



# Master Data Management

## Aligning Data, Process, and Governance

Donna Burbank  
Global Data Strategy, Ltd.

April 27, 2023



# Donna Burbank



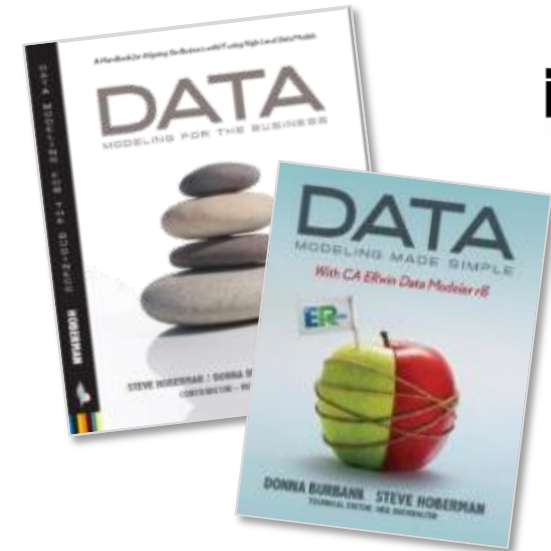
Donna is a recognised industry expert in data management with over 25 years of experience in data strategy, data governance, data modeling, metadata management, and enterprise architecture. Her background is multi-faceted across consulting, product development, product management, brand strategy, marketing, and business leadership.

She is currently the Managing Director at Global Data Strategy, Ltd., an international data management consulting company that specializes in the alignment of business drivers with data-centric technology.

In past roles, she has served in key brand strategy and product management roles at CA Technologies and Embarcadero Technologies for several of the leading data management products in the market.

As an active contributor to the data management community, she is a long time DAMA International member, contributor to the DMBOK 2.0, Past President and Advisor to the DAMA Rocky Mountain chapter, and was awarded the Excellence in Data Management Award from DAMA International.

She has worked with dozens of Fortune 500 companies worldwide in the Americas, Europe, Asia, and Africa and speaks regularly at industry conferences. She has co-authored several books and is a regular contributor to industry publications. She can be reached at [donna.burbank@globaldatastrategy.com](mailto:donna.burbank@globaldatastrategy.com) Donna is based in Boulder, Colorado, US.



# DATAVERSITY Data Architecture Strategies

## This Year's Lineup

- **January** Emerging Trends in Data Architecture – What's the Next Big Thing?
- **February** Building a Data Strategy - Practical Steps for Aligning with Business Goals
- **March** Data Mesh or Data Mess? Separating the Reality from the Hype
- **April** Master Data Management - Aligning Data, Process, and Governance
- **May** How do Data Governance & Data Architecture Support Each Other?
- **June** Why You Need Data Management – Getting Executive Buy-In
- **July** Artificial Intelligence and Machine Learning – Building the Right Architectural Foundation
- **August** Data Quality Best Practices (with Nigel Turner)
- **September** Best Practices in Metadata Management
- **October** Designing Data for Business Intelligence & Analytics – Where the Star Schema Fits in a Modern Data Architecture
- **December** Enterprise Architecture vs. Data Architecture



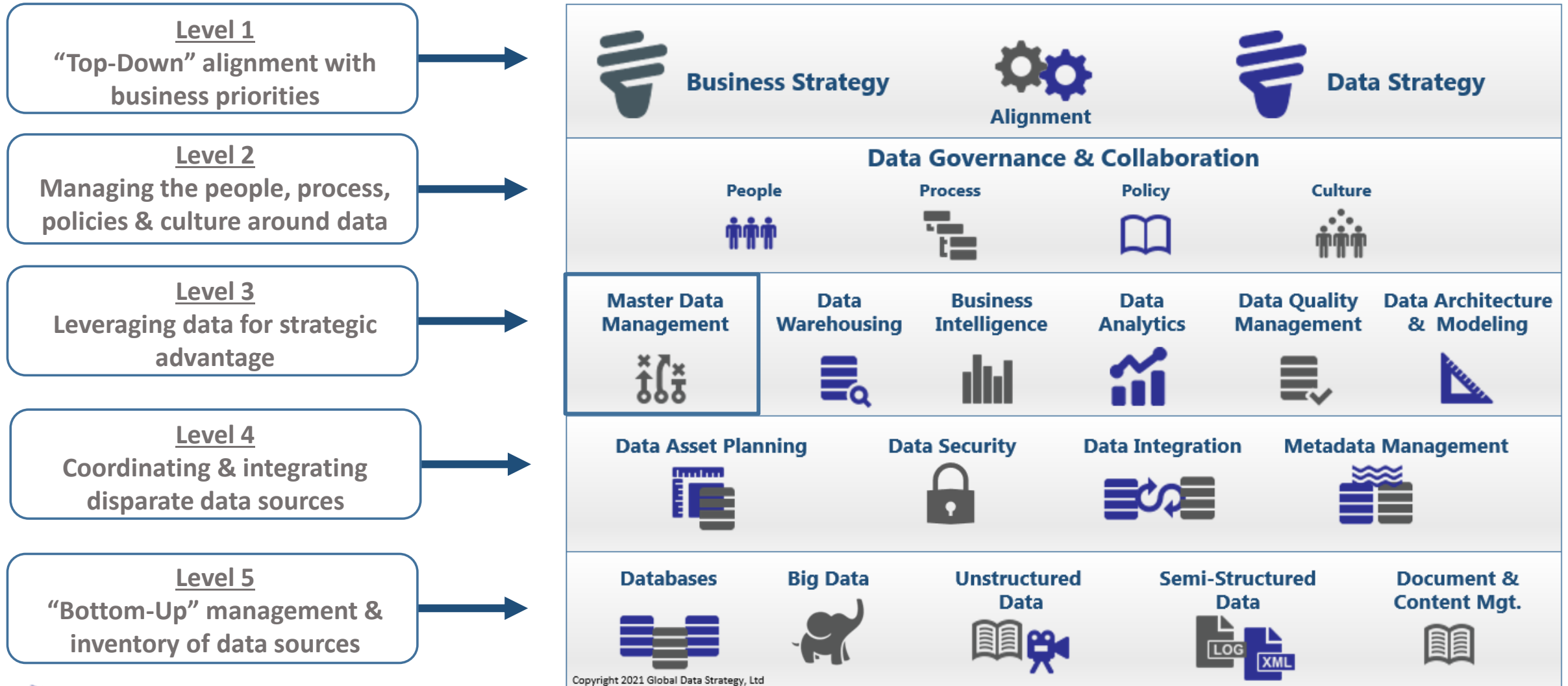
# What We'll Cover Today

- Master Data Management (MDM) provides organizations with an **accurate and comprehensive view of business-critical data** such as Customers, Products, Vendors, and more.
- While mastering these key data areas can be a complex task, **the value of doing so can be tremendous** – from real-time operational integration to data warehousing & analytic reporting.
- This webinar provides **practical strategies for gaining value from your MDM initiative**, while at the same time assuring a solid architectural and governance foundation that will ensure long-term, enterprise-wide success.



