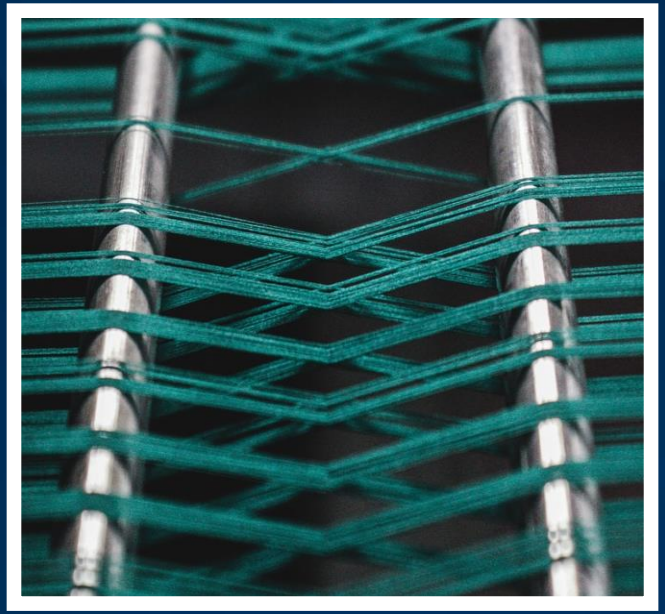

Data Wrangling and Governance for the Management Accountant

Alec Epstein
Dominick Amirr

May 11, 2022

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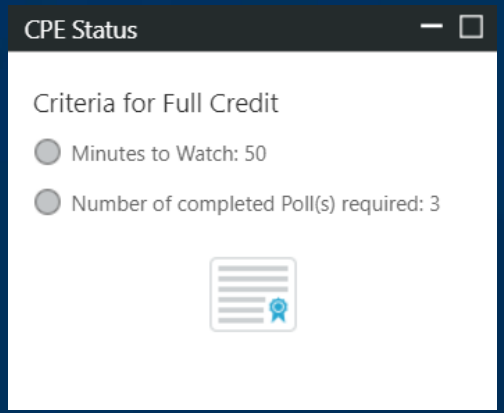

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Featured Presenters

Alec Epstein
Managing Partner
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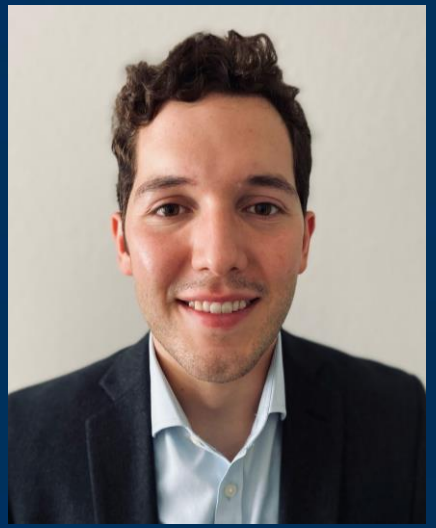


Dominick Amirr
Engagement Manager, Data & Analytics
Bryant Park Consulting, Inc.

Alec Epstein's Biography

- Alec Epstein is the Managing Partner of Bryant Park Consulting and is an experienced leader in financial systems and digital transformation in the middle-market. He has held consulting roles within the professional services organization of Oracle NetSuite and other prominent consultancies prior to founding Bryant Park Consulting. Mr. Epstein has led over 100 companies through successful process improvement and technology implementation engagements across products, services, and technology industries with expertise across business functions including finance, supply chain, sales, and operations.
- Alec graduated from the University of Southern California Marshall School of Business

Dominick Amirr ’s Biography

- Dominick Amirr is an Engagement Manager with Bryant Park Consulting with an emphasis on Oracle NetSuite ERP and Oracle NetSuite Analytics Warehouse and Business Intelligence solutions. Dominick leads BPCs Data and Analytics team with a focus on large scale data conversion projects and implementation of data governance, data warehousing, and business intelligence and data visualization solutions.
- Dominick graduated with a Finance degree from the University of North Texas College of Business and prior to BPC has worked in Data Management at Informatica and ERP consulting and administration in technology consultancies and in industry as a system administrator.

Learning Objectives

1. Recognize the risks and impacts related to poor data integrity and governance.
2. Identify the primary causes of organizational data quality and integrity issues.
3. Describe the data governance maturity model and path to improved practices.
4. Explain the steps to roll out an organization-wide data governance program.
5. Give examples of ways to monitor data quality and address risks and needs.

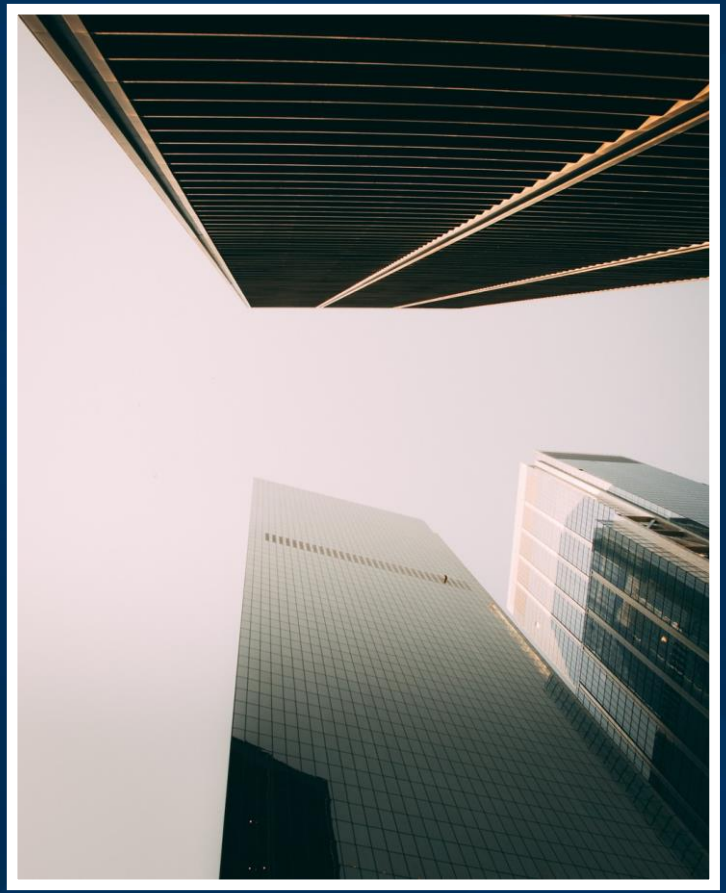
Introduction to Bryant Park Consulting

BryantPark CONSULTING

- Modern global technology consulting firm with HQ in NYC, NY
- Focused on strategy, technology, and business transformation
- Leading Alliance Partner of sponsor Oracle NetSuite and others
- Relevant technology domain expertise:
  - Enterprise Resource Planning (ERP)
  - Enterprise Performance Management (EPM)
  - Customer Relationship Management (CRM)
  - eCommerce and Portals
  - Enterprise Application Integrations (EAI)
  - Electronic Data Interchange (EDI)
  - Enterprise Data Management (ETL, DW, DL)
  - Business Intelligence (BI) and Analytics
- Led hundreds of customer projects related to today's topic

