

ORACLE®

# CON-6657



## A Practical Path to Enterprise Data Governance

October 1–5, 2017  
SAN FRANCISCO, CA

Mike Matthews  
Senior Director, Product Management · Oracle

Kraig Sauter  
Kaygen Enterprise Solutions

Neha Kaptan  
Information Quality and Governance Leader · Cummins

October 4<sup>th</sup> 2017

**ORACLE**

# Safe Harbor Statement

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

# Oracle Cloud Platform



Develop & Deploy



Integrate & Extend



Publish & Engage



Analyze & Predict



Secure & Manage

Innovate with a  
**Comprehensive, Open,  
Integrated and Hybrid**  
Cloud Platform  
that is  
**Highly Scalable, Secure  
and Globally Available**

# Oracle Cloud Platform

Comprehensive

Open




Integrated



Hybrid

Oracle  
Public Cloud



Oracle  
Data  
Center

-  Data Management
-  Application Development
-  Enterprise Integration
-  Data Integration

-  Analytics and Big Data
-  Content & Experience
-  Identity & Security
-  Systems Management

Oracle Cloud  
at Customer



**Built on High Performant Oracle Cloud Infrastructure**

# Oracle Cloud Platform Momentum

**14,000+**

Oracle  
Cloud Platform  
Customers



**3,000+**

Apps in the  
Oracle Cloud  
Marketplace



**\$1.4 Billion**

FY17 Oracle Cloud  
Platform  
Revenue  
(60% YoY Growth)



**10 PaaS**

Categories where  
Oracle is a **Leader**  
According to  
Industry  
Analysts



# Oracle Cloud Platform for Integration

## Application and Data Integration

Complete

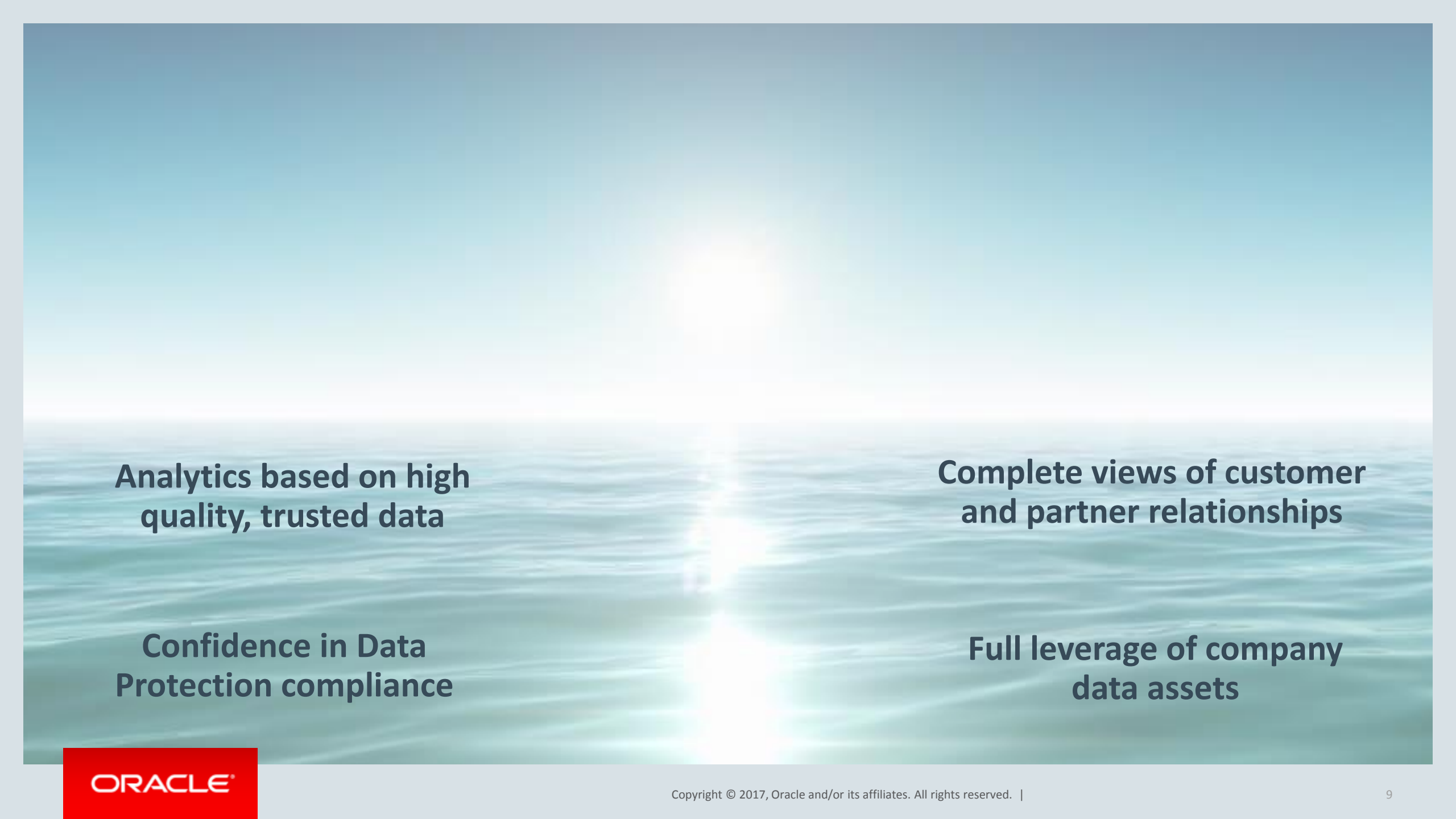
Simplified

Open



# What does strong Enterprise Data Governance look like?



A serene sunset over a vast ocean. The sun is low on the horizon, creating a bright, shimmering path of light across the water's surface. The sky is a soft, pale blue, and the water is a deep, calm blue with gentle ripples.

**Analytics based on high  
quality, trusted data**

**Complete views of customer  
and partner relationships**

**Confidence in Data  
Protection compliance**

**Full leverage of company  
data assets**

Oh...