# Master Data is Part of a Wider Data Strategy

A Successful Data Strategy links Business Goals with Technology Solutions



# What is Master Data?

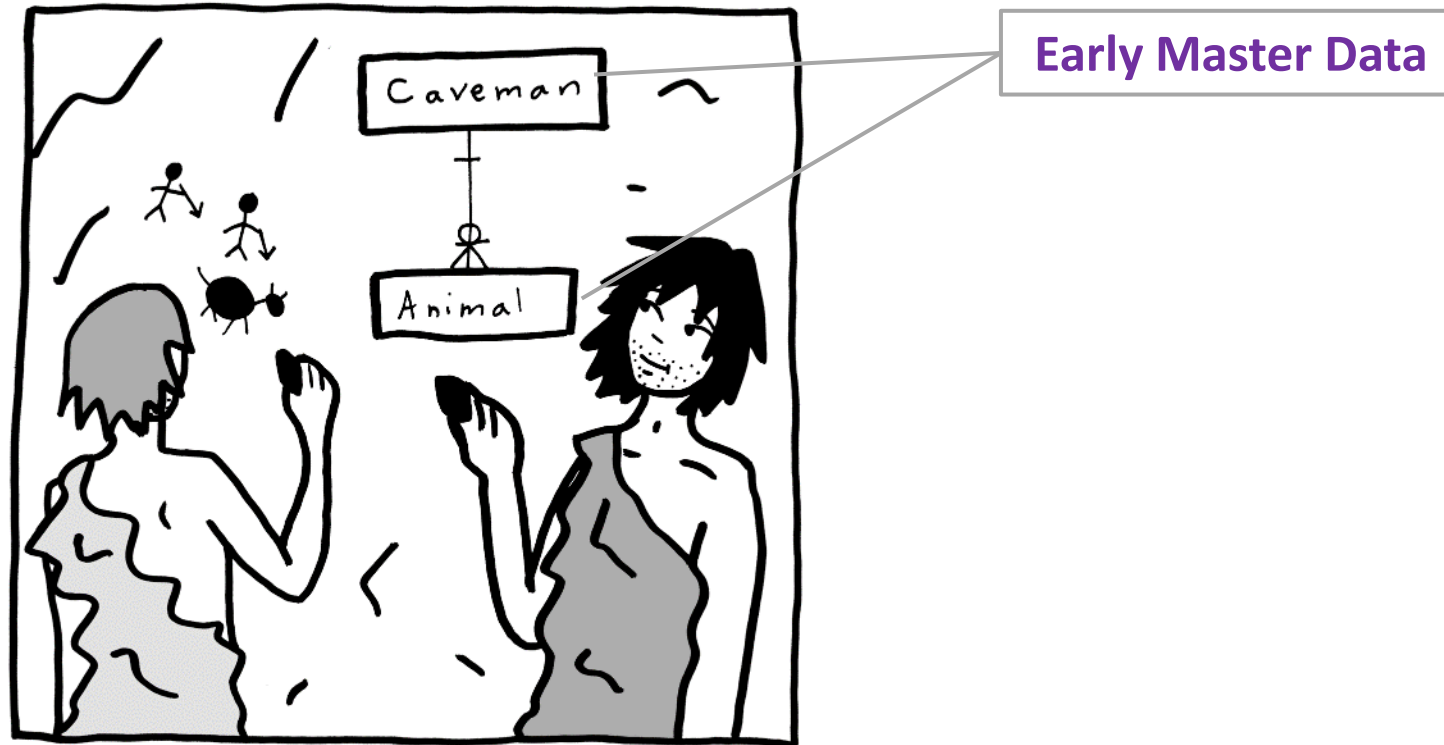
## Definition

- **Master Data** is the consistent and uniform set of identifiers and extended attributes that describes **the core entities of the enterprise** including customers, prospects, citizens, suppliers, sites, hierarchies and chart of accounts (*sic*).
- **Master data management (MDM)** is a technology-enabled discipline in which business and IT work together to ensure the uniformity, accuracy, stewardship, semantic consistency and accountability of the enterprise's official shared master data assets.

- Source Gartner

# Master Data

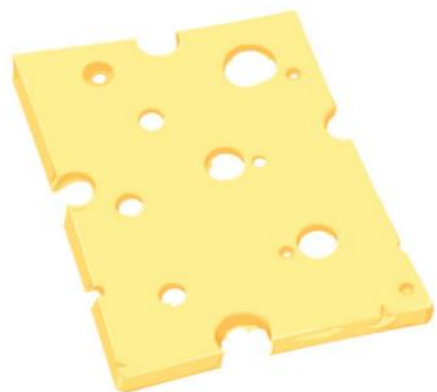
Master Data is often the most critical data of the organization – and the most intuitive for business users to grasp.



From *Data Modeling for the Business* by Hoberman, Burbank, Bradley, Technics Publications, 2009

# What is Master Data?

## Real-world examples



The \$1M cheese slice



The \$2M baby bottle



The “dead” living organism



Which Dr. Smith is credentialed for heart surgery?



Which Michael Jones is the high-net worth customer?



How do we define Regions, Markets, Locations, Catchments, Sites, etc.?



# What is Master Data?

## Real-world examples



# Understanding Your Customer

A 360 Degree View through Data



Occupation = Ski Instructor



Address = Pontresina, Switzerland



Purchased €500 in outdoor gear in 2015



Member of Loyalty Program since 2010



**Stefan Krauss**  
Age = 31



100% of purchases online



Top Finisher in Engadin Ski Marathon 2010-2015



Prefers Text Message

# Understanding Your Customer

## A 360 Degree View through Data



Occupation = Banker



Address = Zurich, Switzerland



Purchased €3.500 in outdoor gear in 2019



Member of Loyalty Program since 1990



Stefan Krauss

Age = 62



75% of spending is while on holiday



Football Fan

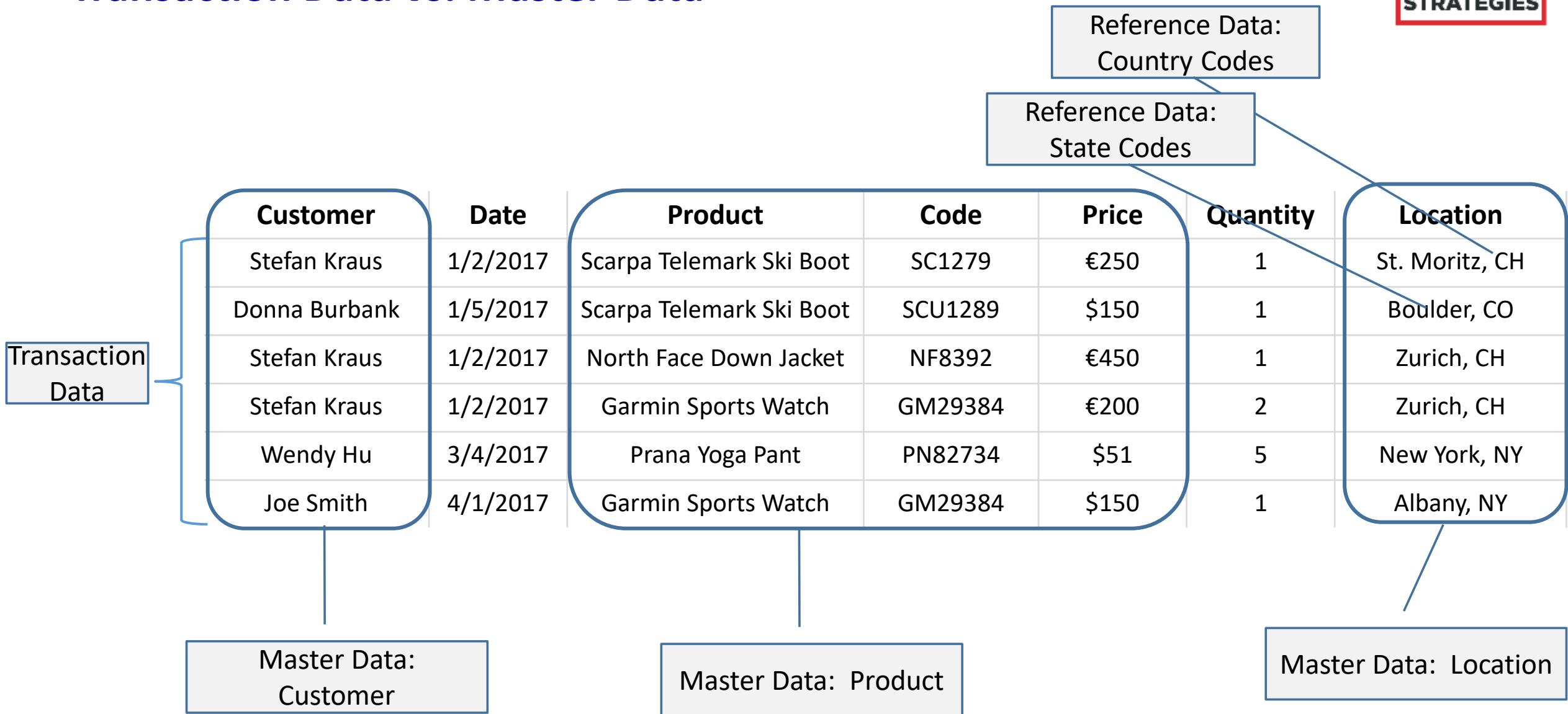


Prefers Physical Mail



100% of spending in store

# Transaction Data vs. Master Data



# What is Master Data? What is Reference Data?

One person's **Master Data** is another person's **Reference Data**...



