Master Data Management
Aligning Data, Process, and Governance

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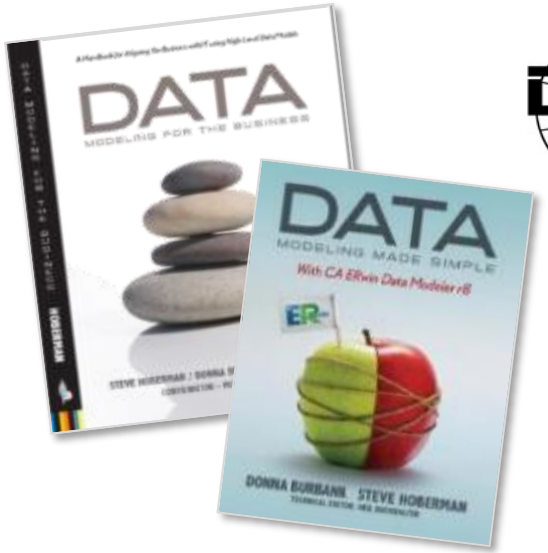
Donna is a recognized industry expert in data management with over 25 years of experience in data strategy, data governance, data modeling, metadata management, and enterprise architecture. Her background is multi-faceted across consulting, product development, product management, brand strategy, marketing, 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 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 member, contributor to the DMBOK 2.0 and 3.0, 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
Donna is based in Boulder, Colorado, US.



DATAVERSITY Data Architecture Strategies

This Year's Lineup

- **January** Trends in Data Architecture
- **February** Building a Data Strategy - Practical Steps for Aligning with Business Goals
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- **April** Data Architect vs. Data Engineer vs. Data Scientist – Making Sense of Roles in Today's Data-Centric Organization
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- **June** Where Data Models Fit in Today's Modern Data Architecture
- **July** Data Architecture vs. Enterprise Architecture
- **August** Data Quality Best Practices (with guest Nigel Turner)
- **September** Modern Data Architecture: Practical Options for Today's Data-Driven Organization
- **October** Best Practices in Metadata Management
- **December** The Business Value of Data Modeling

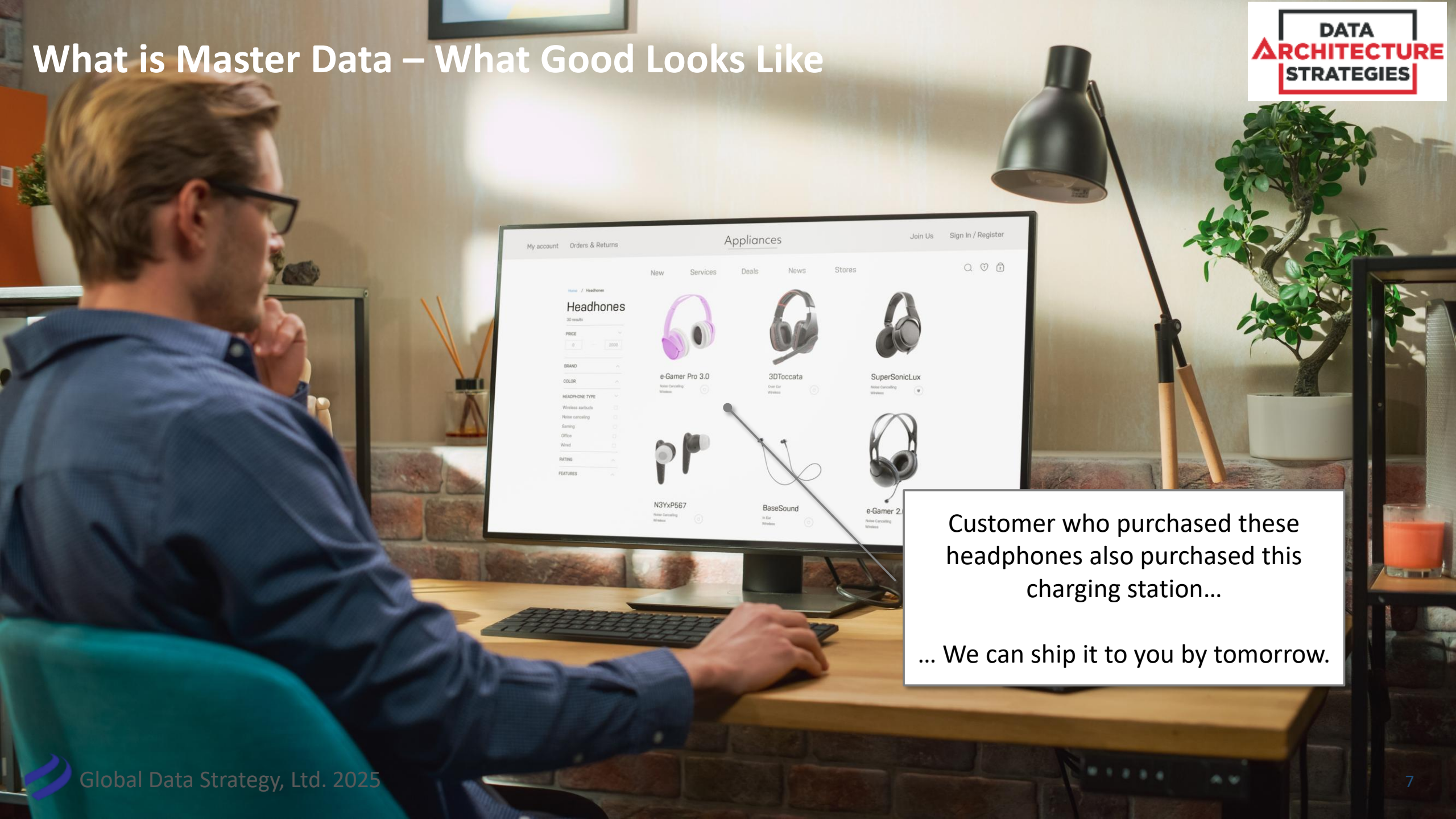
What We'll Cover Today

- 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.

What is Master Data – What Good Looks Like

What is Master Data – Getting it Wrong

What is Master Data – What Good Looks Like



Customer who purchased these headphones also purchased this charging station…

… We can ship it to you by tomorrow.