# Data Governance is Hard...

- ❑ average cost of an unplanned data outage at \$7,900 a minute, a 41% increase from 2010, when the cost per minute at \$5,600.
- ❑ Typical data outages last 86 minutes, totaling an average of \$690,200 of costs.
- ❑ 72% of big data projects have issues with data integration reliability
- ❑ 17 month average implementation time for a BI project; 5 months before there is any usable BI artifacts
- ❑ <32% of BI projects are declared successful
- ❑ **36% confidence rate that the right data is available to the right people at the right time**
- ❑ 42% firms managing over \$200B in assets do not have regular processes and procedures to control data usage

# Essential Ingredients for good Data Governance

Data Quality tools

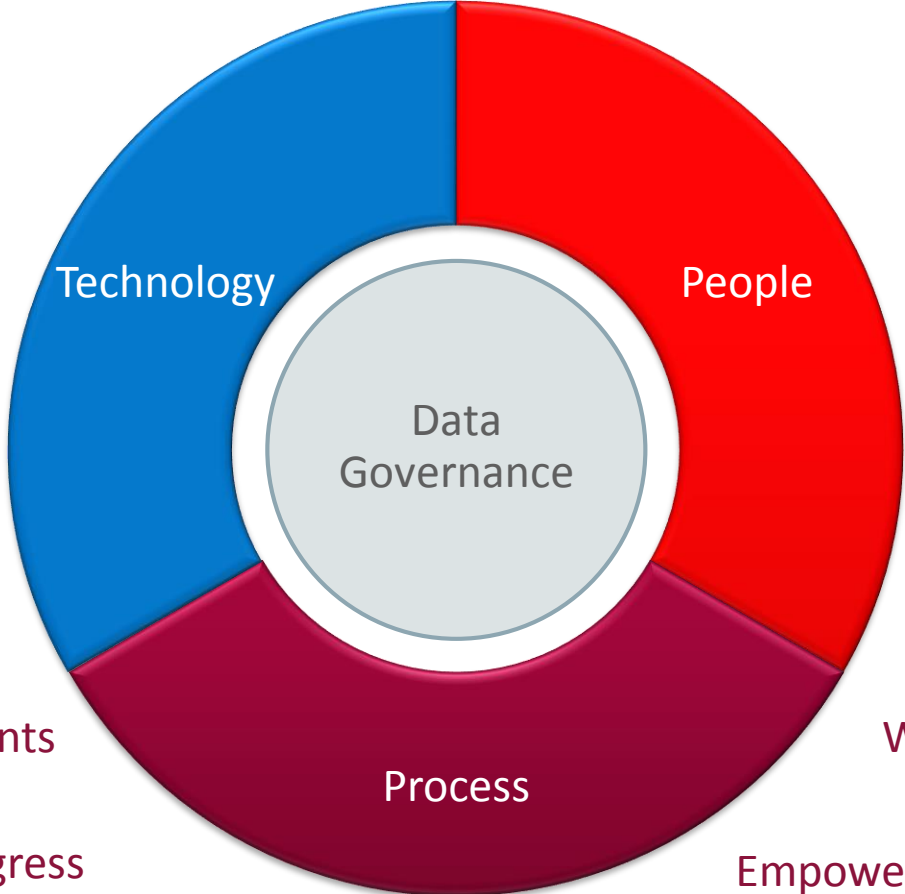
Data Standards Documentation

Metadata Management

Data Profiling and Analysis tools

Clear Baseline and Problem Statements

Ongoing Measurement of Progress



Chief Data Officer, or other Executive Owner

Data Analysts

Data Stewards

Active Data Stakeholders

Well-defined Goals and Success Criteria

Empowerment to enact Business Change





# People

Who is typically involved in Data Governance and what do they do?

# People and Operating Models

- No single Operating Model that works for everyone!
- Considerations in how to scale:
  - How many Data Domains (Customer / Product / Supplier) etc.?
  - How many source systems?
  - Do different people know the data in these domains?
- Ensure you have **Ownership** at every stage:
  - Executive – sponsorship, evangelism and funding of the Data Governance work
  - Data Quality ownership – business people responsible for the quality of data in source systems
  - Data Governance framework ownership – normally a small group of specialists providing policy, process and tools support
  - Business Rules and Data Standards ownership – defining how to measure ‘good’ in each data domain
  - Mini-project ownership – for each step towards Data Governance, identify an owner that will deliver on the business need
- **Empower** business roles (esp. Data Stewards and Data Analysts) with tools and training

# Some Key Roles and Functions



## Chief Data Officer / Executive Owner

Strategic owner of enterprise data assets

## Data Stewards

Define and own data standards

## Data Analysts

Analyze and solve data problems

## Data Stakeholders

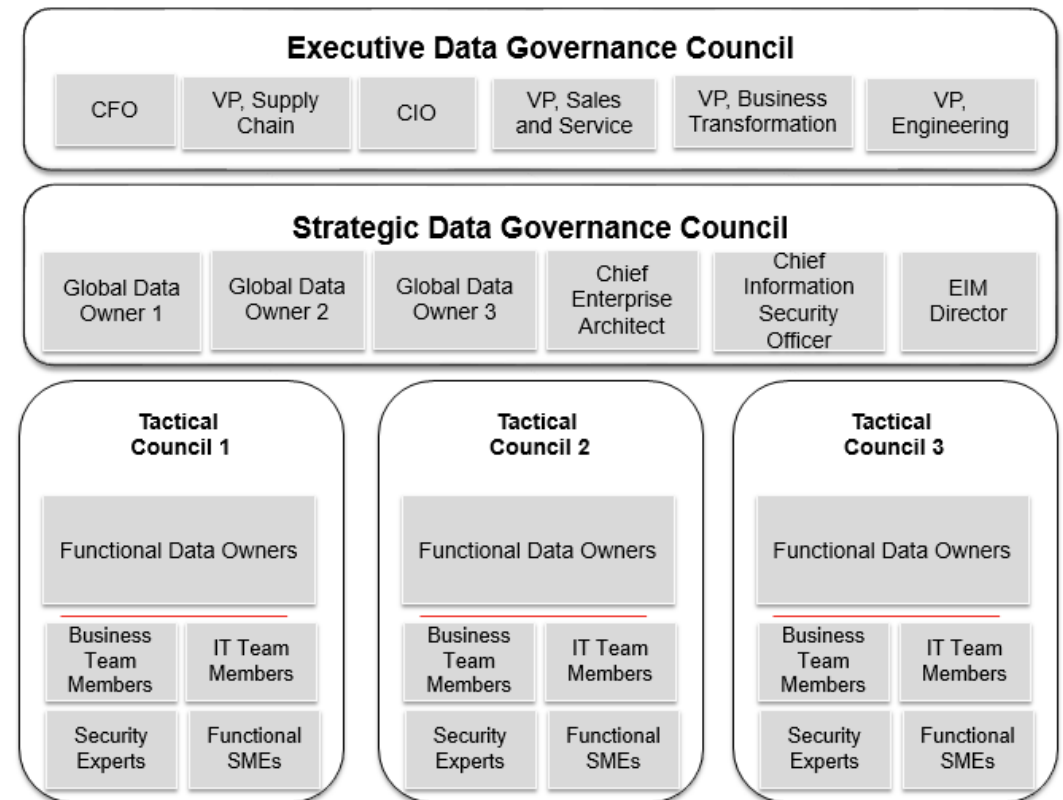
Provide data application requirements



# The Data Governance Model at Cummins

- Information Governance Council structure aligns with the operating model
- Several tactical councils with separate scopes
- Single Strategic and a single Executive council for common oversight and sponsorship