## Master Data



How do we define Regions, Markets, Locations, Catchments, Sites, etc.?

VS.

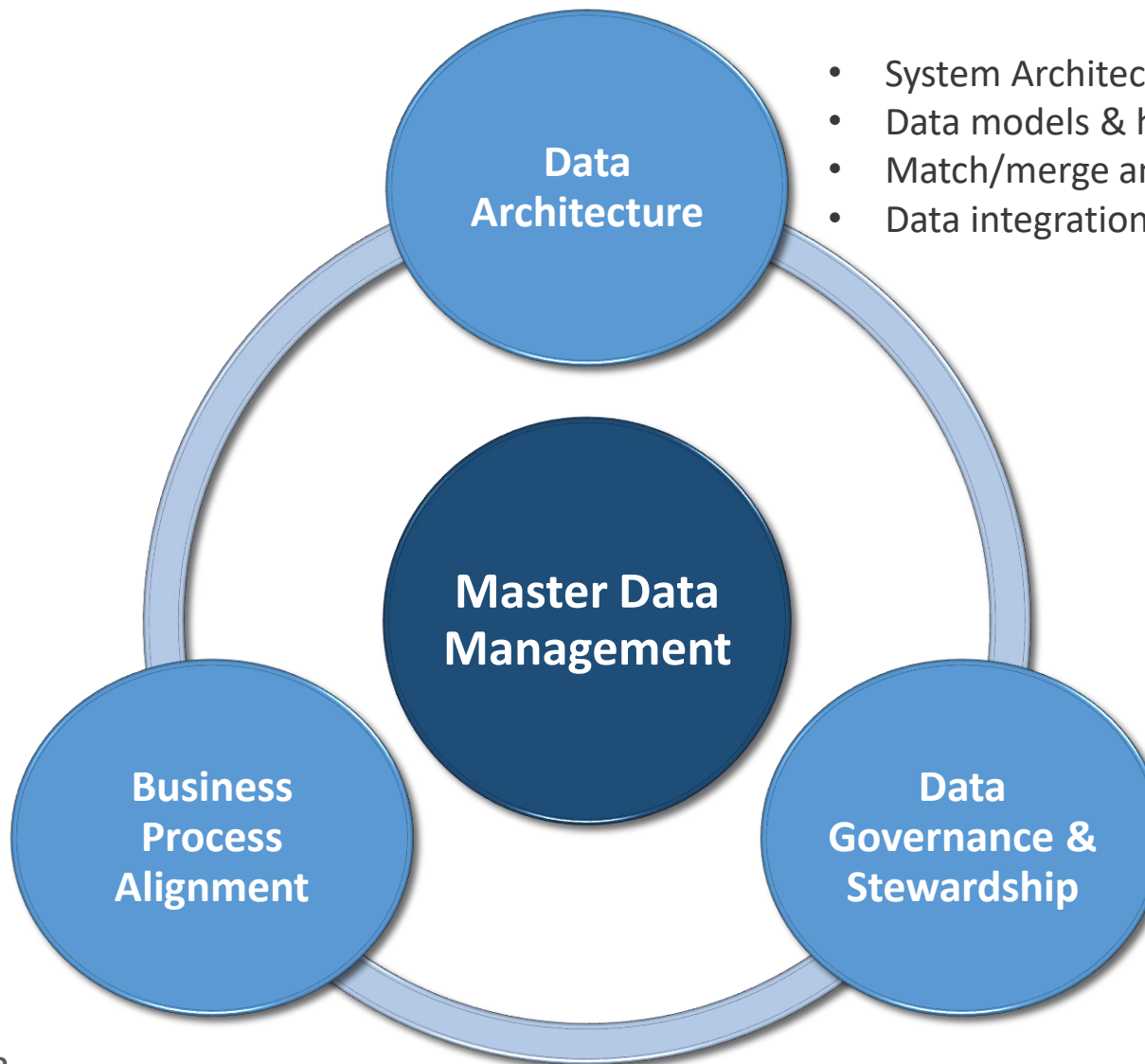
## Reference Data

Address Line 1
Address Line 2
City
State



AL
AK
AR
AZ
CA
CO
..etc.

# Successful MDM Combines Data, Process, and Governance



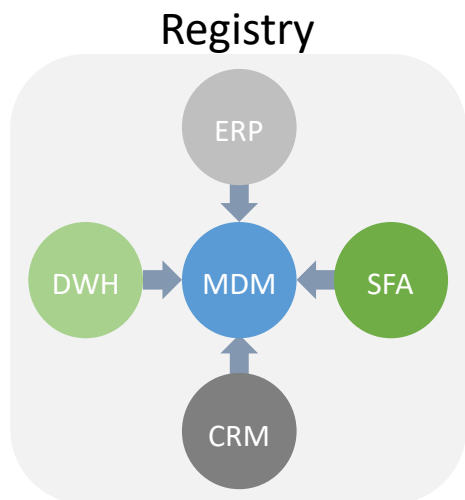
- System Architecture & data flow
- Data models & hierarchies
- Match/merge and survivorship rules
- Data integration & design

- Business process models
- Customer journey maps
- Data mapping to process
- CRUD and usage matrices
- Optimizing business process for data improvement

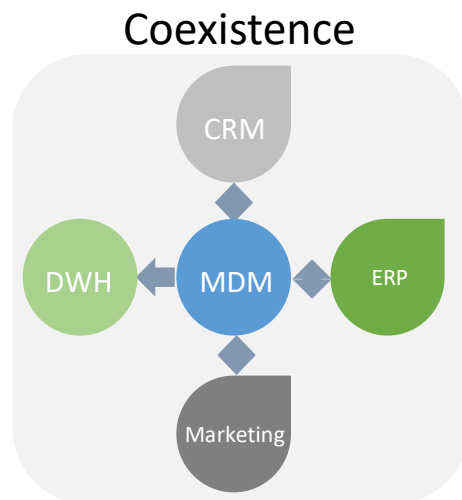
- Accountability & stewardship
- Business rule validation
- Conflict resolution
- Business Prioritization

# MDM Implementation Styles

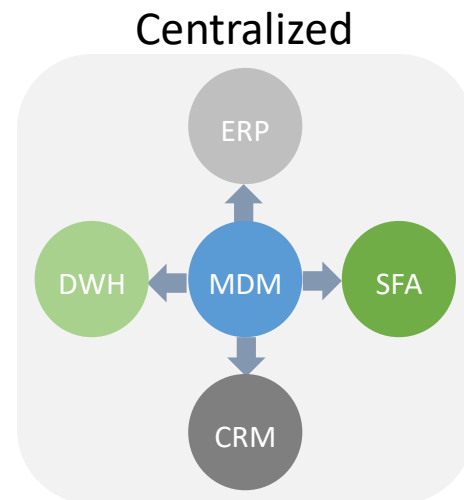
- Organizing for MDM: Defining the Implementation Style