What is Master Data – Getting it Wrong

What is Master Data?

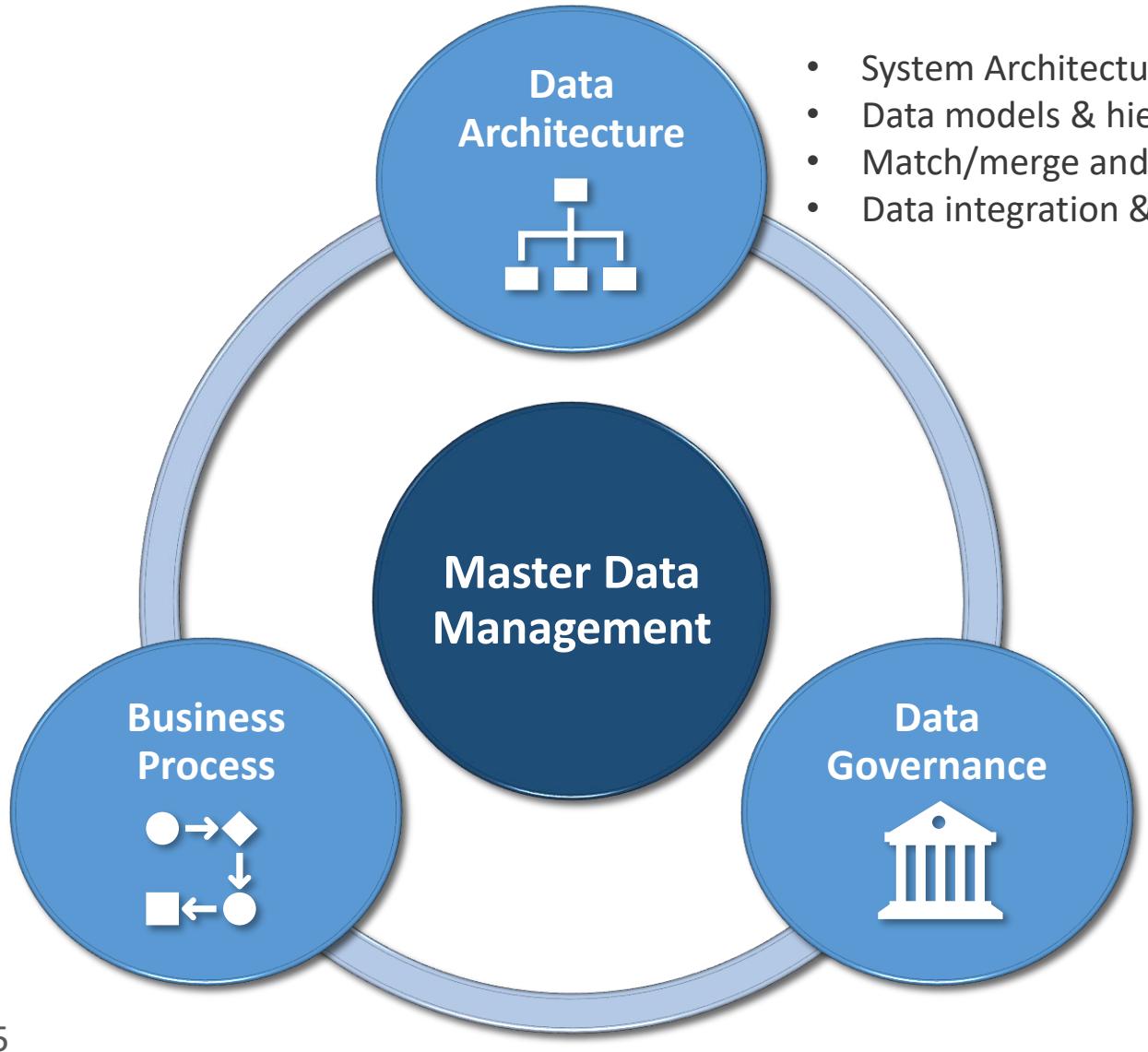
Definition

- **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

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
- CRUD and usage matrices
- Optimizing business process for data improvement

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

Data Governance & Business Process for MDM

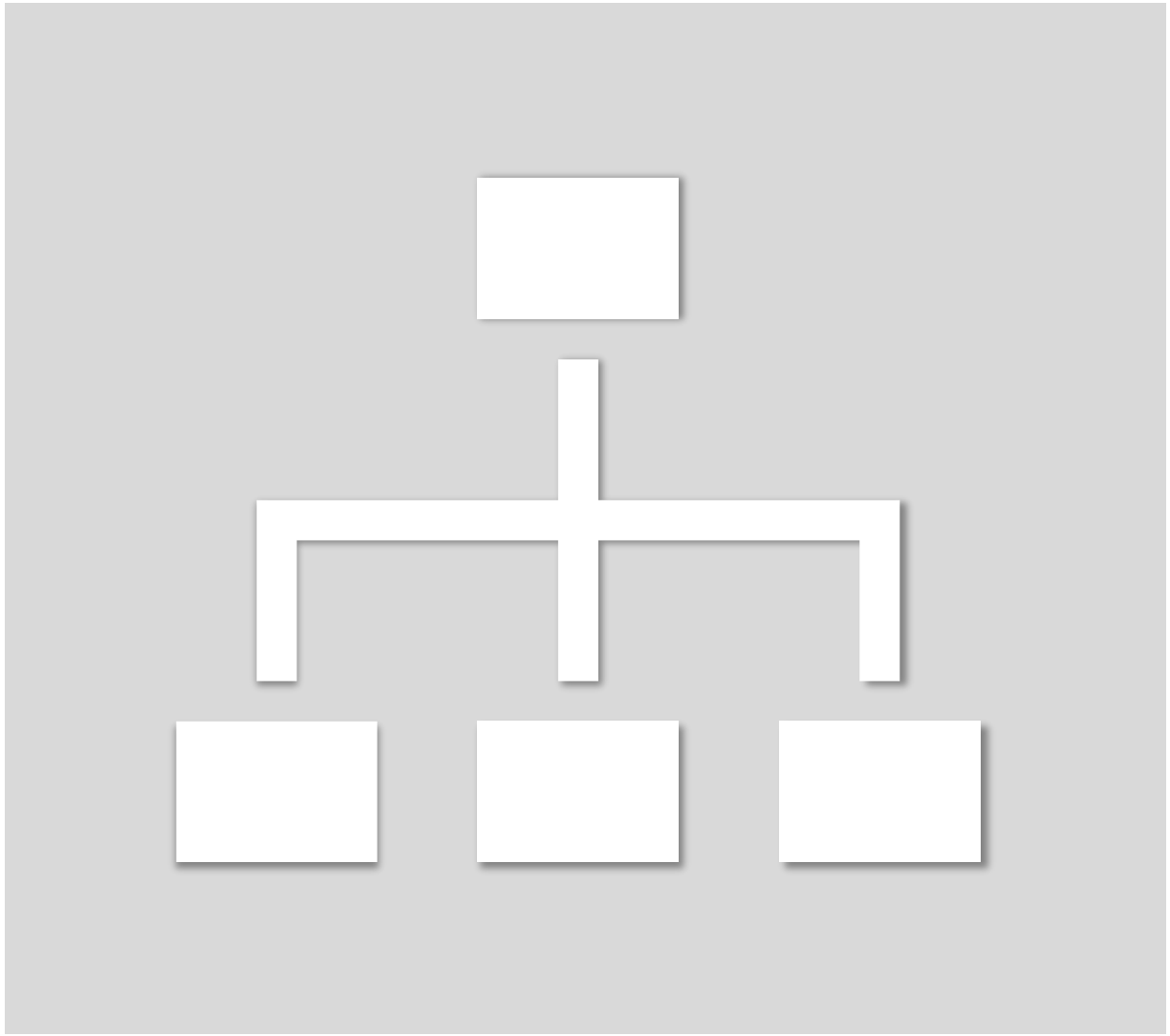
- While the data architecture for MDM is complex, **more complex is understanding the business processes and governance processes**.