## Information Governance Council Structure







# Process

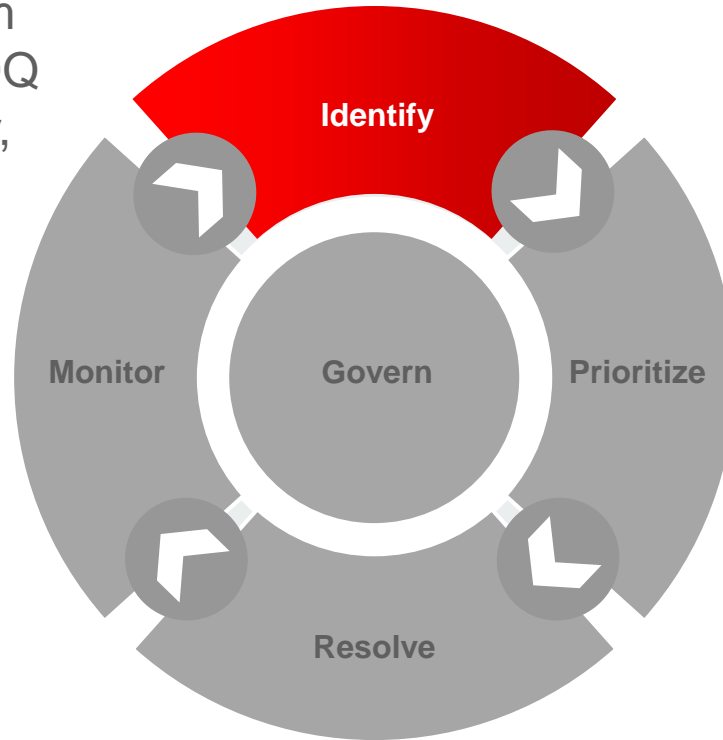
How to engage with your data and improve your business

# How to Start

- What is the **current status**?
  - How bad is the problem?
  - Where is it coming from?
  - What is it affecting?
- Who **owns** the problem?
  - What powers do they have?
  - Who are the other stakeholders?
- What are our **goals**?
  - What are the short and long term goals?
  - What practical steps can we take towards them?
  - Are there any ‘quick hits’ that can have a rapid impact?
- What **needs to change**?
  - What new policies should we have?
  - How do we define ‘good’?
  - How can we enforce rules and improve quality?
- How can we **measure** our progress?

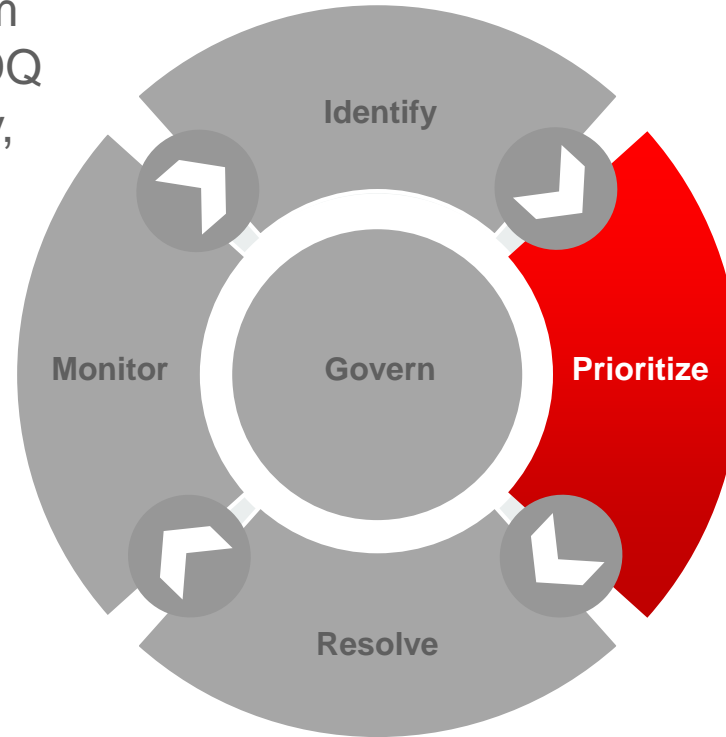
# The Data Governance process

- Set goals and resolve conflicts
- Enforce and promote program goals through standardized DQ processes, business glossary, case management, etc.
- Identify current status of data and process
- Data Profiling & Metadata analysis
- Monitor
  - KPI status and trends
  - Metrics drive further actions to attain goals
- Prioritize
  - Propose solutions to data problems including rough scope and ROI
  - CDO/Governance Committee assigns priority and ownership
- Resolve
  - Implement series of point solutions in priority order
  - Define and implement business rules & validations, remediation workflows, source system changes, etc.



# The Data Governance process

- Set goals and resolve conflicts
- Enforce and promote program goals through standardized DQ processes, business glossary, case management, etc.