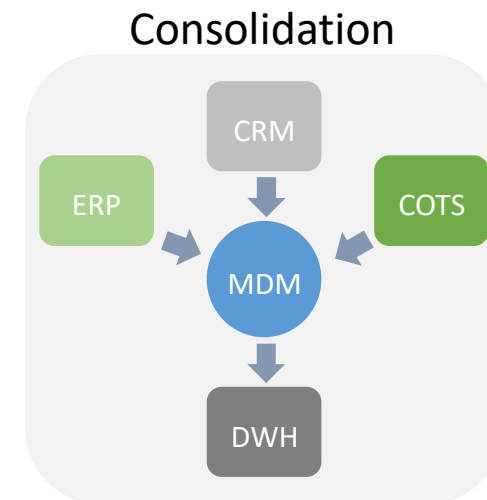
- Provides cross-reference index of source systems IDs
- No physical data consolidation and is often read-only access
- Authoring remains distributed
- Less intrusive



- Consumes source data, de-duplicates, enriches and consolidates view of master data
- Stewardship workflows for data governance and approval orchestration
- Harmonization back to authoring systems
- More intrusive



- Central authoring of master data, enrichment and duplicate prevention
- Acts as System of Record to Support Transactional Activity
- Most intrusive



- Matches and physically stores a consolidated view of master data post transactional events
- Used for reference versus supporting transactional activity
- Authoring remains distributed
- Less intrusive