- In fact, the top two reasons for failure of MDM systems cited by the Gartner analyst group[1] are :

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

Delaying or Mismanaging Information **Governance** Implementation

[1] 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

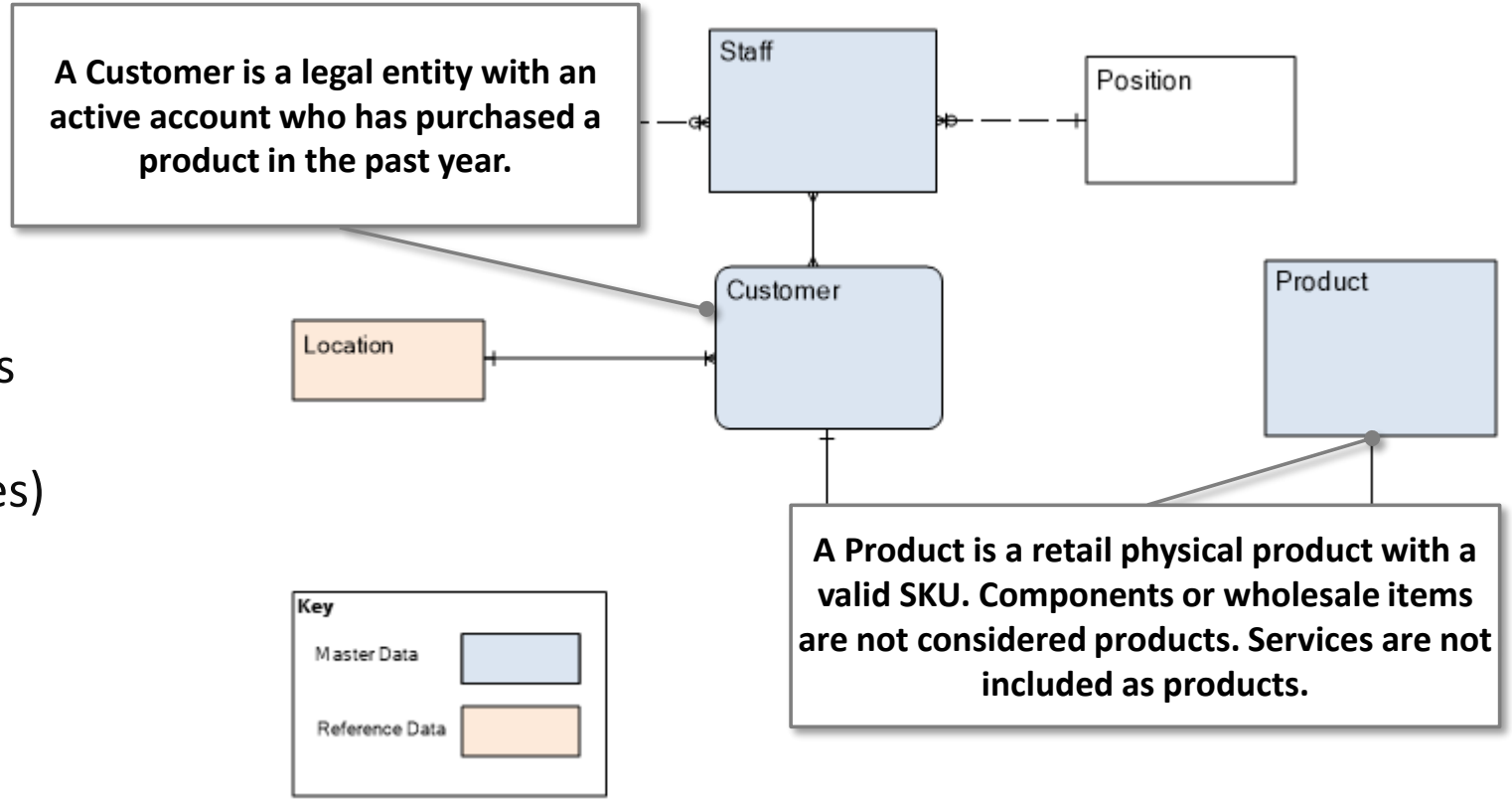


Data Architecture

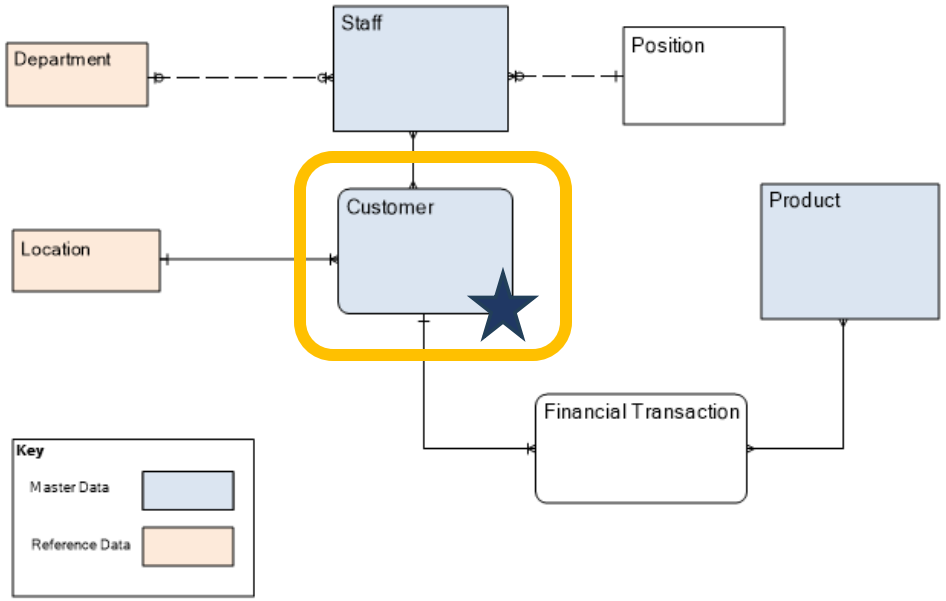
Conceptual Data Model

Conceptual Data Models are helpful tools in identifying:

- Master and reference data domains
- Definitions of data domains (entities)
- Relationships between domains



Identifying Critical Data Elements (CDEs) for Master Data



For each Master Data Domain, critical data elements (attributes) must be identified:

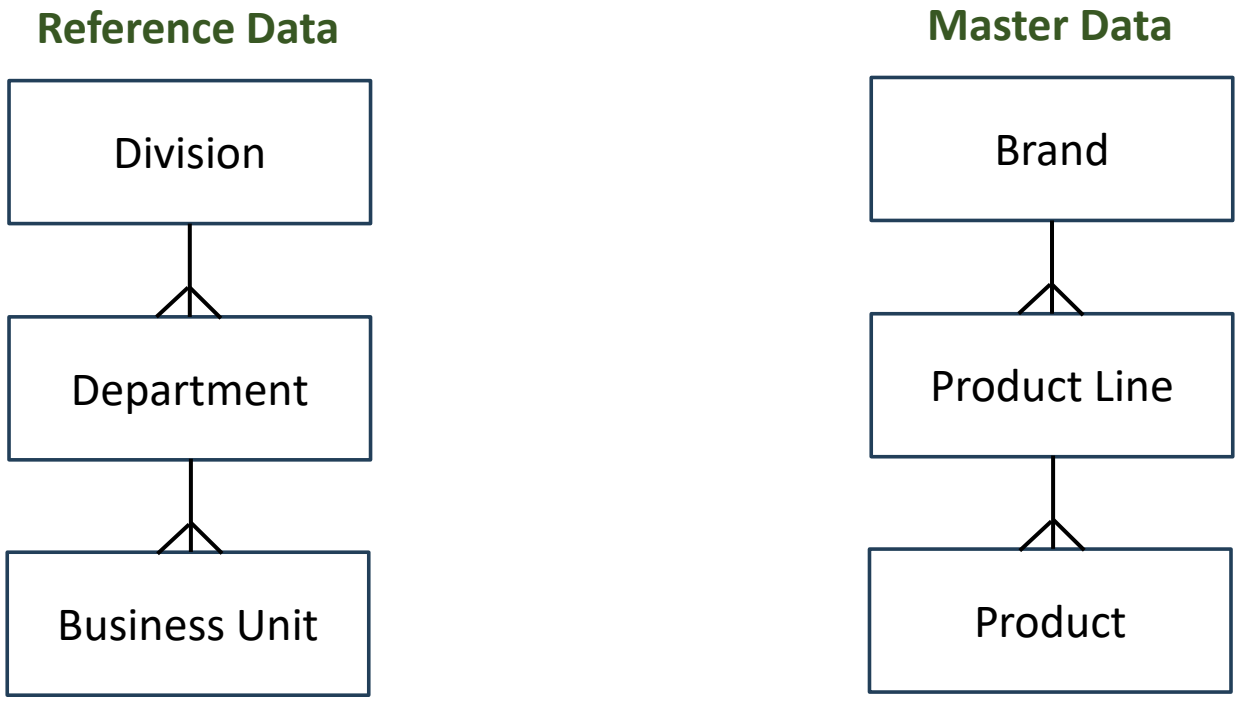
Customer

First Name
Family Name
Gender
Date of Birth
Email Address
City
Country
Etc.