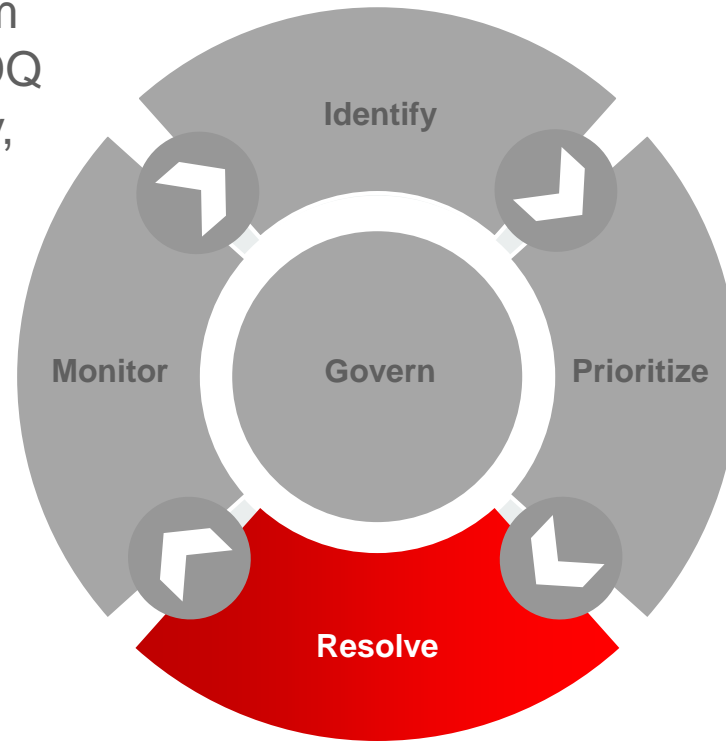
- KPI status and trends
- Metrics drive further actions to attain goals

- Propose solutions to data problems including rough scope and ROI
- CDO/Governance Committee assigns priority and ownership

- Implement series of point solutions in priority order
- Define and implement business rules & validations, remediation workflows, source system changes, etc.

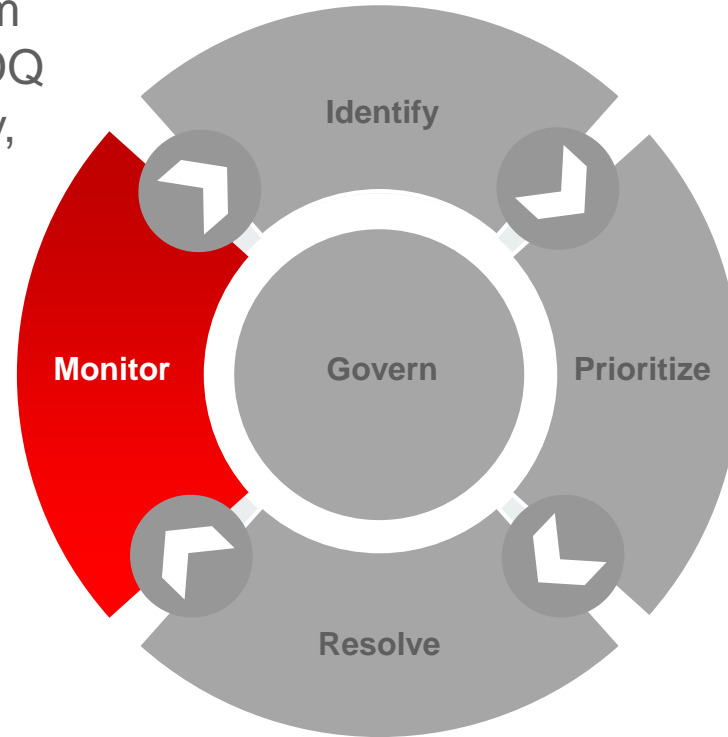
# The Data Governance process

- Set goals and resolve conflicts
- Enforce and promote program goals through standardized DQ processes, business glossary, case management, etc.
- Identify current status of data and process
- Data Profiling & Metadata analysis
- Monitor KPI status and trends
- Metrics drive further actions to attain goals
- Propose solutions to data problems including rough scope and ROI
- CDO/Governance Committee assigns priority and ownership
- Implement series of point solutions in priority order
- Define and implement business rules & validations, remediation workflows, source system changes, etc.



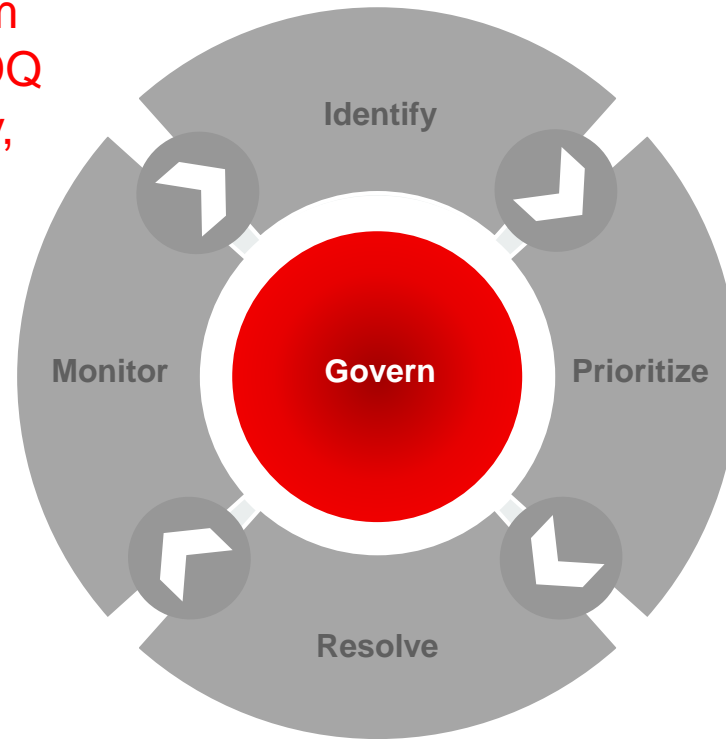
# The Data Governance process

- Set goals and resolve conflicts
- Enforce and promote program goals through standardized DQ processes, business glossary, case management, etc.
- Identify current status of data and process
- Data Profiling & Metadata analysis
- Propose solutions to data problems including rough scope and ROI
- CDO/Governance Committee assigns priority and ownership
- Implement series of point solutions in priority order
- Define and implement business rules & validations, remediation workflows, source system changes, etc.