Agenda

1. Data Quality & Governance Overview
2. The Data Governance Maturity Model
    a. Acknowledging the model
    b. Placing yourself on the model
    c. Steps to progress toward maturity
    d. Monitoring and maintaining progress
3. Review Key Takeaways



Data Quality & Governance Overview

What is data quality and integrity?

Data Quality characterizes how reliable information is to serve some intended purpose.

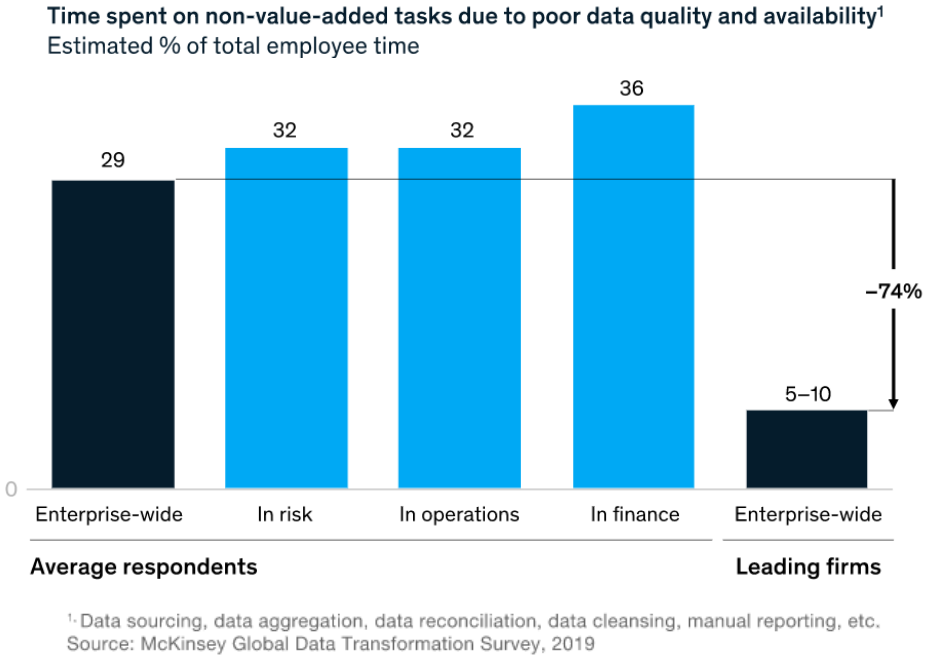
Data Integrity refers to how reliable the information is in terms of its physical and logical validity.

Data Governance is the process of managing the availability, usability, integrity, and security of the data in enterprise systems based on internal standards and policies for data management and usage.

Effective Data Governance ensures that the organization can maintain data quality and data integrity on an ongoing basis to benefit the enterprise and its stakeholders.

Why is this topic relevant?

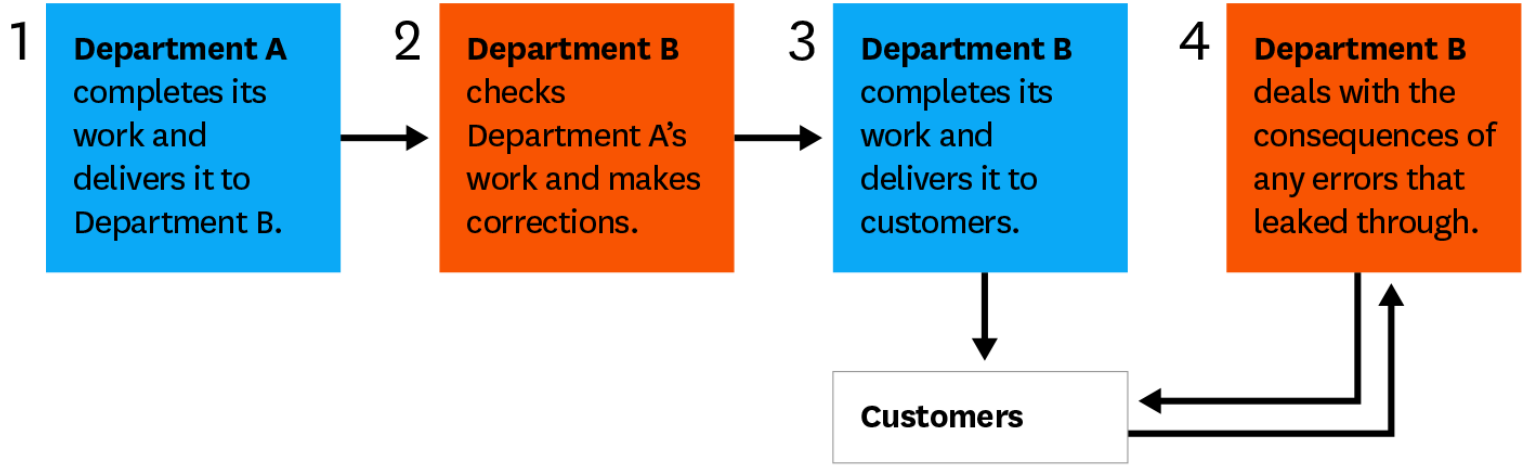
- Consumer and enterprise **data volumes are growing** exponentially and are forecasted to continue
- Many **more software applications** are required today to run a competitive and distributed organization than ever before
- Maturity of APIs and ease of integration allows for adoption of best of breed solutions but results in **'Data Spawl'**
- There are **substantial costs resulting from poor data quality**; a 2016 IBM study calculated that poor data quality costs the US economy $3.1+ trillion annually
- Poor data quality and availability **causes employees to spend substantial time on non-value-added tasks**, especially for accounting and finance departments
- Organizations with strong data practices realize remarkable performance improvement through improved timely and data-driven decision-making and reduced inefficiencies



Costly and Time-consuming Data Errors

The Hidden Data Factory

Visualizing the extra steps required to correct costly and time-consuming data errors.