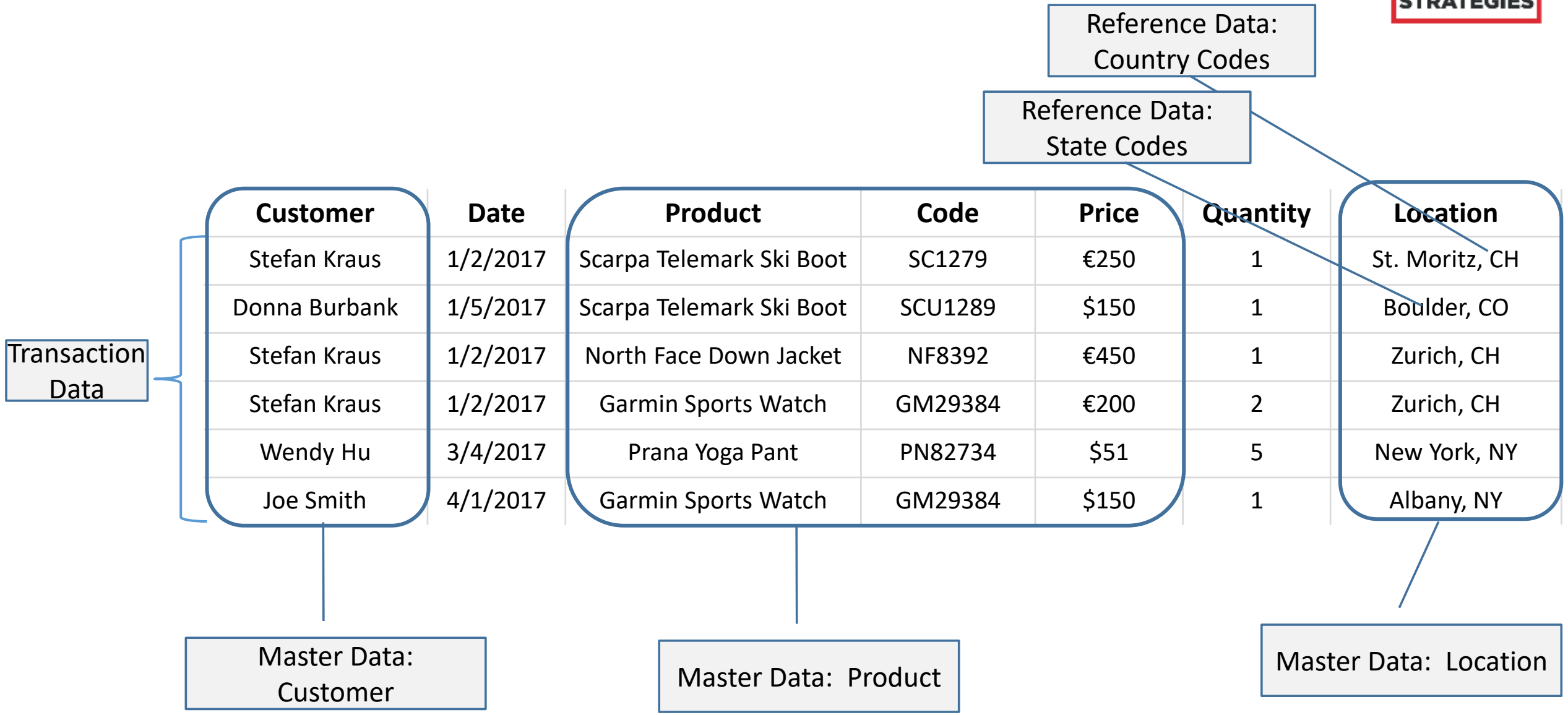
While there is a bit of art and science to identifying core attributes/CDEs for master data domains, they should be limited to the key information that is (1) critical to describing the domain (2) shared across systems (3) is not transactional data

Defining Hierarchies

Hierarchies and Relationships between Master and Reference Data objects are an important part of Master Data Design.



Transaction Data vs. Master Data



Customer	Date	Product	Code	Price	Quantity	Location
Stefan Kraus	1/2/2017	Scarpa Telemark Ski Boot	SC1279	€250	1	St. Moritz, CH
Donna Burbank	1/5/2017	Scarpa Telemark Ski Boot	SCU1289	$150	1	Boulder, CO
Stefan Kraus	1/2/2017	North Face Down Jacket	NF8392	€450	1	Zurich, CH