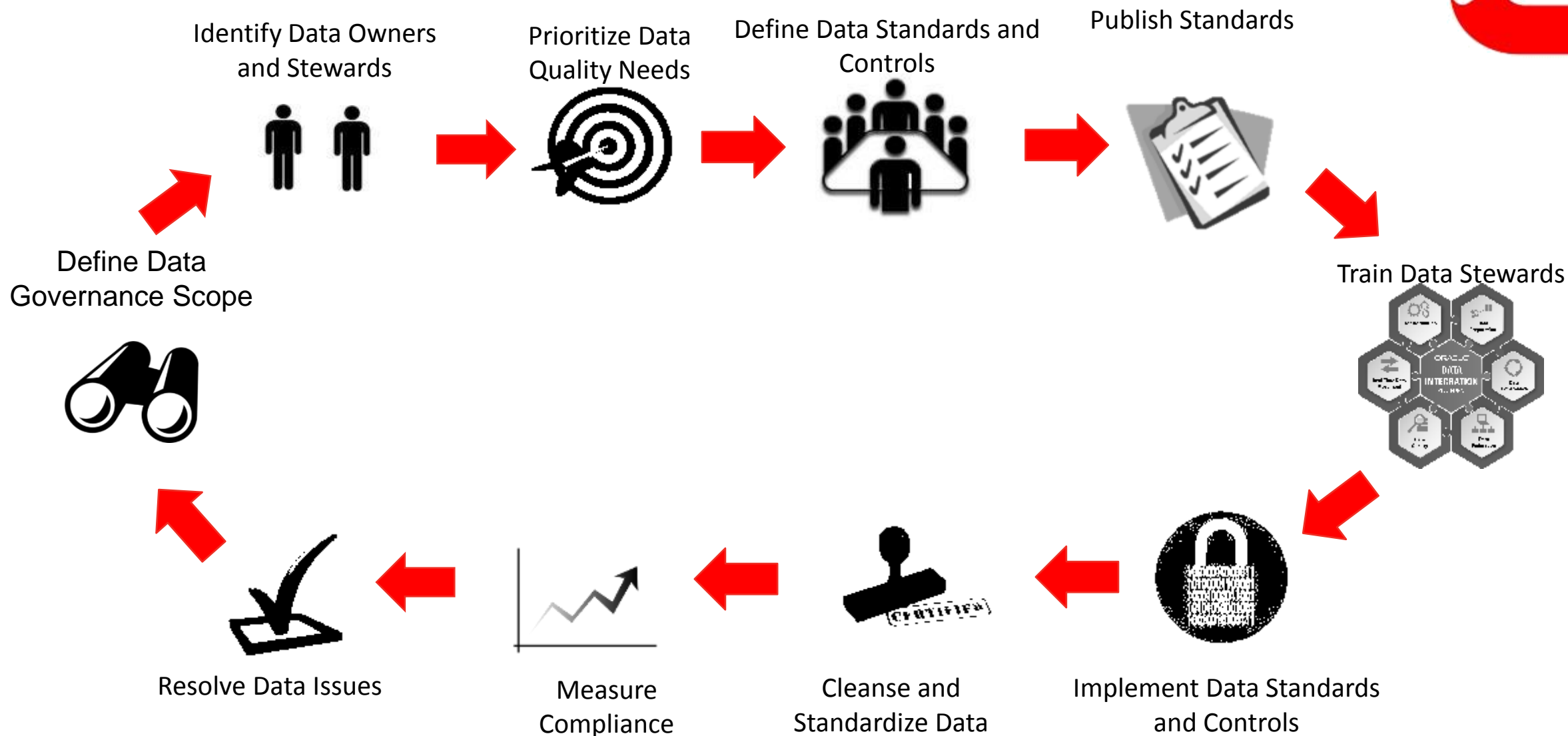


# The Data Governance process

- Set goals and resolve conflicts
- Enforce and promote program goals through standardized DQ processes, business glossary, case management, etc.
- Identify current status of data and process
- Data Profiling & Metadata analysis
- Monitor
  - KPI status and trends
  - Metrics drive further actions to attain goals
- Prioritize
  - Propose solutions to data problems including rough scope and ROI
  - CDO/Governance Committee assigns priority and ownership
- Resolve
  - Implement series of point solutions in priority order
  - Define and implement business rules & validations, remediation workflows, source system changes, etc.



# The Data Governance Process at Cummins





A man with a beard and mustache, wearing a dark suit, light blue shirt, and dark tie, is looking intently at a tablet computer. The background is a blurred bokeh of lights, suggesting an indoor setting at night. The overall color palette is dominated by teal and blue tones.

# Technology

**How to use technology to help establish strong Data Governance**

# EDQ · Collaborative Data Quality Governance

## Data Analysts

- Immediate Data Insight
- Reusable DQ Services and Rules
- Transparent, self-documenting configuration

ORACLE Enterprise Data Quality

Dashboard

Status	Name	Checker	Index Value
🟡	Customer Consistency	100	100%
🔴	Product Consistency	200	75%

Rules	Warn	Warn	Warn	Warn
Custom Checks	0	2	2	0

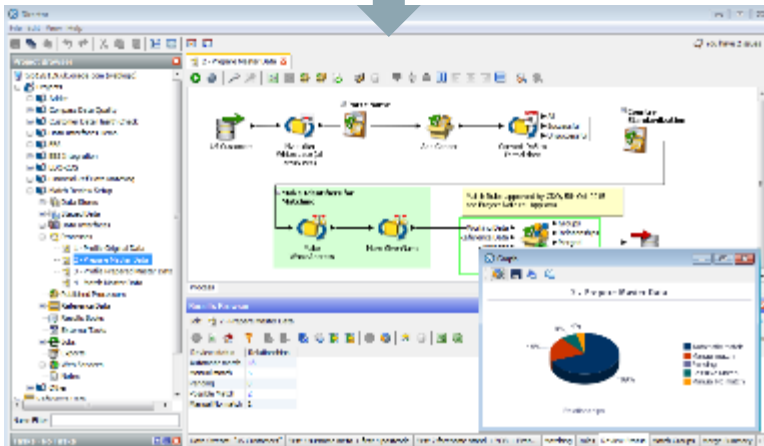
Status	Name	Created	Passed	Failed	Pass Rate
🔴	Customer Check	11/11/11	100	100	100%
🔴	Product Check	11/11/11	100	100	0%

## Data Stewards

- Flexible Data Review and Remediation options in EDQ Case Management
- Integrated with DQ Rules
- Fully audited with comments, attachments, history, reports