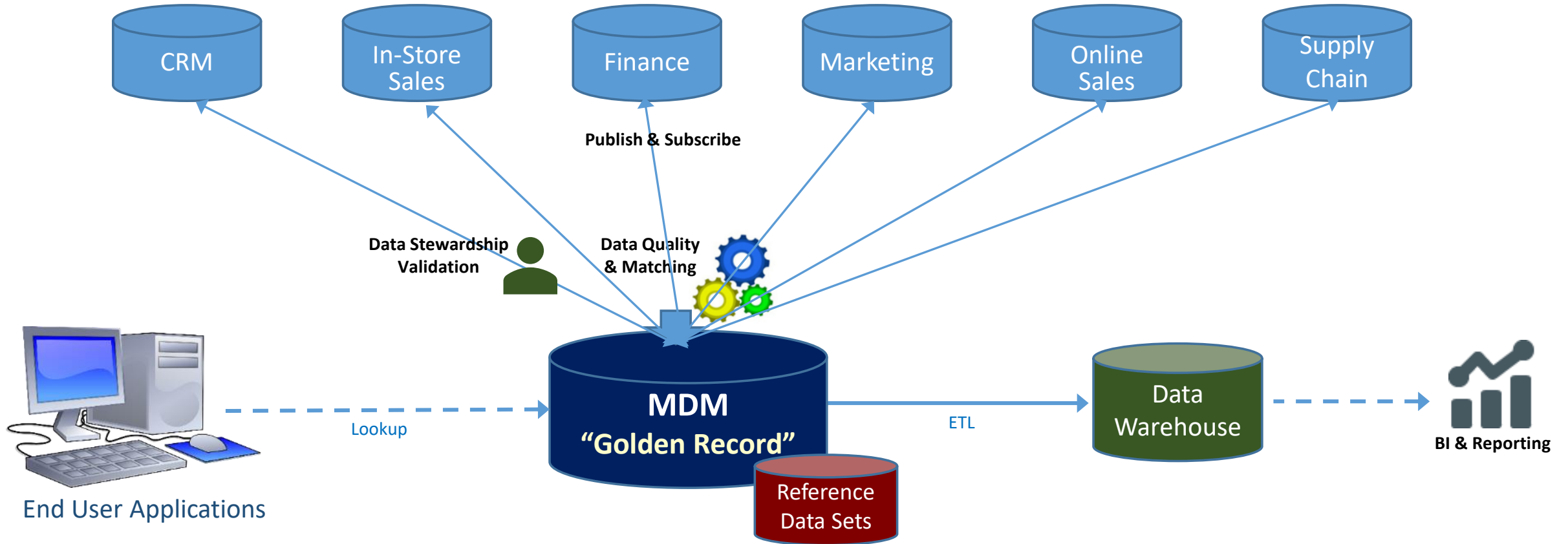


**Operational Focus**



**Analytical Focus**

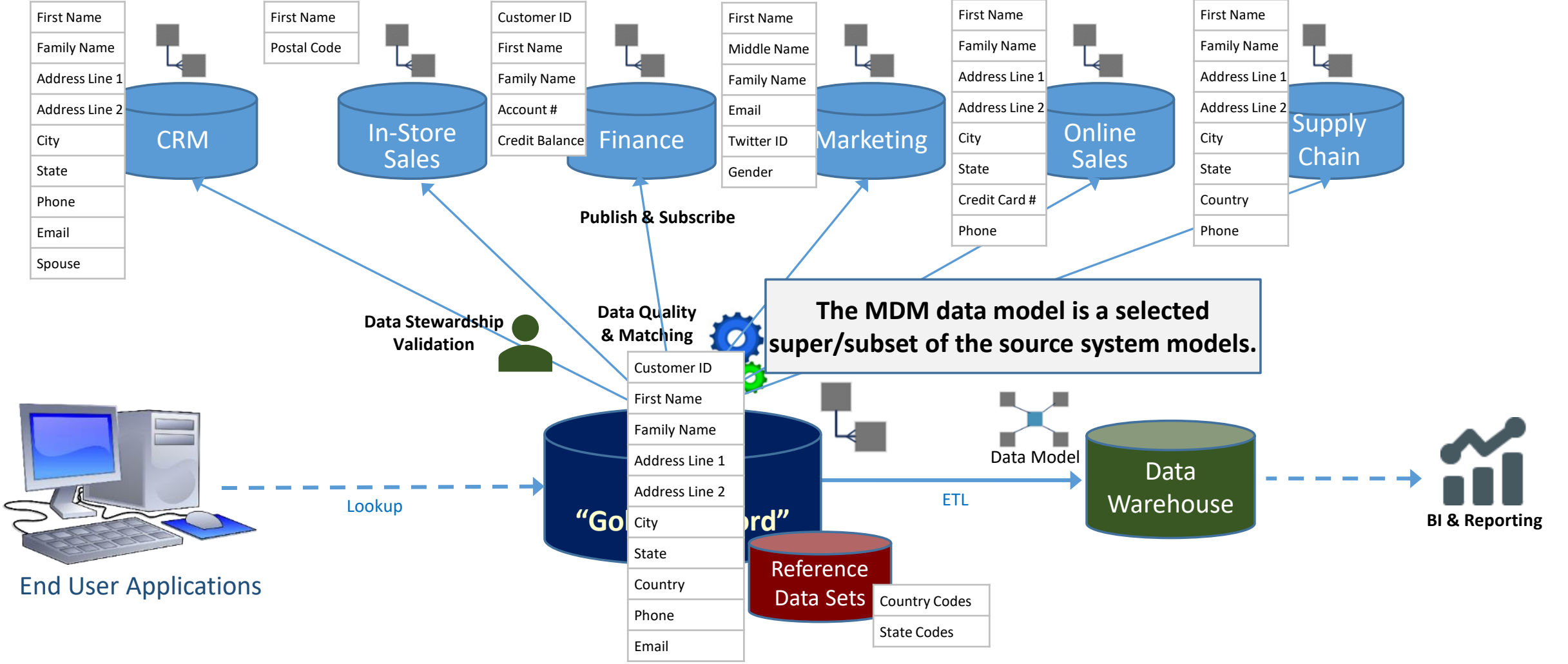
# Master Data Overview





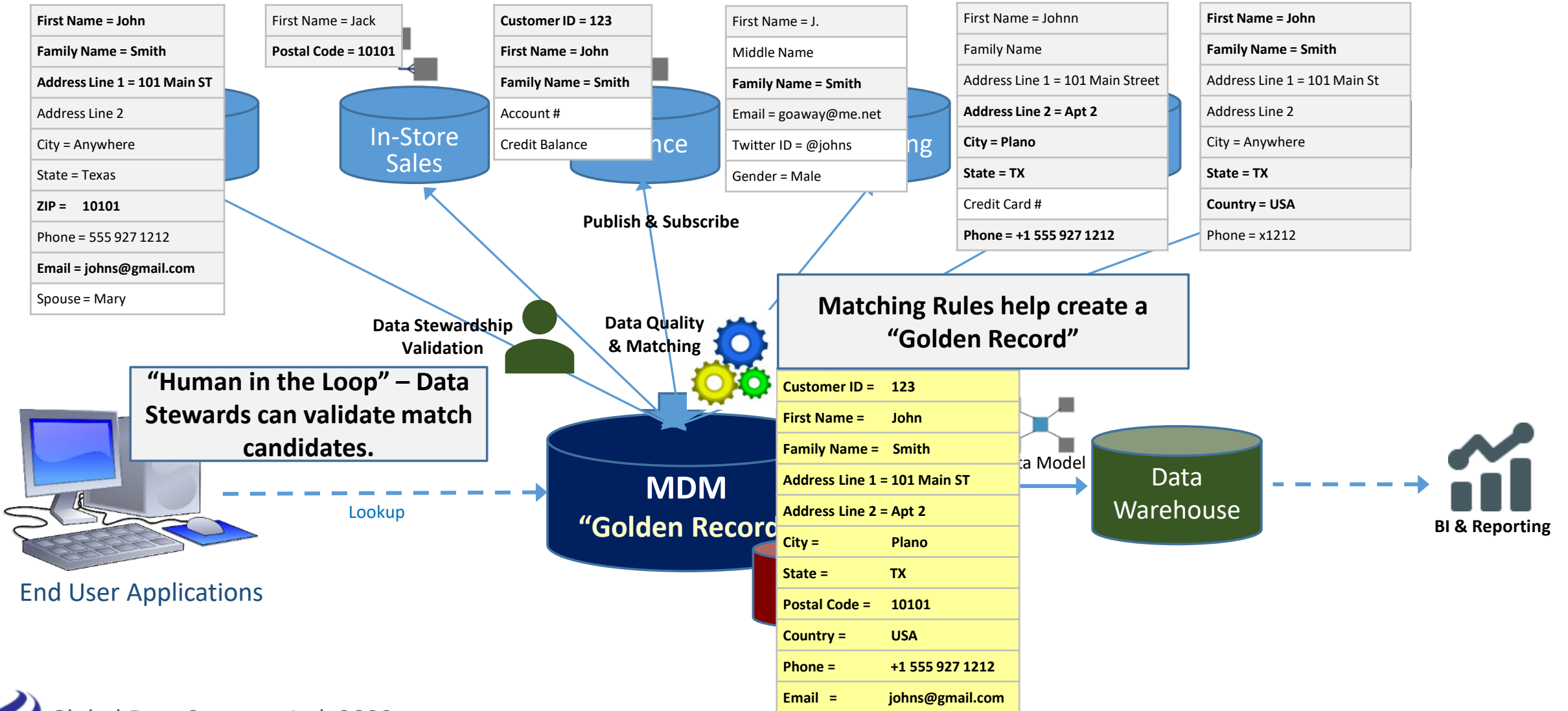
# Master Data Overview

Each system has its own unique functionality and associated data model.



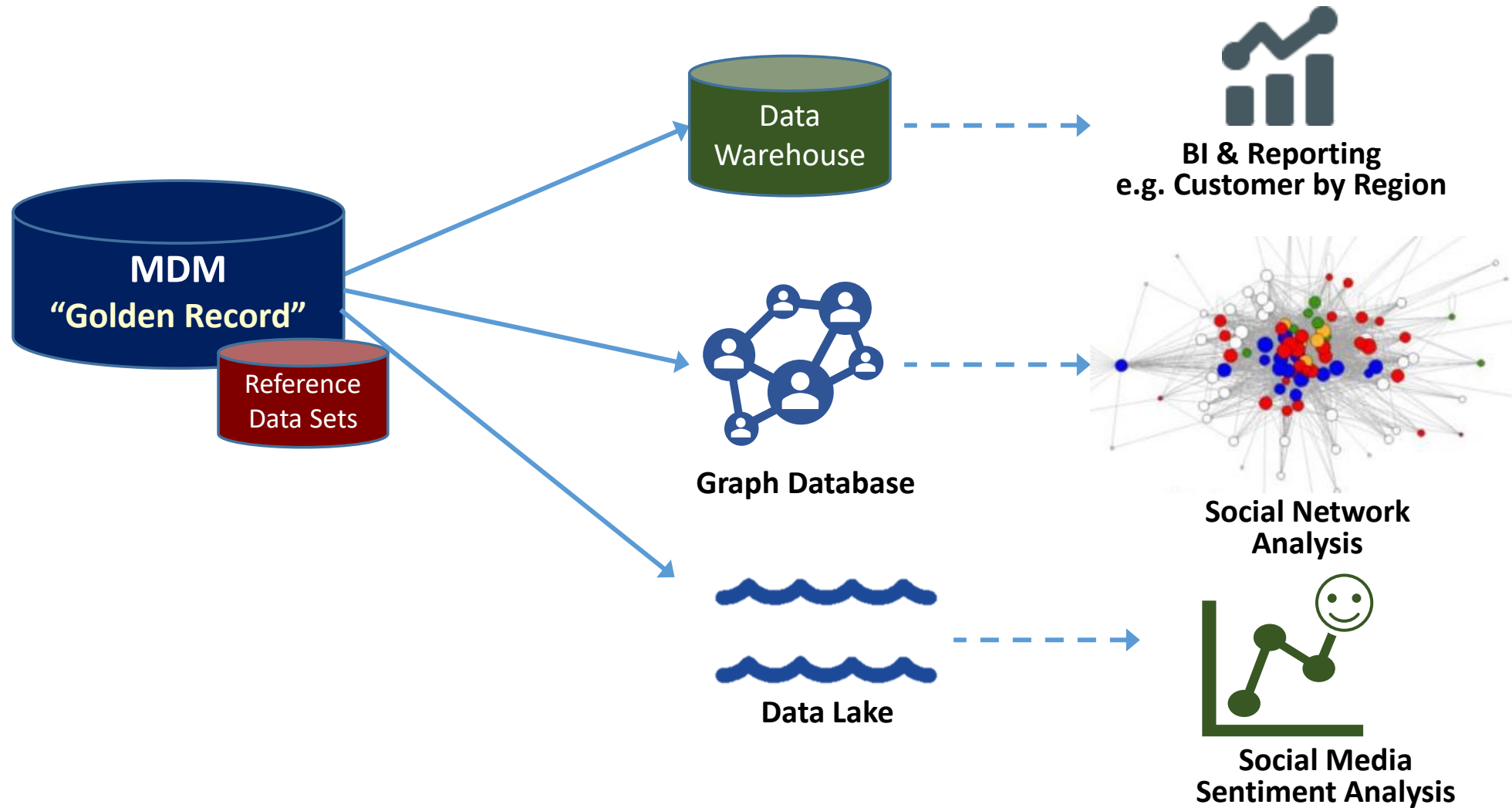
The MDM data model is a selected super/subset of the source system models.