Stefan Kraus	1/2/2017	Garmin Sports Watch	GM29384	€200	2	Zurich, CH
Wendy Hu	3/4/2017	Prana Yoga Pant	PN82734	$51	5	New York, NY
Joe Smith	4/1/2017	Garmin Sports Watch	GM29384	$150	1	Albany, NY

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.?

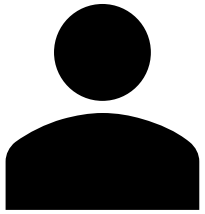
VS.

Reference Data

Address Line 1
Address Line 2
City
State

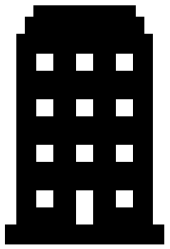
AL
AK
AR
AZ
CA
CO
..etc.

Can’t We Just Simplify Things?



Person

Customer, Employee, Supplier Contact, Patient, Provider, Citizen, etc.



Legal Entity / Party

Customer, Supplier, Partner, Subsidiary, etc.

Thing

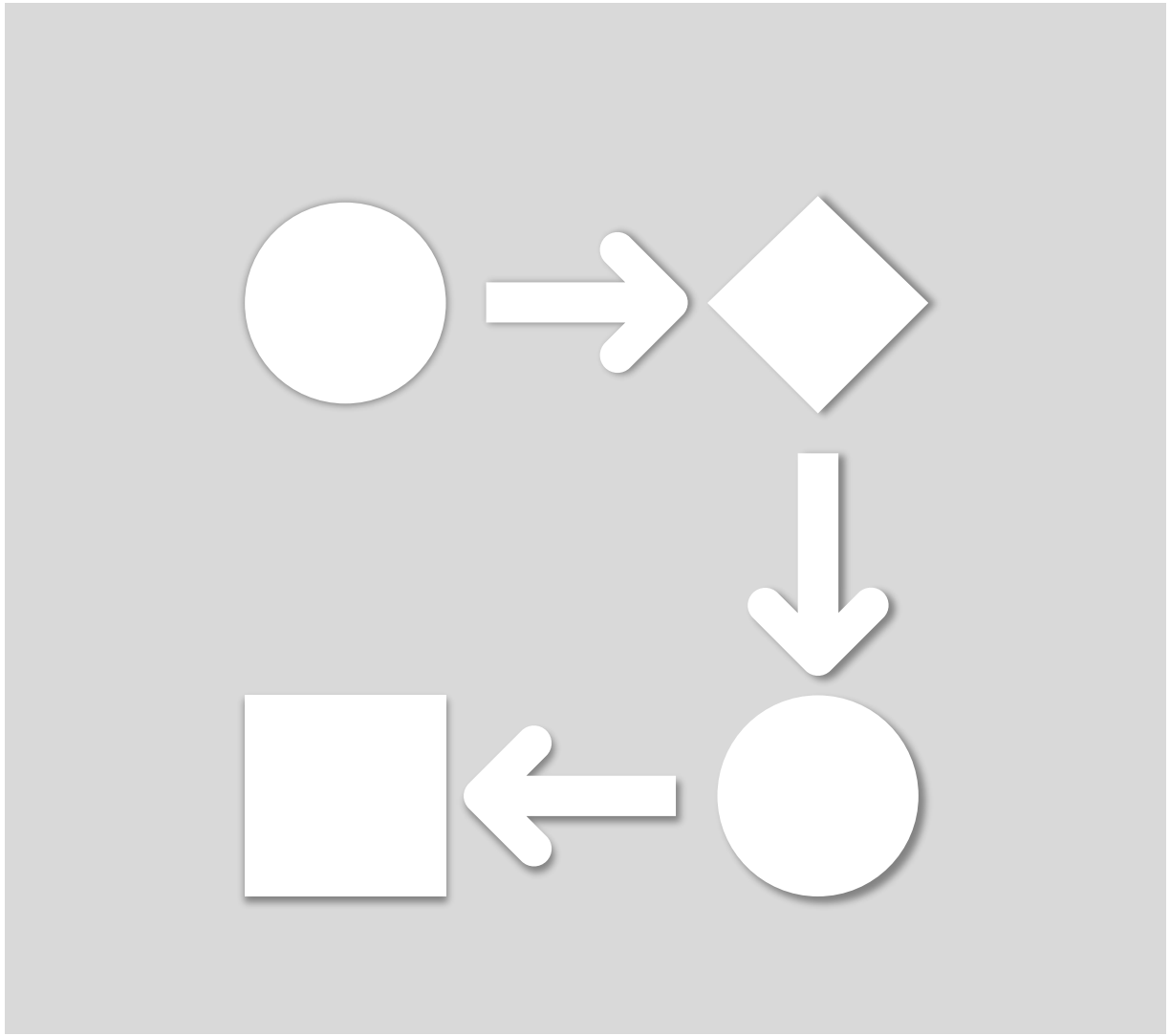
It’s all just a big table of stuff, isn’t it?