## Data Stakeholders

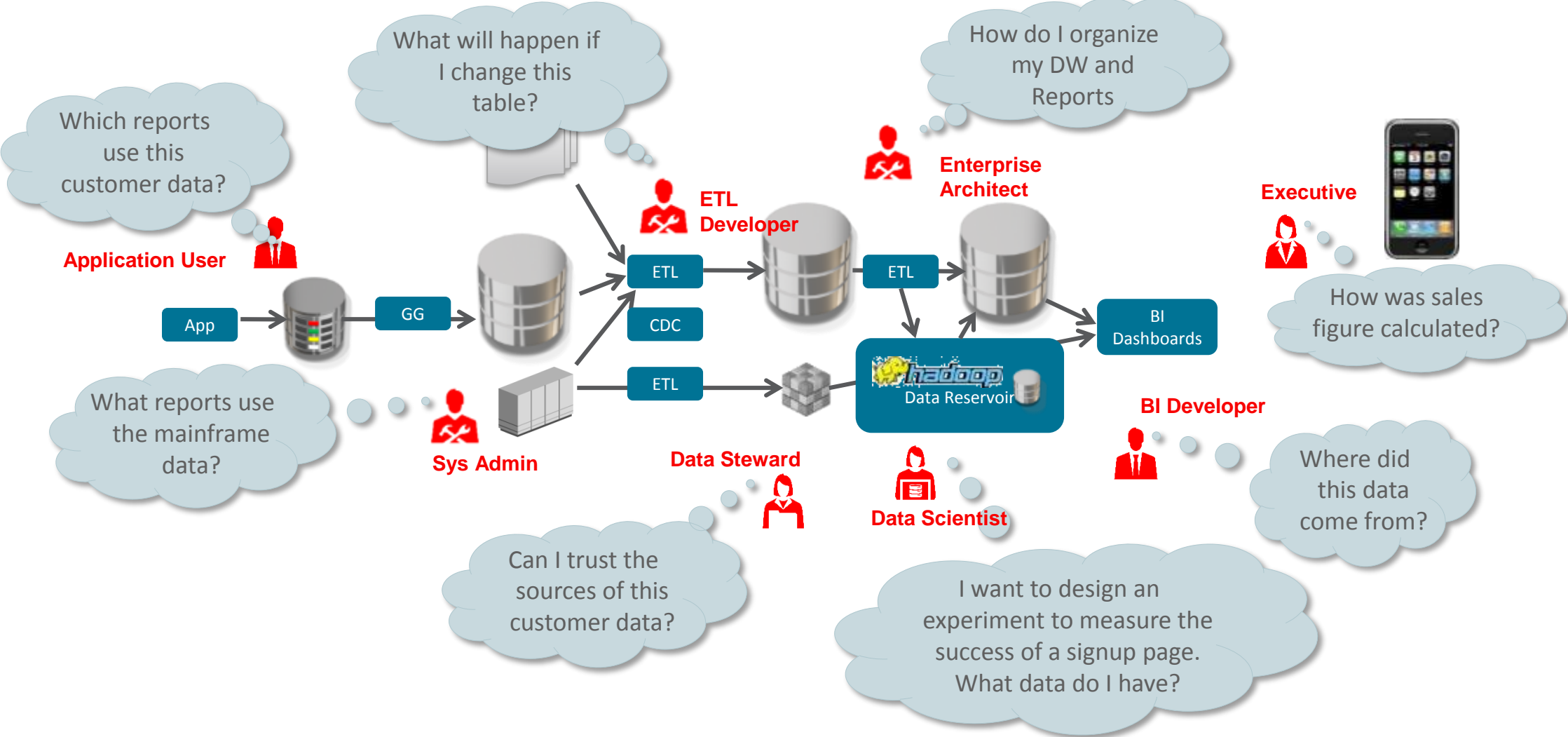
- Zero Training EDQ Dashboard
- View by Data Asset, Data Domain, Rule
- Trend Analysis



Oracle Enterprise Data Quality Case Management interface showing a list of data quality cases.

Case ID	Case Name	Status	Created	Updated	Owner	Priority	Resolution
1000000001	Customer Data Quality	Open	11/11/11	11/11/11	John Doe	High	Review and Remediate
1000000002	Product Data Quality	Open	11/11/11	11/11/11	Jane Smith	Medium	Review and Remediate
1000000003	Address Data Quality	Open	11/11/11	11/11/11	John Doe	Low	Review and Remediate
1000000004	Phone Number Data Quality	Open	11/11/11	11/11/11	Jane Smith	Medium	Review and Remediate
1000000005	Product Name Data Quality	Open	11/11/11	11/11/11	John Doe	High	Review and Remediate

# OEMM · Data Lineage and Business Glossary



# Data Governance in Action!

**Kraig Sauter**  
**Kaygen Enterprise Solutions**

# Data is a Strategic Asset

**50%**

time spent on  
finding data

The amount of time that knowledge workers waste in hidden data factories, hunting for data, finding and correcting errors, and searching for confirmatory sources for data they don't trust.

- Source: HBR July 2016

**60%**

time spent on  
cleaning data

The estimated fraction of time that data scientists spend cleaning and organizing data,

- Source: CrowdFlower.

**75%**

cost of hidden data  
factories

An estimate of the fraction of total cost associated with hidden data factories in simple operations