SOURCE THOMAS C. REDMAN

Poll Question 1:

Which of the following is the biggest risk to companies with poor data quality and governance?

a. Inaccurate and delayed reporting
b. Employee burnout and low morale
c. Damage to reputation with business partners
d. Ramifications of non-compliance

Poll Question 1 Results: (Placeholder)

Risks of Poor Data Quality and Governance

Internal Risks

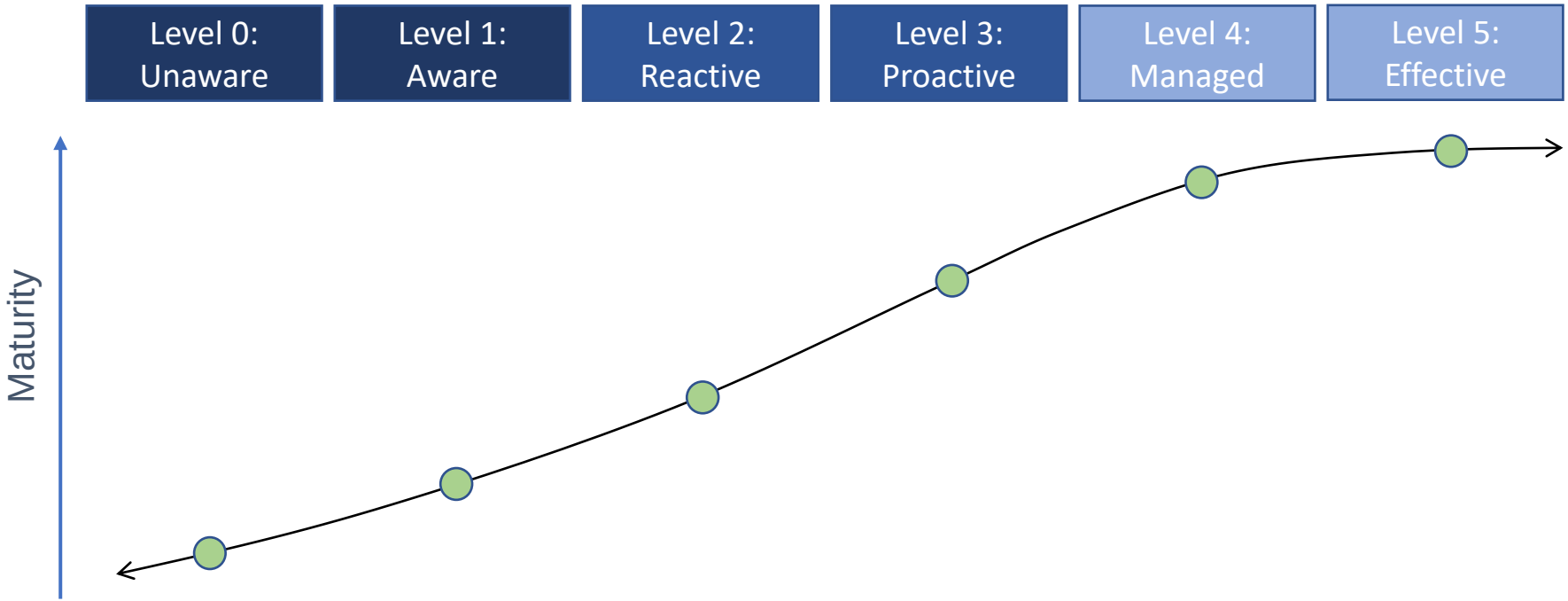
1. Reduced data and reporting timeliness and accuracy
2. Poor employee morale due to manual efforts needed
3. Time and resources wasted with non-value-added activities

External Risks

1. Damaged reputation with customers and the public
2. Reduced confidence of partners, investors, and regulators
3. Civil penalties due to privacy and security violations

Data Governance Maturity Model

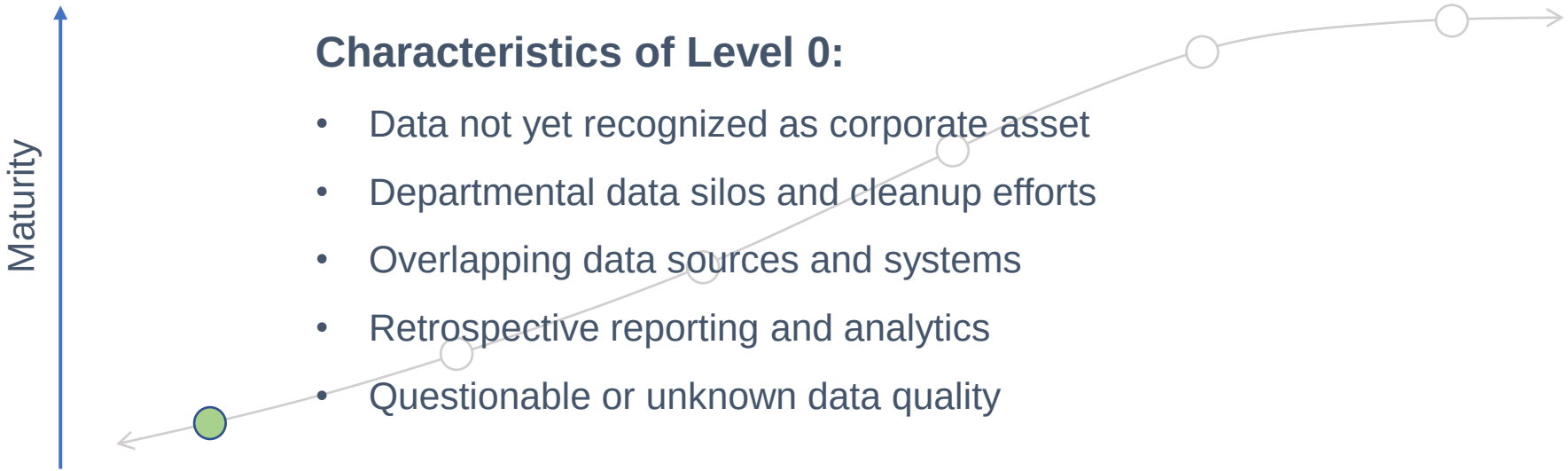
Data Governance Maturity Model



Level 0: Unaware

Data Governance Maturity Model

Level 0: Unaware	Level 1: Aware	Level 2: Reactive	Level 3: Proactive	Level 4: Managed	Level 5: Effective