What Could Go Wrong?

What could go wrong in grouping **Customer** and **Employee** Master Data as the same?

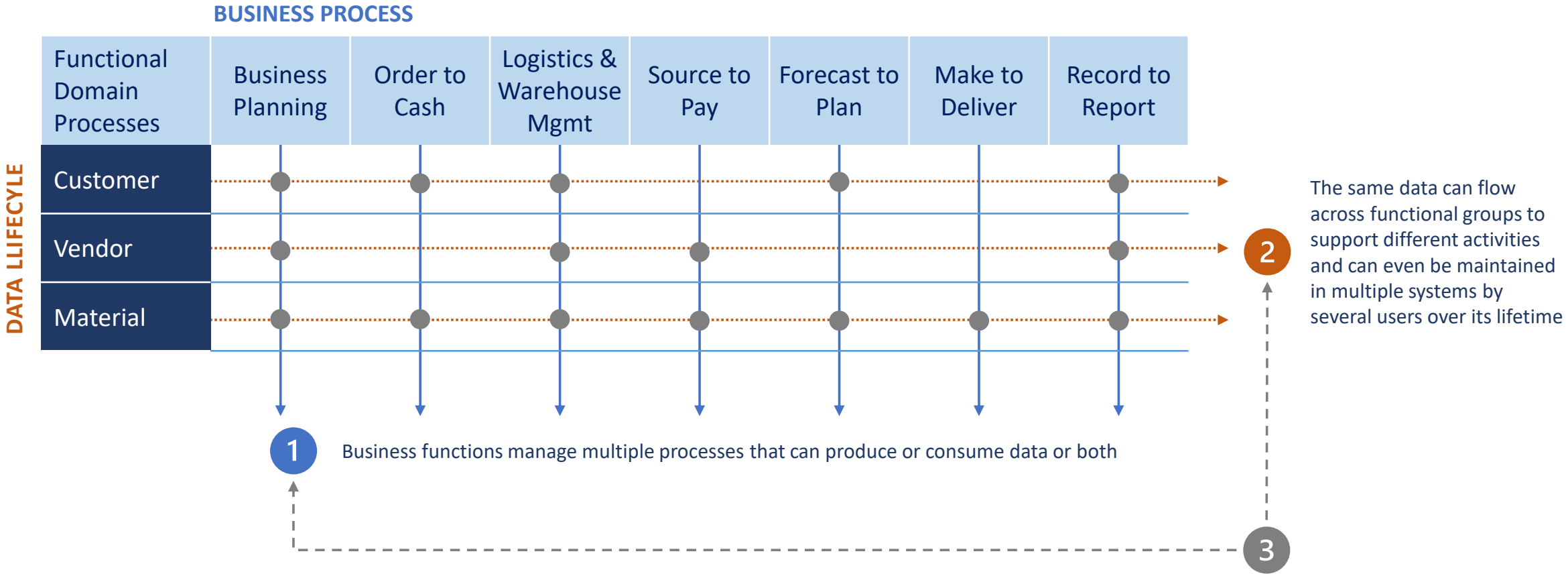
Or **Patient** and **Medical Provider**?

Or **Customer Org** and **Supplier Org**?