# Master Data Overview



# MDM is not Reporting or Analytics

## -- It can be a Source



# Governance & Business Process for MDM

- While the implementation of the hub and population strategies is complex, **more complex is understanding the business processes and governance processes** around the populating and publishing systems.
- In fact, the top two reasons for failure of MDM systems cited by the Gartner analyst group<sup>1</sup> are :

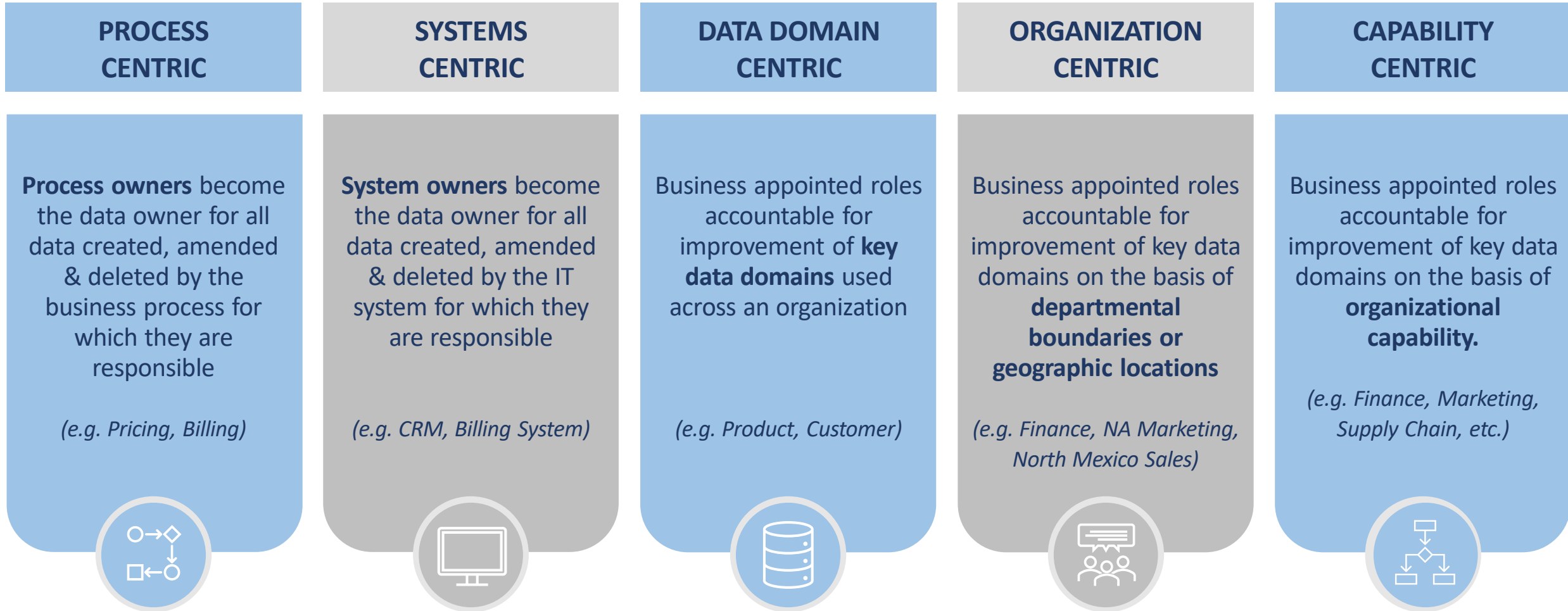
Failure of IT to Align With  
**Business Process** Improvements  
 and Document Business Value

Delaying or Mismanaging  
 Information **Governance**  
 Implementation

<sup>1</sup>Top Four Reasons Your MDM Program Will Fail, and How to Avoid Them, Gartner, 2016, ID: G00223675, by Bill O’Kane. Note: The remaining two reasons are: Failure to Manage Initial Master Data Quality & Defining Transactional (Fact) Data as Master Data

# Models of Data Governance & Stewardship

There are diverse ways to implement data stewardship, unique to each organization.



# Sample Data Governance Roles

## Business Data Owner



- Represents the data needs for a particular functional area
- Defines key KPIs & data elements
- Defines key business rules
- Sets Data Quality Metrics & Thresholds

## Business Data Steward



- Responsible for the day-to-day management and quality of data
- Subject Matter Expert (SME) for a given business domain
- Aligns with the Data Owner to support business rules and to align with key KPIs

## Technical Data Steward

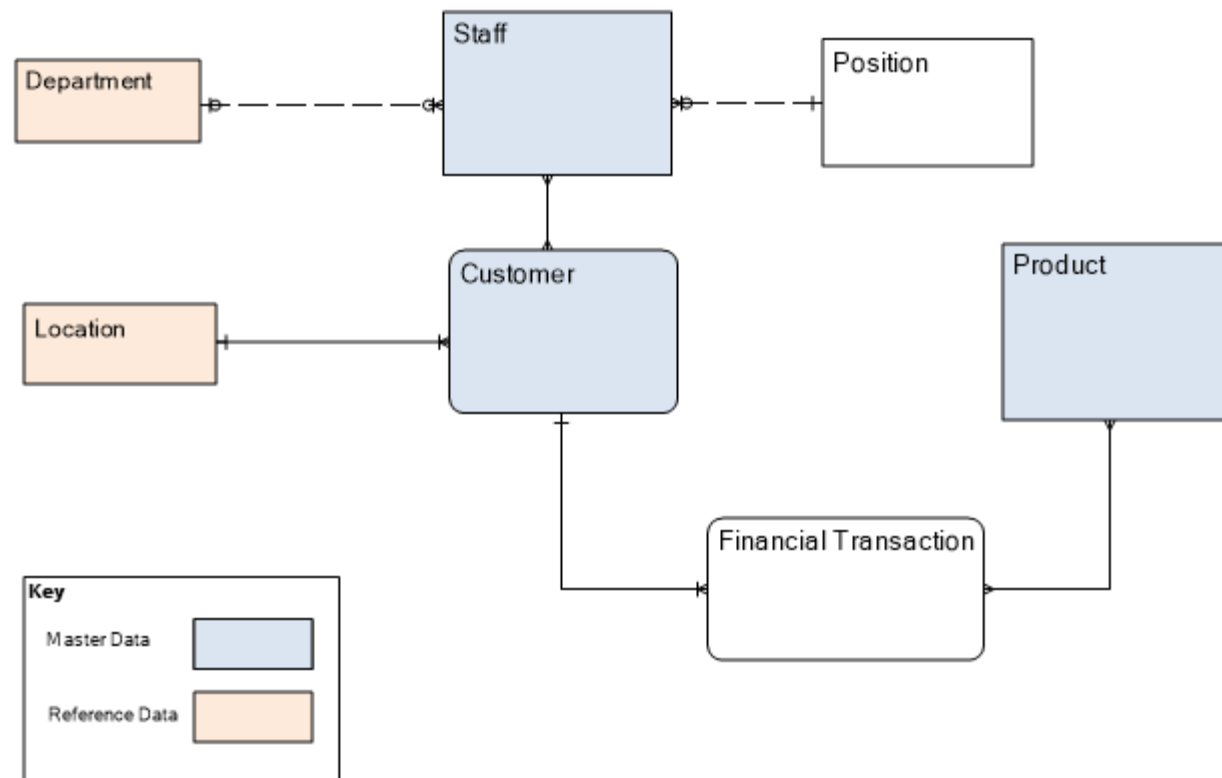


- Subject matter expert for a given system and its usage (e.g. CRM, ERP, etc.)
- Aligns with Business Data Stewards to ensure technical needs are met