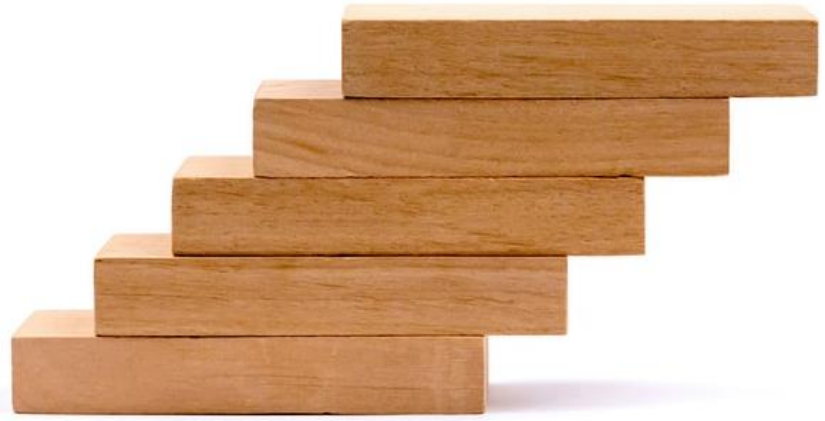
Characteristics of Level 0:

- Data not yet recognized as corporate asset
- Departmental data silos and cleanup efforts
- Overlapping data sources and systems
- Retrospective reporting and analytics
- Questionable or unknown data quality

Growth Pressures on Data Quality and Integrity

Growing businesses face increasing:

- Importance of data-driven decision making
- Master data and transaction volumes
- Complexity of data requirements
- Number of data stewards and domains
- Communication, system, process silos
  - Departmentalization
  - Territorialization
  - Verticalization



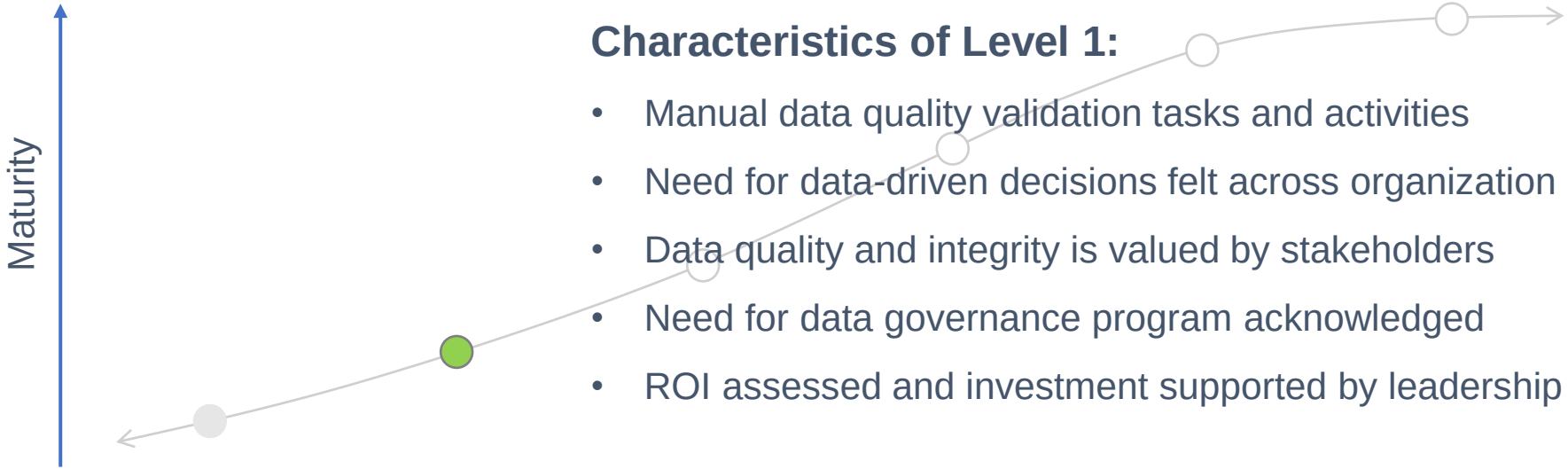
Common Examples of Data Quality Issues

Common Issues	Common Examples	Common Solutions
Duplicates Records	Duplicate customer, vendor, contact, item, transaction	Ease search, active validate, passive validate, recurring merge
Duplicate Attributes	Different product/service hierarchy per department	Cross-departmental collaboration on attributes and dimensions
Multiple Owners	Item master data maintained by purchasing and sales	Data element ownership alignment, role specific data forms
Ambiguous Data	Data fields with unclear and varied use by users	Data dictionary development, field-level help in systems
Missing Data	Data not captured that is of value to the organization	Active validate, ease and automate capture, emphasize value
Incomplete Data	Data only partially available, incomplete profiles	Automate data capture, process improvement, user enablement
Erroneous Data	Wrong address or contact information in systems	Active and passive validate, paid data stores, cleansing services
Transcription Errors	Optical character recognition application misreads bill	Use data integrations and electronic communication networks
Transposition Errors	Accidentally entering digits out of order on amounts of IDs	Automate data capture, multiple reviews and approvals
Time Delays	Regular manual data sync between systems (‘swivel chair’)	System consolidation, enterprise application integrations

Level 1:
Aware

Data Governance Maturity Model

Level 0: Unaware	**Level 1: Aware**	Level 2: Reactive	Level 3: Proactive	Level 4: Managed	Level 5: Effective



Characteristics of Level 1:

- Manual data quality validation tasks and activities
- Need for data-driven decisions felt across organization
- Data quality and integrity is valued by stakeholders
- Need for data governance program acknowledged
- ROI assessed and investment supported by leadership