Business Process

Successful Data Governance Requires Alignment of Process & Data



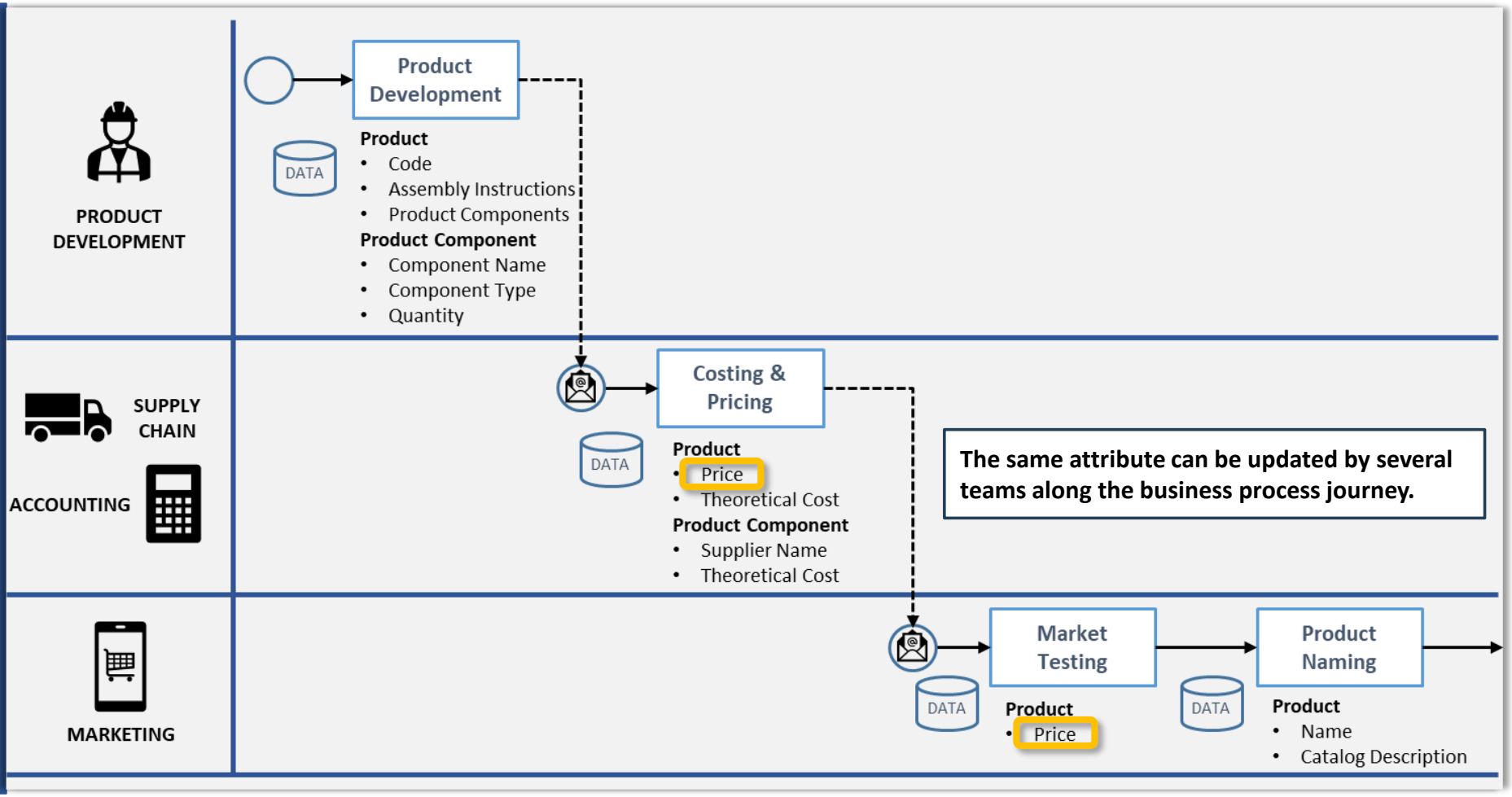
Each intersection of data and process is a governance requirement for data that is produced or consumed to align WHO – does WHAT – to WHAT - WHEN

● = indicates this process requires and/or contributes a subset of attributes for a given data domain

Business Process Model

Operational view of key data dependencies in core business processes

- Process models are a helpful tool for describing core business processes.
- "Swim lanes" outline organizational considerations
- Data can be mapped to key business processes to understand creation & usage of information.



CRUD Matrix – Showing Data Usage

Create, Read, Update, Delete

- CRUD Matrices shows where data is Created, Read, Updated or Deleted across the various areas of the organization.
- They can be created by department, by system/application, etc.
- This can be a helpful tool in data governance & data quality.

	Product Development	Supply Chain Accounting	Marketing	Logistics & Warehouse Mgt
Product SKU	**C**	**R**	**R**	**R**
Product Name	**C**		**U,D**	**R**
Product Price		**C**	**U**	**R**
Product Weight	**C**		**R**	
Etc.				

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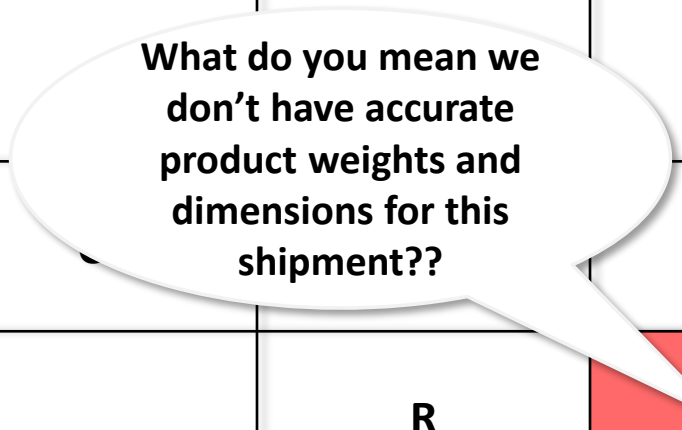
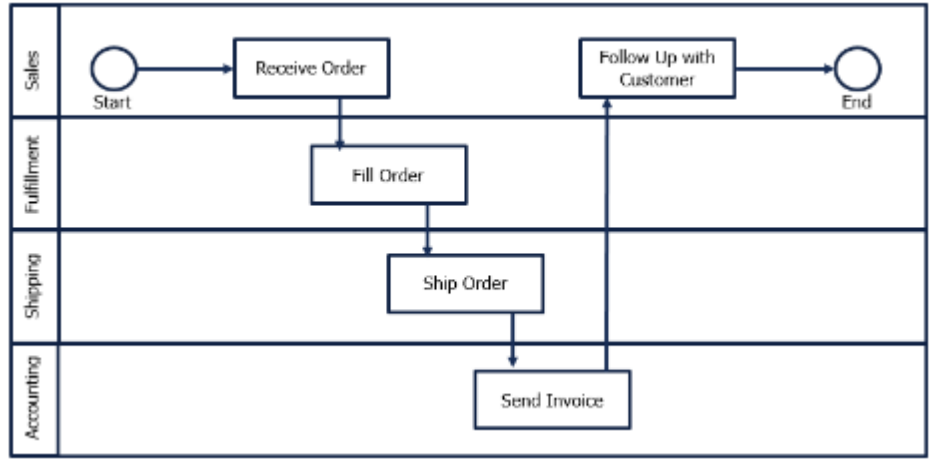


