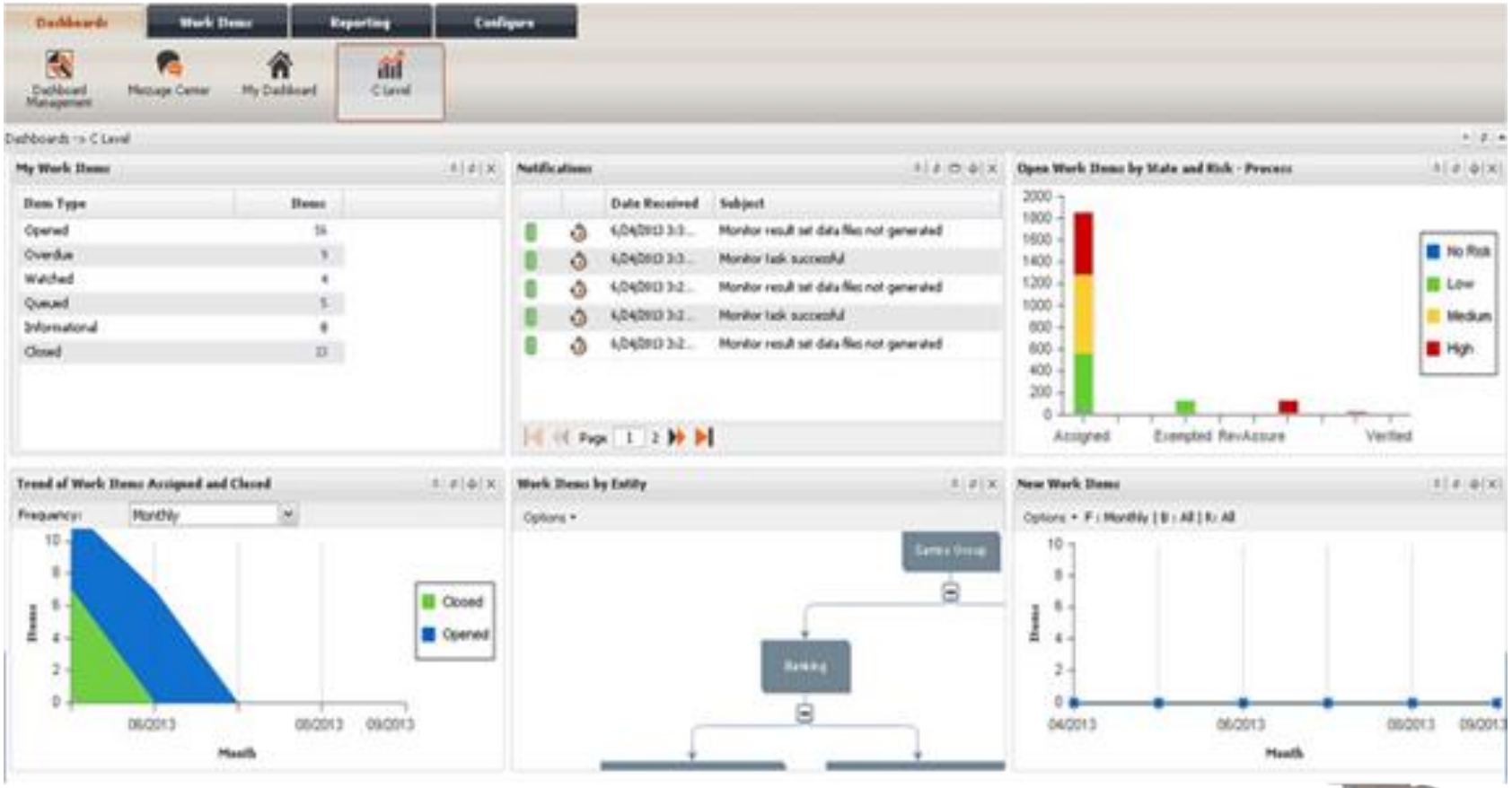
Practical approach & samples



Practical approach & samples



Practical approach & samples



Conclusion

Conclusion

Data Analytics & Continuous Auditing Facts

- DA, CA (and CM) always adds value
- The business is demanding it
- The ROI is exceptional
- The technology exist today

Conclusion

Continuous change

Staying ahead of risk allows you to evolve your business processes one small step at a time rather than trying to implement mass changes.

Q & A

Contact

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