Assess Current-state and Set Goals

Consider Risk and Compliance Impacts

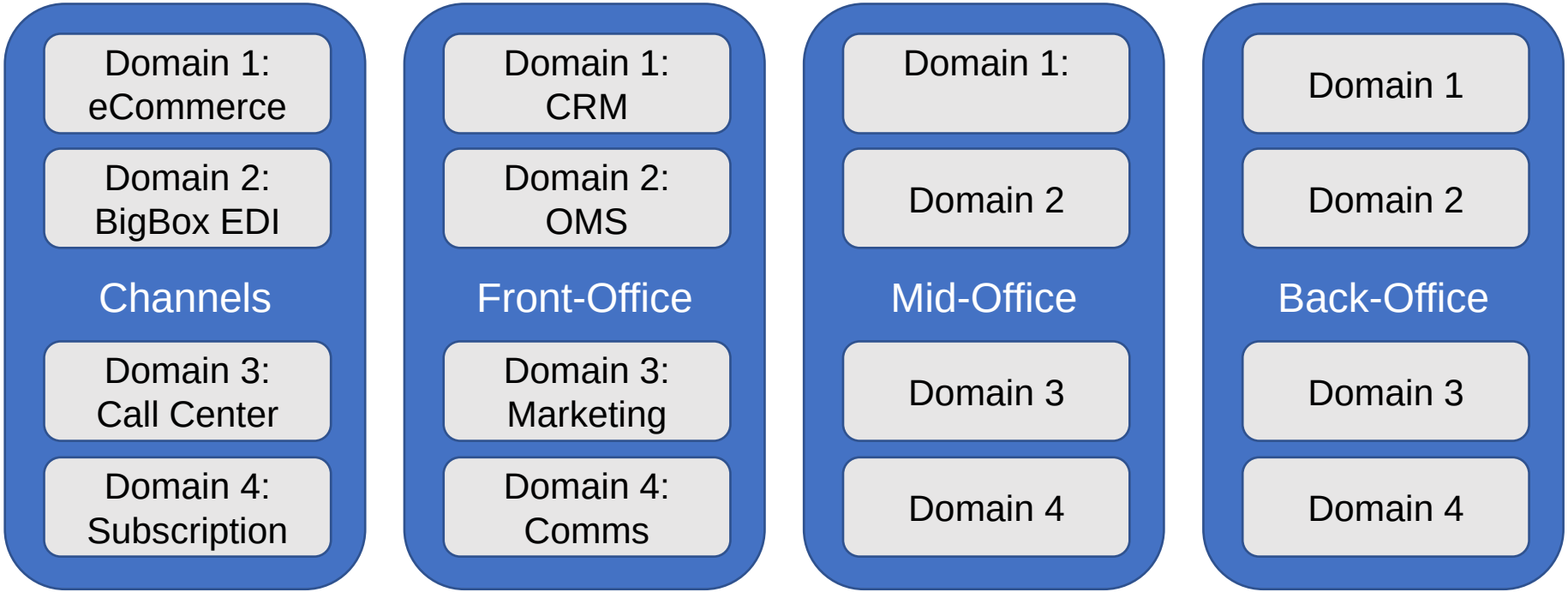
Risk and compliance considerations in data governance, access, controls, and information security programs and policies will vary based on each organization's industry and jurisdiction.

- **GDPR** - General Data Protection Regulation governing personal data processing
- **CCPA** - California Consumer Privacy Act enhances privacy and consumer protection
- **HIPAA** - Health Insurance Portability and Accountability Act data management
- **PCI** - Payment Card Industry payment card data security and encryption standards
- **SOX** - Sarbanes-Oxley protects investors and the public from errors and fraud
- **ISO** - International Standards Organization for quality, safety, security, and efficiency

Begin the Data Wrangling Process

1. Align on goals, stay nimble, flexible and fast
2. Identify all source systems, internal and external
3. Realign cross organization reporting structures
4. Resolve integrity at the data entry source
5. Cleanse and enrich new and existing data
6. Automate processes for data synchronization
7. Automate processes for validation of data quality
8. Publish the approved reporting and analytics

Landscape Assessment and Documentation



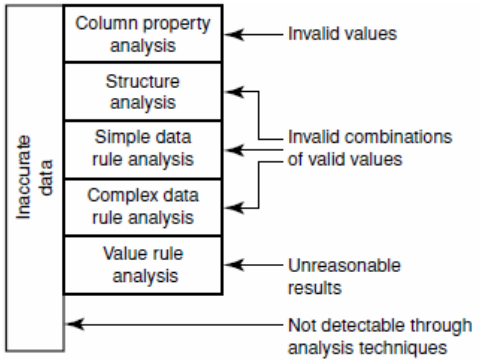
Data Stakeholder Matrix and Responsibilities

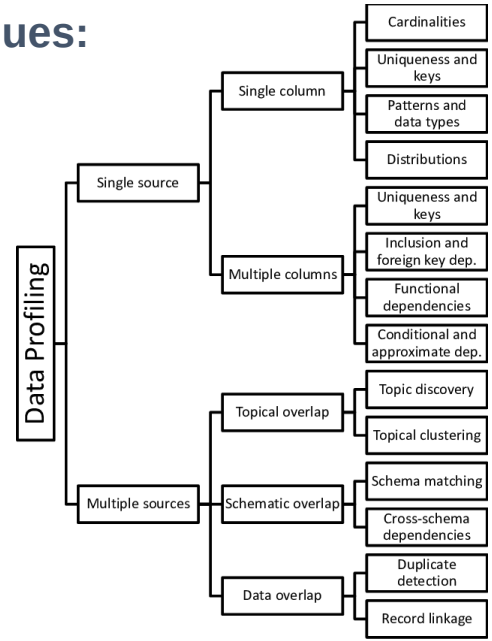
Dimension	Finance	Accounting	Supply Chain	Warehouse	Marketing	Sales	Support
Chart of Accounts							
Departments							
Lines of Business							
Item Master							
Vendor Master							
Customer Master							

Sizing the Problem with Data Profiling

Better understand your data with different data profiling techniques:

- Structure, Content, and Relationship Discovery
- Common Excel or SQL-based tactics
  - Column and Row Quantity
  - Minimum, Maximum, Null, Invalid Values
  - Column Mean, Median, Mode
  - Column Distribution, Standard Deviation
  - Column Profile
- Entity relationship diagrams
- Advanced data profiling tools
- Notate data quality concerns
  - Extremes, invalid values, omissions, errors





https://www.researchgate.net/figure/A-classification-of-data-profiling-tasks_fig1_262221918
https://www.researchgate.net/figure/Data-Profiling-Processes-2_fig3_313869534

Poll Question 2:

Where do you spend the most time and effort in data cleanup?