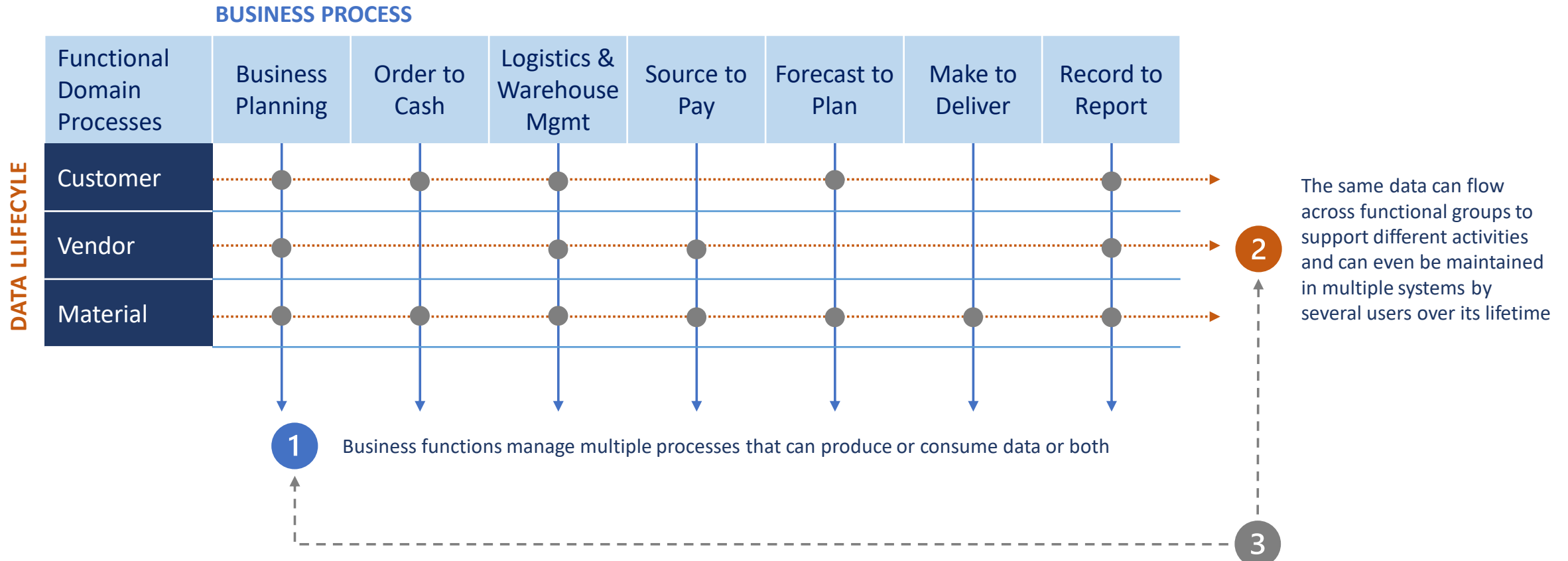
# Conceptual Data Model

## Supporting Data Domain-centric Governance

Conceptual Data Models are helpful tools in identifying key master and reference data domains.



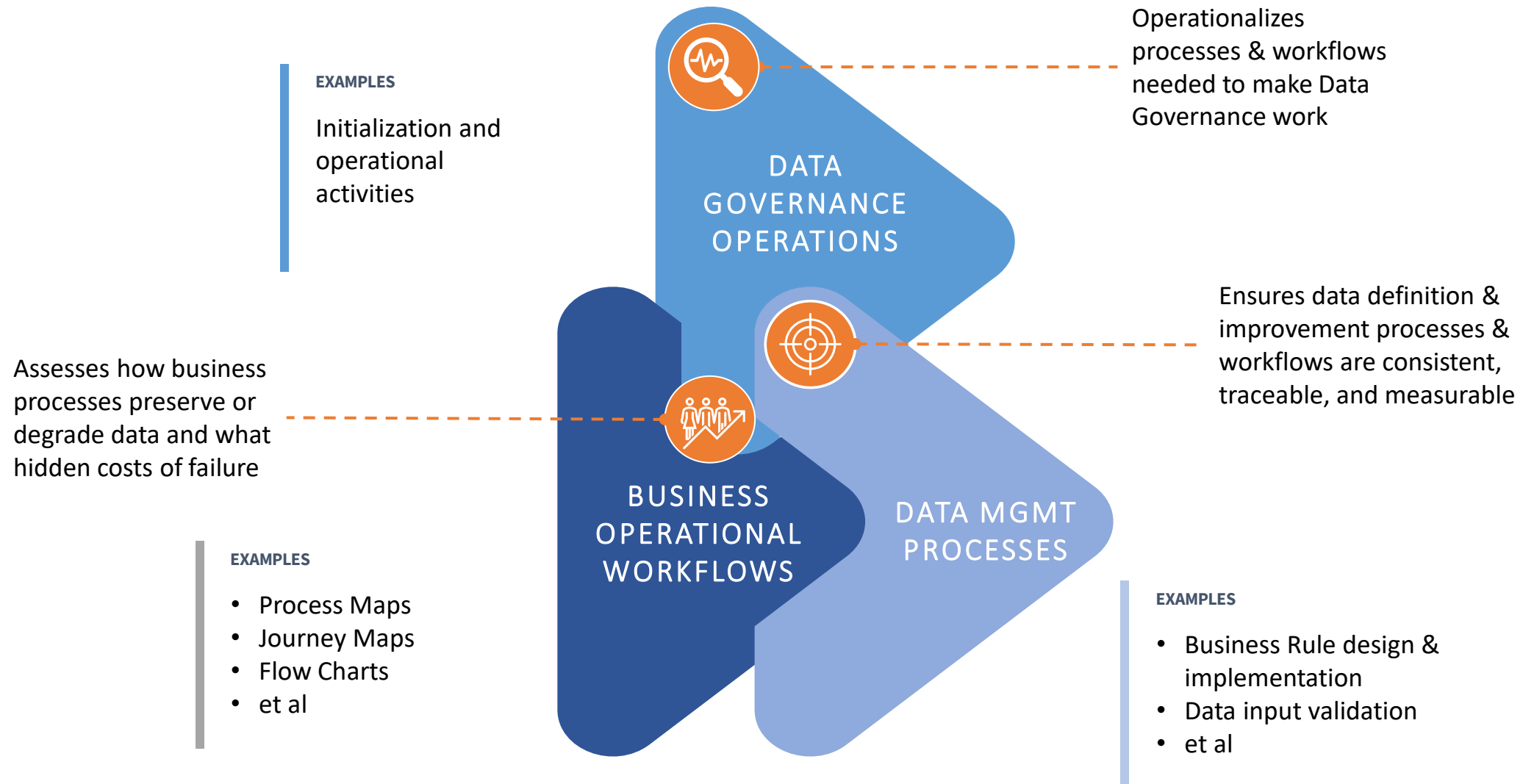
# Successful Data Governance Requires Alignment of Process & Data



**Each intersection of data and process is a governance requirement for data that is produced or consumed to align WHO – does WHAT – to WHAT - WHEN**



# Process & Workflow: Categories & Touchpoints

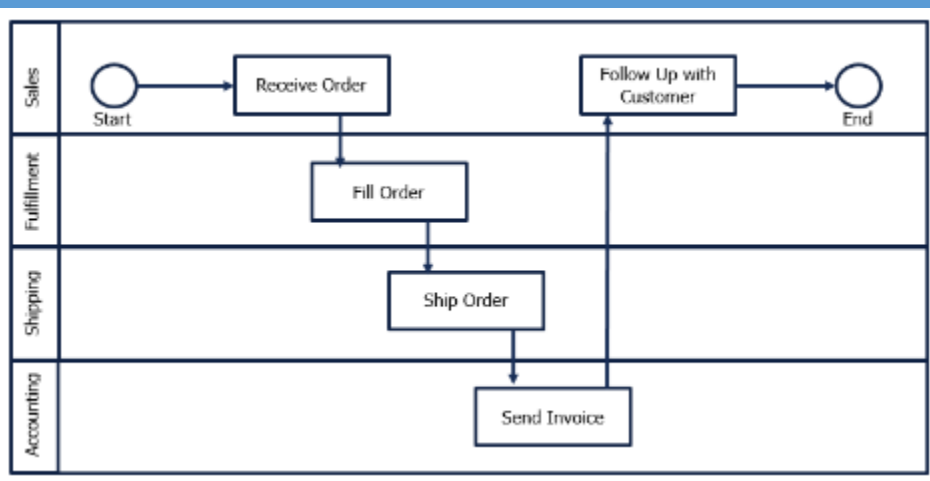


# The Importance of Business Process

## Identifying key data dependencies in core business processes

- Process models are a helpful tool for describing core business processes (e.g. BPMN).
  - “Swimlanes” outline organizational considerations
  - Data can be mapped to key business processes to understand creation & usage of information (CRUD Matrix)
- Understanding business process is critical to Master Data & related Data Governance
  - Who is using data?
  - How is it used in business processes?
  - Are there redundancies, conflicts, etc.?