- Source: HBR July 2016

**\$3.1 trillion**  
per year

Cost of poor data quality in the US in 2016

- Source: IBM Business Consulting

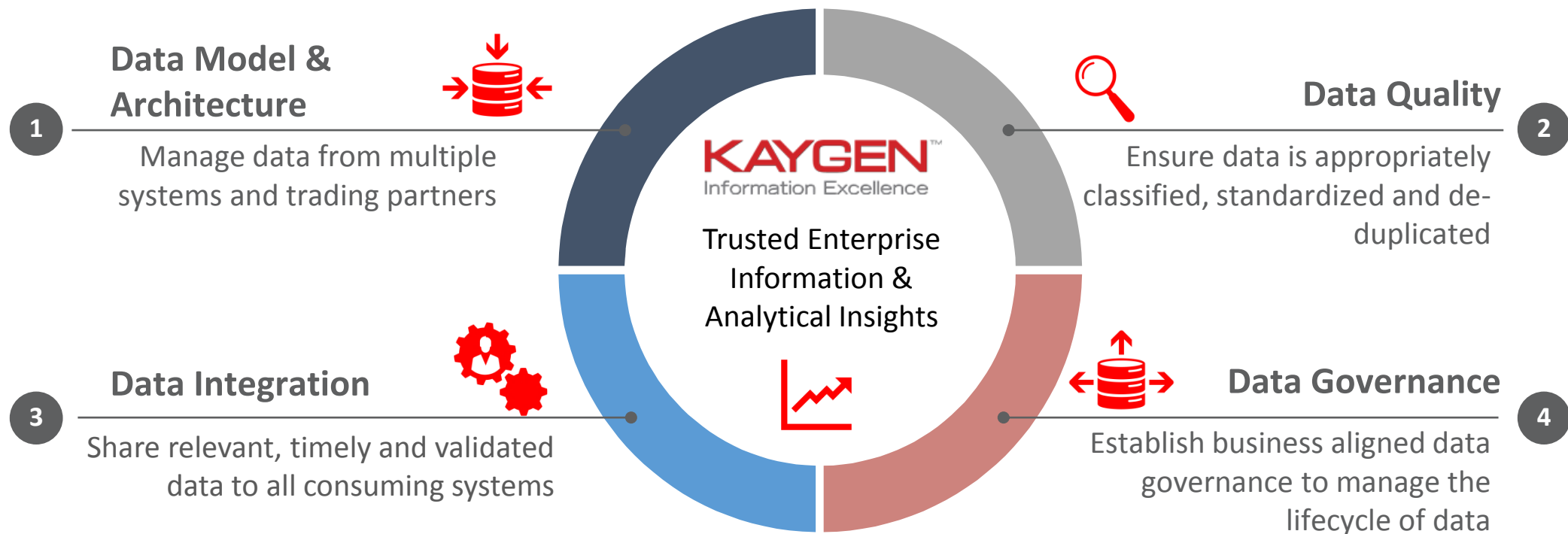
**\$136 billion**  
per year

2016 spend on big data and business analytics applications, tools, and services

50% spend will increase by 2019

- Source: market research firm IDC

# Kaygen Data Management Solution Framework



# Kaygen Data Governance Approach



## Strategy

- Business Framework
- Data Strategy
- Vision & Mission
- Objectives and Goals
- Alignment
- Guiding Principles



## Data Governance Organization

- Operating model
- Data governance council framework
- Data governance organization members
- Issues, escalation and resolution process



## Policies, Procedures Standards & Measures

- Policies and business rules
- Data governance process
- Data standards & definitions
- Data classification
- Business Data Glossary
- Data Quality Metrics and KPI's



## Roles and Responsibilities

- Data stewardship
- Data ownership and accountability
- CRUD
- RACI



## Technology

- Data mastering and sharing
- Data Sources
- Data Quality
- Integration
- Data Dictionary
- Meta Data Repository



## Execution Communication & Change Management

- Knowledge Transfer
- Communication Plan
- Organizational Management
- Data Governance council meetings
- Data stewardship and operations

# Customer Success – Financial Services

Delivered improved risk management and compliance  
enabled by Data Quality driven Governance

## BCBS239 - Principles for Effective Data Aggregation and Risk Reporting



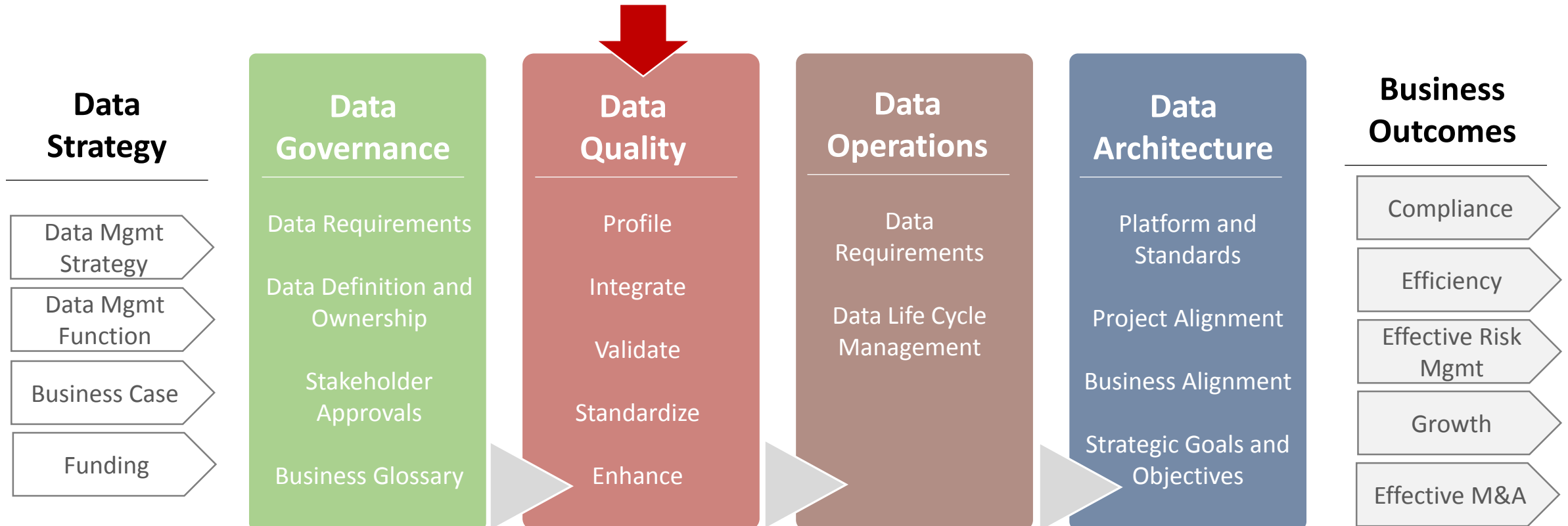
### ■ Kaygen delivered:

- The use of Oracle Enterprise Data Quality as an effective tool to aggregate, cleanse, and analyze Financial Transaction and Risk related information
- The Collibra Connect integration connector for Oracle EDQ (built for Collibra by Kaygen) for KPI monitoring and tracking
- Enabled regulatory compliance with key data elements
- Enabled workflows for change management
- Enhanced ability to rapidly and effectively respond to changing Federal regulations



# Customer Success – Financial Services

## Managed Data Quality for effective Data Governance



# Customer Success - Oil and Gas industry

## Regulatory Compliance

### Client Snapshot:

- A leading chemicals, refining and biofuels company with more than 20 facilities across North America

### KAYGEN deployed solution:

- Streamlined Air Emission Reporting through Enterprise Data Quality
- Profiled, integrated, validated, standardized and enhanced the source data with real-time data lookups.
- Provided capabilities to process the raw operational data into quality checked and standardized information

### Highlights:

- Integrated source systems and streamline data collection process from multiple oil and gas applications (SCADA, PI Historian)
- Enabled effective error and exception handling processing and reporting
- Provided ability to identify meter failures, sensor inconsistencies
- Provided ability to explain the data and apply business rules
- Implemented business rules to check and validate data value ranges, unit of measure changes, and apply other requirements
- ✓ **Assisted client to avoid multi-million dollar compliance fines and achieve green initiative objectives!**