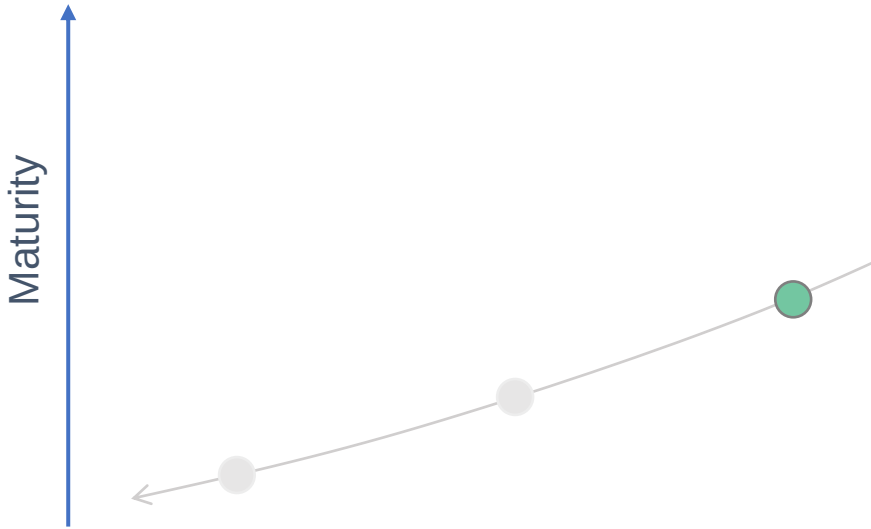
a. Deduplicating master and transaction data
b. Understanding and clarifying ambiguous data
c. Resolving missing, omitted, or incomplete data
d. Addressing transcription and transposition errors

Poll Question 2 Results: (Placeholder)

Level 2: Reactive

Data Governance Maturity Model

Level 0: Unaware	Level 1: Aware	Level 2: Reactive	Level 3: Proactive	Level 4: Managed	Level 5: Effective



Characteristics of Level 2:

- Led by named data governance committee
- Data inventory and dictionary maintained
- Enabled data stewards and domain owners
- Intentional data sharing across teams
- Reactionary data quality and integrity

Establishing a Data Governance Committee

A **Data Governance Committee** is a varied group of staff whose purpose is to establish clear data definitions, develop comprehensive policies, and oversee documentation by which internal business units collect, steward, disseminate, and integrate data on behalf of their organization.

Simple steps to establishing a DGC:

- Call it that which resonates (council, steering board, etc.)
- Identify department and domain owner participants with collaboration across departments and lines-of-business
- Establish cadence and frequency for holding governance meetings, and establish prep work and format for session
- Build ad-hoc communications channels for alignment between meetings on critical data governance topics

Building Your Data Dictionary

Steps to establish a Universal Data Dictionary for the organization:

1. Use the data profile developed in the prior process of discovery
2. Gather the terms and definitions from different departments
3. Collaborative review and alignment on common definitions
4. Establish processes for maintaining the data dictionary

Begin data cleanup based on new alignment on data attributes and definitions across the organization.

Important data dictionary attributes:

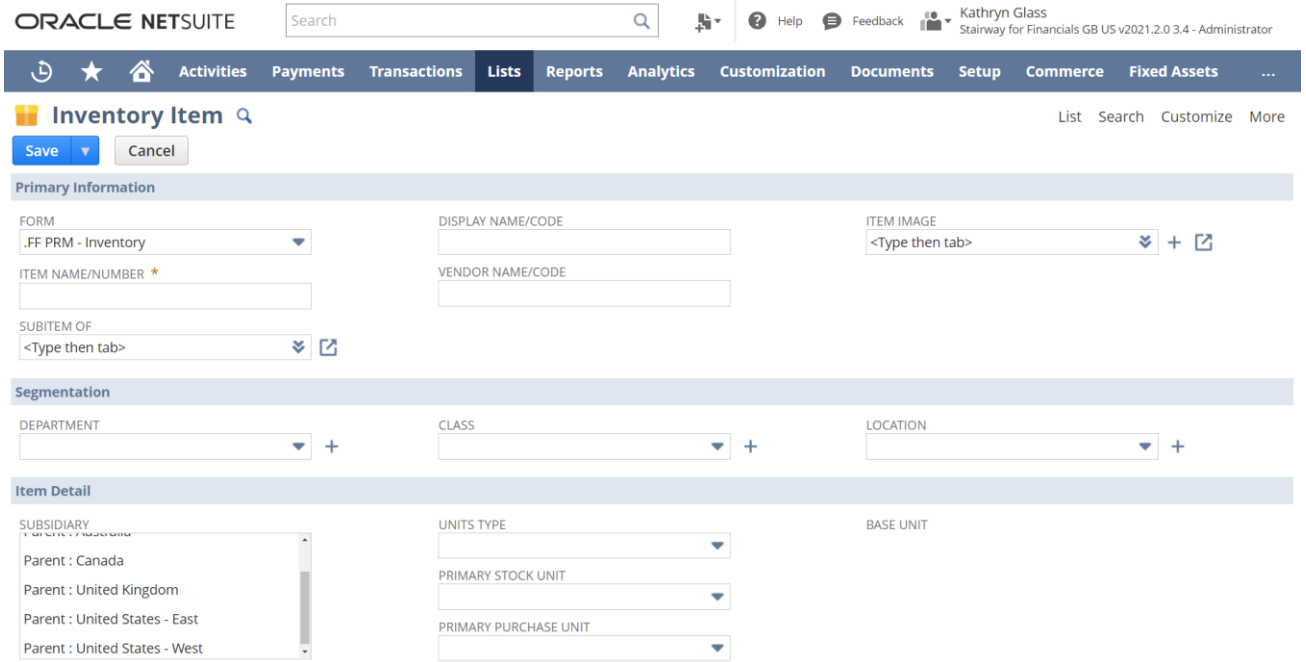
- Master Database
- Secondary Database(s)
- Field Labels and IDs
- Field Descriptions/Help
- Data Dictionary ID
- Data Size and Structure
- Data Type and Format
- Available/Valid Values
- Status (Active, Passive)
- Required Values
- Data Change Context
- Data Sequence

Database Name	Field Name	Field Label	Description	Field Size (Max number of characters permitted)	Data Type/ Format (e.g., numeric, date, currency, string or free-form text)	Data Codes (for numeric data that represent categories)
HRMS	EmpID	Employee Identification Number	Identification number assigned to employee at time of hire	8	String	N/A
HRMS	SepReas	Separation Reason	Reason an employee has separated from the agency	2	Numeric	1-Abandonment of Position 2-Death 3-Disability – Involuntary 4-Disability – Voluntary 5-Dismissal 6-End of Appointment 7-Layoff 8-Resign 9-Retirement 10-Seasonal

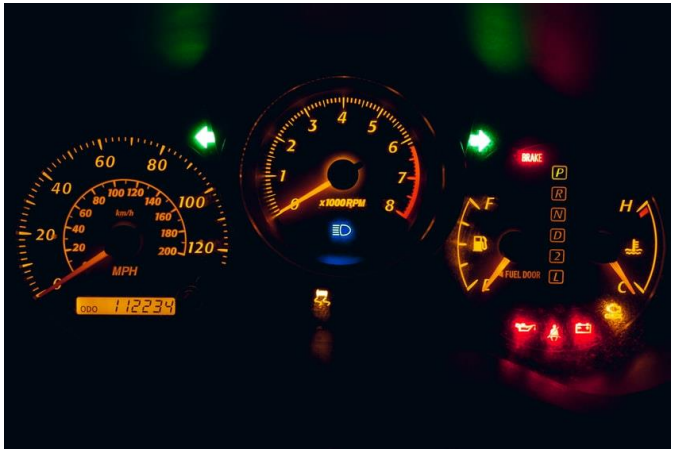
Improve Data Integrity at the Source Forms