Business Process Model

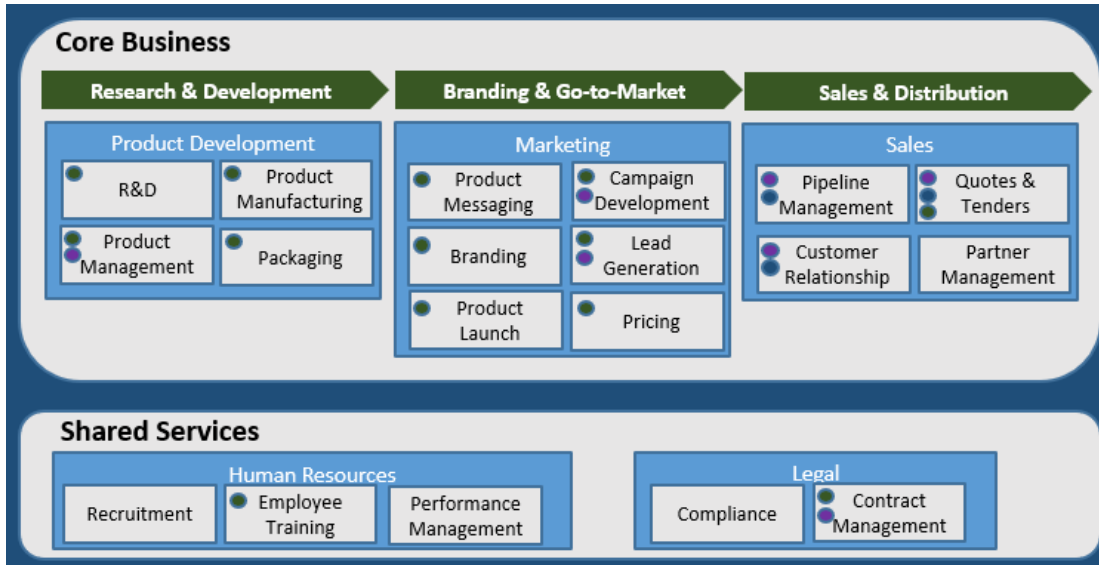


CRUD Matrix

	Customer	Order	Account	Invoice	Product
Receive Customer Order	R	C	C, R		
Process Customer Order	C,R,U		R,U		R
Fill Order	R,U		R,U		R,U
Send Invoice	R,U		R,U	C	

# Organizational or Capability – Based Approach

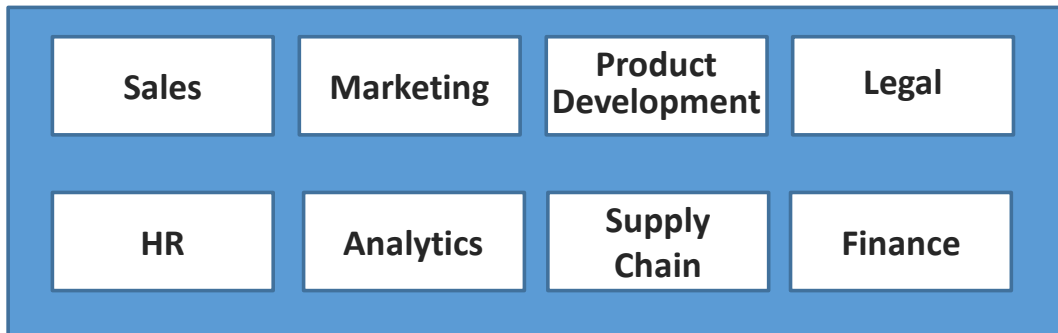
A Comprehensive View of Data Across the Enterprise



An Organization or Capability-centric approach helps gain cross-functional input for data decisions.

Who “owns” Customer, Patient, Student, Product, Ingredient, Component, Brand, etc...?

## Data Governance Committee



# Optimizing Restaurant Revenue through Menu Data

## Managing the Data that Runs the Business

- An international restaurant chain realized through its digital strategy that:
  - While menus are the core product that drives their business...
  - They had little control or visibility over their menu data
  - Menu data was scattered across multiple systems in the organization from supply chain to kitchen prep to marketing, restaurant operations, etc.
- Menu data was consolidated & managed in a central hub:
  - **Master Data Management** created a “single view of menu” for business efficiency & quality control
  - **Data Governance** created the workflow & policies around managing menu data
- Process Models & Data Mappings were critical
  - **Business Process diagrams** to identify the flow of information
  - **CRUD Matrixes** to understand usage, stewardship & ownership

**Product Creation & Testing**



**Menu Display & Marketing**



**Supply Chain**



**Point of Sale & Restaurant Operations**



- Interest in Master Data Management (MDM) is on the rise as more organizations look to gain a common, consistent source for their core data assets (Customer, Product, Supplier, Employee, etc.)
- Successful MDM is part of a wider data strategy and requires integration with:
  - Data Architecture
  - Business Process Alignment
  - Data Governance & Stewardship
- Getting this combination right can have a positive impact on the success of the business.

# DATAVERSITY Data Architecture Strategies

## Join Us Next Month

- **January** Emerging Trends in Data Architecture – What’s the Next Big Thing?
- **February** Building a Data Strategy - Practical Steps for Aligning with Business Goals
- **March** Data Mesh or Data Mess? Separating the Reality from the Hype
- **April** Master Data Management - Aligning Data, Process, and Governance
- **May** How do Data Governance & Data Architecture Support Each Other?
- **June** Why You Need Data Management – Getting Executive Buy-In
- **July** Artificial Intelligence and Machine Learning – Building the Right Architectural Foundation
- **August** Data Quality Best Practices (with Nigel Turner)
- **September** Best Practices in Metadata Management
- **October** Designing Data for Business Intelligence & Analytics – Where the Star Schema Fits in a Modern Data Architecture
- **December** Enterprise Architecture vs. Data Architecture



# Who We Are: Business-Focused Data Strategy

## Maximize the Organizational Value of Your Data Investment



In today's business environment, showing **rapid time to value** for any technical investment is critical.

But technology and data can be complex. At Global Data Strategy, **we help demystify technical complexity** to help you:

- Demonstrate the ROI and **business value of data** to your management
- Build a data strategy **at your pace to match your unique culture** and organizational style.
- Create an **actionable roadmap for “quick wins”**, which building towards a long-term scalable architecture.

Global Data Strategy's shares experience from some of the largest international organizations scaled to the pace of your unique team.

Global Data Strategy has worked with organizations globally in the following industries:

Finance · Retail · Social Services · Health Care · Education · Manufacturing  
· Government · Public Utilities · Construction · Media & Entertainment ·  
Insurance .... and more



Thoughts? Ideas?  
Questions?