# How to get Started – Data Quality & Data HealthCheck

● up to 8 hrs ● up to 40 hrs ● up to 4 hrs ●

**rVA Engagement**

- NDA and SOW
- Scope and Milestones
- Team and stakeholders

**Onsite Discovery**

- Business Alignment
- Governance
- Information Management

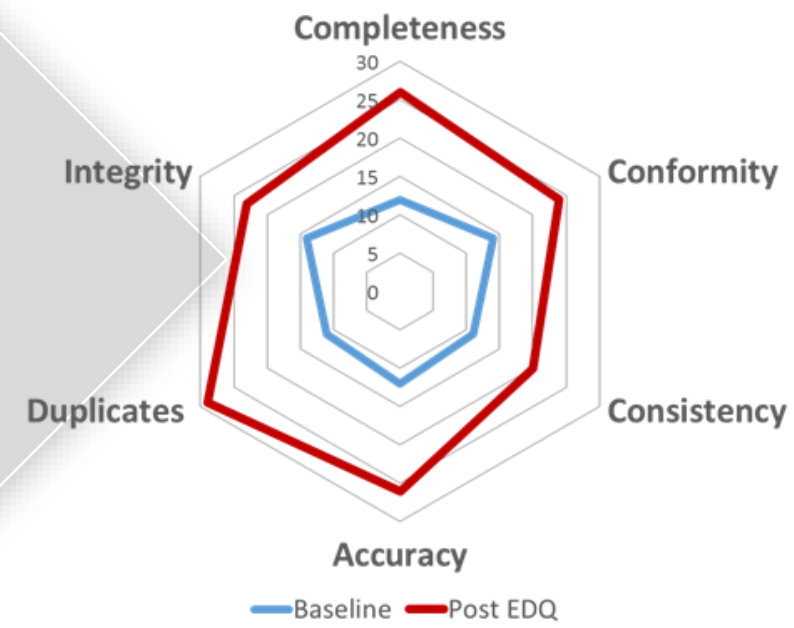
**Data Health Check & Value Assessment**

- Demo configuration
- Data profiling
- Data matching
- Value Analysis

**Readout & Roadmap**

- Executive and stakeholder presentation
- Data Management Maturity Assessment
- Recommendations and roadmap

**KAYGEN rVA and Data Management Results**



# Get a sneak peek at cutting-edge data integration designs and receive a free gift!

- Oracle is constantly developing new software and features that will make your work easier, and Oracle's User Experience team would love to get your feedback on new data integration designs.
- Feedback sessions will take place at a date and time of your own choice.
- You can take part via webconference, from the comfort and convenience of your own office.
- If you're interested, please fill out the 1-page form at <http://bit.ly/2vIH1Sg>  
uppercase I lowercase l
- To show our appreciation, we will post all participants their choice from a wide selection of thank-you gifts.

# Data Integration Programme – [FOCUS ON DOC LINK](#)

## Presentations on:

Oracle  
Data Integration  
Platform Cloud

Oracle  
Data Integrator

Oracle  
GoldenGate

Oracle  
Enterprise  
Data Quality

Oracle  
Enterprise  
Metadata  
Management

## Hands-on Labs:

Oracle GoldenGate  
Real-Time Data Replication  
in the Cloud  
HOL7715

Oracle  
Enterprise Data Quality  
HOL7653

ODI and OGG  
for Big Data  
HOL7708

Oracle  
Data Integration  
Platform Cloud  
HOL7673

## Demo Stations:

The EXchange  
Integration Area  
- Moscone West

The EXchange  
Data Management Area  
- Moscone West

The EXchange  
Analytics & Big Data Area  
- Moscone West

# Data Integration Programme – FOCUS ON DOC LINK

## Sunday, October 1

- Lift and Shift Workloads to Cloud with Oracle Data Integration Platform Cloud [SUN6653]
- Data Movement between On-Prem, Fusion ERP Cloud, Fusion HCM Cloud and Salesforce [SUN7286]
- Accelerate Migration to Cloud Infrastructure with Data Integration Platform [SUN6896]

## Monday, October 2

- Oracle Data Integration Platform Strategy and Roadmap [CON6646]
- Filling Your Data Lake with Potable Data, Using Data Integration [CON5465]
- GoldenGate : Deep Dive into Automating OGG using the new Microservices [CON6569]
- Oracle Data Integration Platform: Foundation for Cloud Integration [CON6650]
- Oracle Data Integration Platform Empowers Enterprise Grade Big Data Solutions [CON6893]
- Oracle Data Integration Platform Cloud Deep Dive [CON6651]
- Oracle GoldenGate Cloud Service: Real-Time Data Replication in the Cloud [HOL7715]

## Tuesday, October 3

- Oracle Data Integrator Product Update and Strategy [CON6654]
- Oracle Enterprise Data Quality: Product Overview and Roadmap [CON6656]
- Accelerate Cloud On-Boarding Using Oracle GoldenGate Cloud Service [CON6894]
- Oracle Enterprise Data Quality for All Types of Data [HOL7653]
- Oracle Data Integration Platform: a Cornerstone for Big Data [CON6655]
- GoldenGate: MAA and Best Practices for Oracle GoldenGate Microservices [CON6570]
- Oracle GoldenGate Product Update and Strategy [CON6897]

## Wednesday, October 4

- **A Practical Path to Enterprise Data Governance with Oracle Enterprise Data Quality [CON6657]**
- Oracle Data Integrator and Oracle GoldenGate for Big Data [HOL7708]
- Introduction to Oracle Data Integration Platform Cloud [HOL7673]
- An Enterprise Databus: GoldenGate in the Cloud Working with Kafka and Spark (CON6895)
- GoldenGate: Best Practices & Deep Dive on OGG 12.3 Microservices at Cloud [CON6568]
- Oracle GoldenGate for Big Data [CON6898]
- Oracle Data Integration Platform Cloud Service Governance Edition [CON6652]

# Connect with Oracle Integration



**Oracle Data Integration**



**@OracleDI**



**[Blogs.oracle.com/DataIntegration/](https://blogs.oracle.com/DataIntegration/)**



**Oracle Data Integration**



**Oracle FMW**



**@OracleIntegrate**



**[Blogs.oracle.com/Integration/](https://blogs.oracle.com/Integration/)**



**Oracle SOA**

ORACLE®



# Integrated Cloud

## Applications & Platform Services