Leverage System, Form, or Spreadsheet Configuration

- Form Versions
- Form Control and Validation
- User Guides and Training
- Field Level Help
- Approval Workflows
- Passive Validation with Alerts



Reporting Standardization



- Avoid the challenge of different reporting results
- Establish clear reporting naming conventions
- Centrally maintain and organize published reports
- Centralize data requests and triage across groups
- Govern review and approval of reports to be published
- Train users on how to leverage standard reports
- Keep ad-hoc reporting isolated and offline, formalize process for requesting to be added to report inventory
- Leverage dashboards or menus to provide easy access to standard and approved organization reports

Poll Question 3:

Which incentive will drive the best participation in a data governance program at your company?

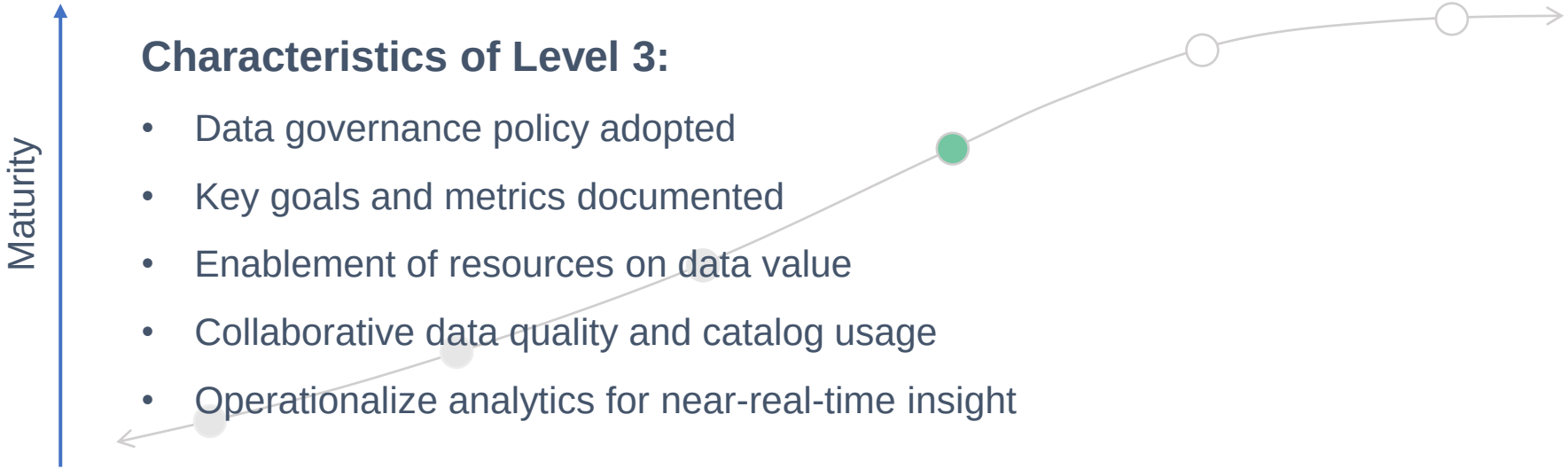
a. The promise of better reporting and analytics for your team
b. Top-down pressure from executive leadership to commit
c. The opportunity to make a positive impact on the company
d. Free lunch at data governance council meetings
e. Something else

Poll Question 3 Results: (Placeholder)

Level 3: Proactive

Data Governance Maturity Model

Level 0: Unaware	Level 1: Aware	Level 2: Reactive	Level 3: Proactive	Level 4: Managed	Level 5: Effective



Characteristics of Level 3:

- Data governance policy adopted
- Key goals and metrics documented
- Enablement of resources on data value
- Collaborative data quality and catalog usage
- Operationalize analytics for near-real-time insight

Leveraging Automation in Data Management

- Application integration (point-to-point, middleware)
- Reconciliation of ledgers and systems by exception
- Master data workflow approvals
- Low-code business process automation
- Unified enterprise applications such as ERP
- Systems to ease data model and user interface
- Automation and workflows for active validation
- Queries and alerts for passive validation
- Leverage pre-built solutions to speed time to value
- Master data management and data governance tools
- Advanced business intelligence tools

Level 4: Managed

Data Governance Maturity Model

Level 0: Unaware	Level 1: Aware	Level 2: Reactive	Level 3: Proactive	**Level 4: Managed**	Level 5: Effective

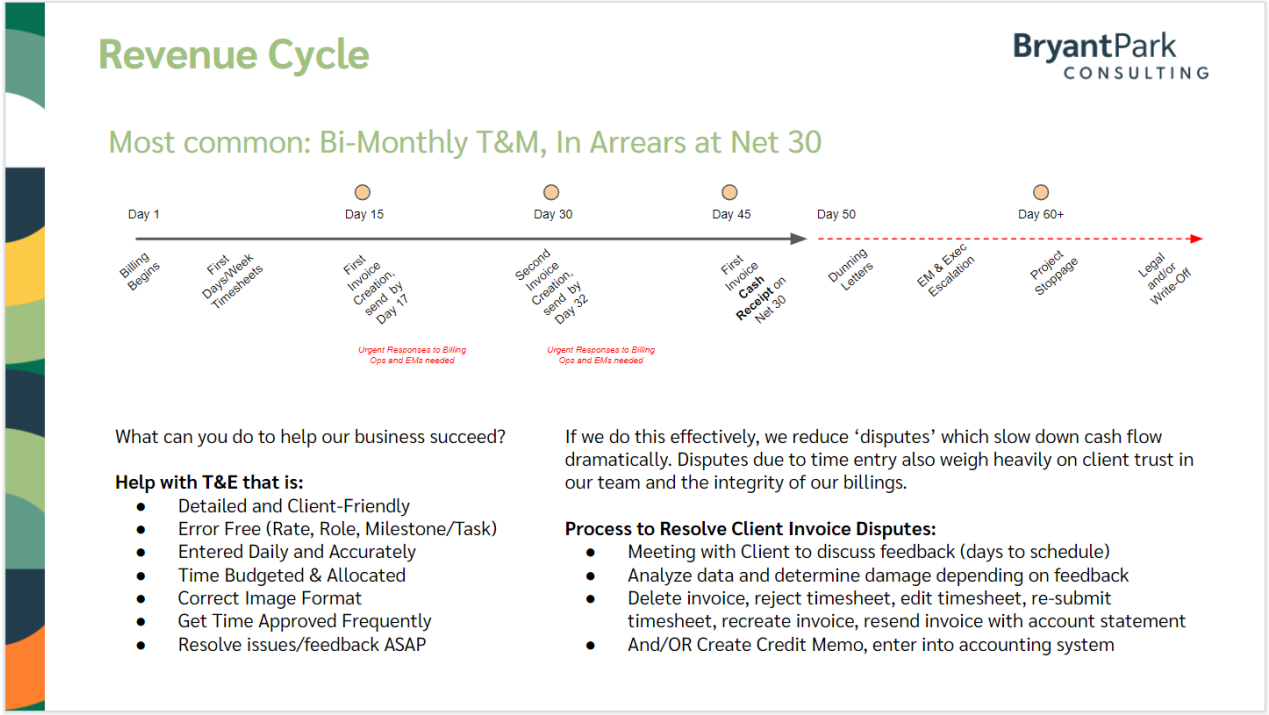
Characteristics of Level 4:

- Executives championing data management
- Data standards and policies fully implemented
- Information security, data privacy, and risk managed
- Cross-functional governance and quality execution
- Data quality is measured and controlled

Sustained Data Quality Practices

- **Assign responsibility for various aspects of data quality monitoring efforts by data domain**
- **Define responsibility, frequency, and approach for regular data quality assessments**
  - Periodic audits of databases against source documents
  - Data form entry consistency reporting, comparing entries to assess inconsistencies in data capture
- **Conduct regular training and enablement**
  - As part of new hire onboarding procedures
  - Upon implementation of changes to forms, systems, processes
  - At least annually for current employees based on current preview
- **Leverage automated systems for managing common or previously identified data quality issues by exception**
  - Queries and alerts configured within source systems, data management, and reporting and analytics tools
    - Transactions with missing classification

Delivering Data Quality and Integrity Training



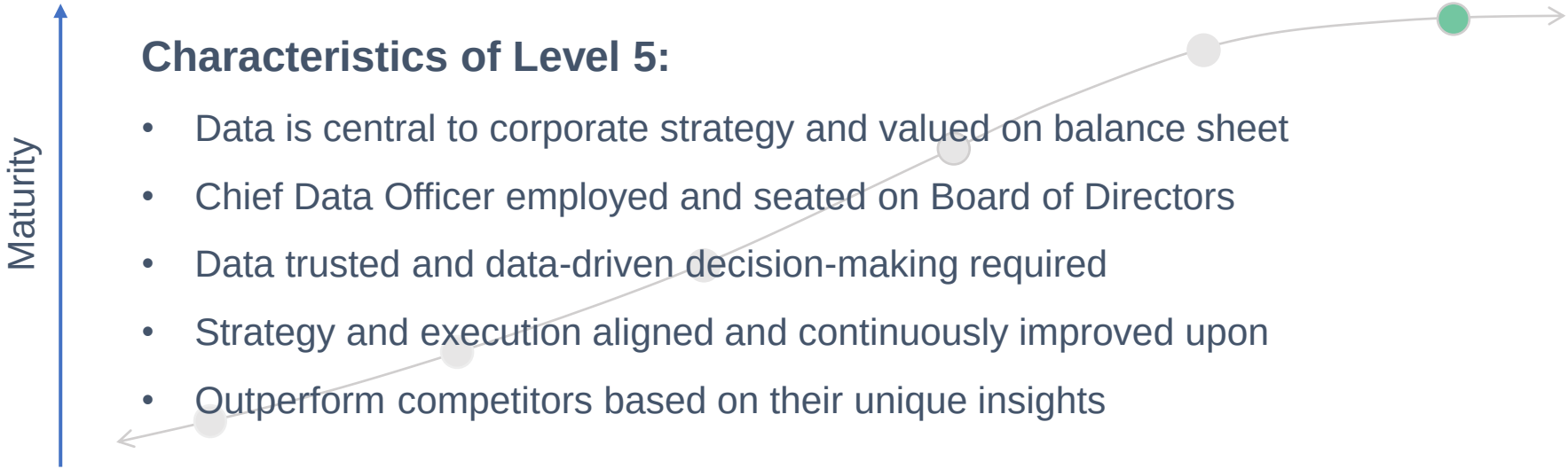
Educate Data Stewards On:

- How the data they are responsible for creating is leveraged across departments to bring value to the organization
- The financial and time impact to the organization resulting from poor data quality within their control
- The resource intensive processes required to resolve errors resulting from poor data quality practices
- Specific ways in which they can help ensure data quality in those domains they are responsible for, supported by process and procedure documentation for initial and ongoing reference

Level 5: Effective

Data Governance Maturity Model

Level 0: Unaware	Level 1: Aware	Level 2: Reactive	Level 3: Proactive	Level 4: Managed	Level 5: Effective



Characteristics of Level 5:

- Data is central to corporate strategy and valued on balance sheet
- Chief Data Officer employed and seated on Board of Directors
- Data trusted and data-driven decision-making required
- Strategy and execution aligned and continuously improved upon
- Outperform competitors based on their unique insights

Poll Question 4:

Where do you feel your organization sits on the Data Governance Maturity Model?

a. Level 0: Unaware
b. Level 1: Aware
c. Level 2: Reactive
d. Level 3: Proactive
e. Level 4: Managed
f. Level 5: Effective

Poll Question 4 Results: (Placeholder)

Be a yardstick of quality. Some people aren’t used to an environment where excellence is expected.

- Steve Jobs

Review Key Takeaways

- Leaders recognize that data is a corporate asset
- Data quality and integrity are strategic priorities
- Identifying your place on the data maturity model
- Take tangible steps to champion data governance
- Start with the fundamental people and processes
- Use tools for automation where valuable
- Build data-driven decision making into values

Questions and Answers

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Thank You to Our Featured Presenters!

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Final Reminders

- **Complete the Evaluation poll** – 2 options
  - On your screen
  - Evaluation Survey icon at the bottom of your console
- **Access to your CPE Certificate** – 2 options
  - Click the “CPE” icon at the bottom of your console

    or
  - Click the link in your post-event e-mail
- Please print a copy of the CPE certificate for your records.
- Your CPE credit will be automatically recorded in your transcript.

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