Process Models & CRUD Matrices Fit Well Together

- 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 Name	Order Number	Account Number	Invoice Number	Product Name
Receive Customer Order	C	C	C, R		R
Fill Order	R,U	R	R,U		R
Ship Order	R	R	R,U		R,U
Send Invoice	R,U	R	R,U	C	

Data Governance

Aligning Process with Data Governance & Stewardship

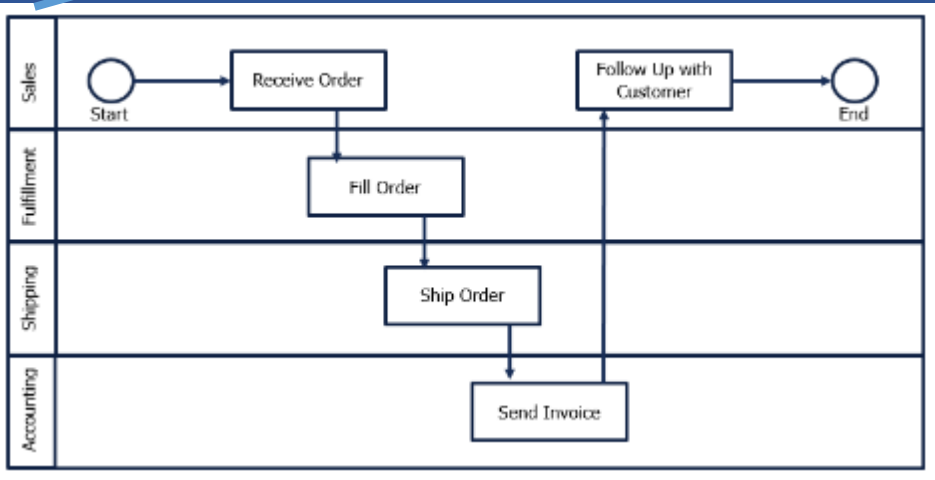
The Swimlane stakeholders typically become the **Data Stewards for the data they manage in their day-to-day business processes**.

Data Stewards

Accounting	Shipping	Fulfillment	Sales

1. **Accountable for the Data (C)reated , (U)pdated, and (D)eleted.**
2. **Has a voice/input for the Data being (R)ead.**

Business Process Model



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Fill Order	R,U	R	R,U		R
Ship Order	R	R	R,U		R,U
Send Invoice	R,U	R	R,U	C	

Sample Data Governance Roles

Business Data Owner

- Represents the data needs for a particular functional area
- Sets priorities for master data
- Approves critical data element and business rules

Business Data Steward

- Responsible for the day-to-day management and quality of data
- Defines critical data elements
- Aligns with the Data Owner to support business rules

Technical Data Steward

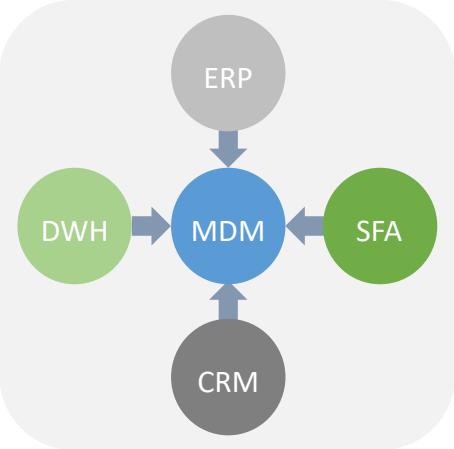
- Subject matter expert for a given system and its usage (e.g. CRM, ERP, etc.)
- Aligns with Business Data Stewards to ensure technical needs are met

Putting It All Together - Implementation

MDM Implementation Styles

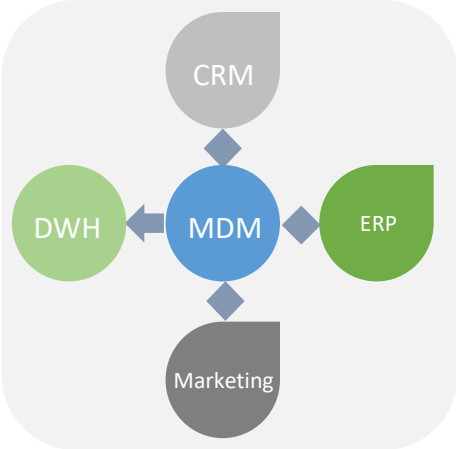
- Organizing for MDM: Defining the Implementation Style

Registry



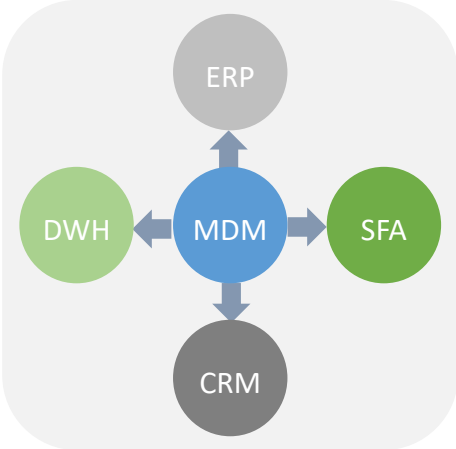
- Provides cross-reference index of source systems IDs
- No physical data consolidation and is often read-only access
- Authoring remains distributed

Coexistence



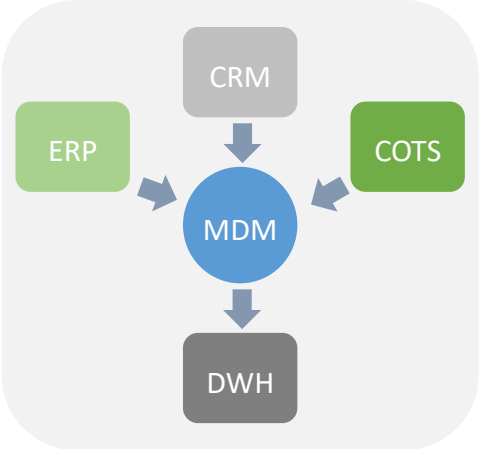
- Consumes source data, de-duplicates, enriches and consolidates view of master data
- Stewardship workflows for data governance and approval orchestration
- Harmonization back to authoring systems

Centralized



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

Consolidation

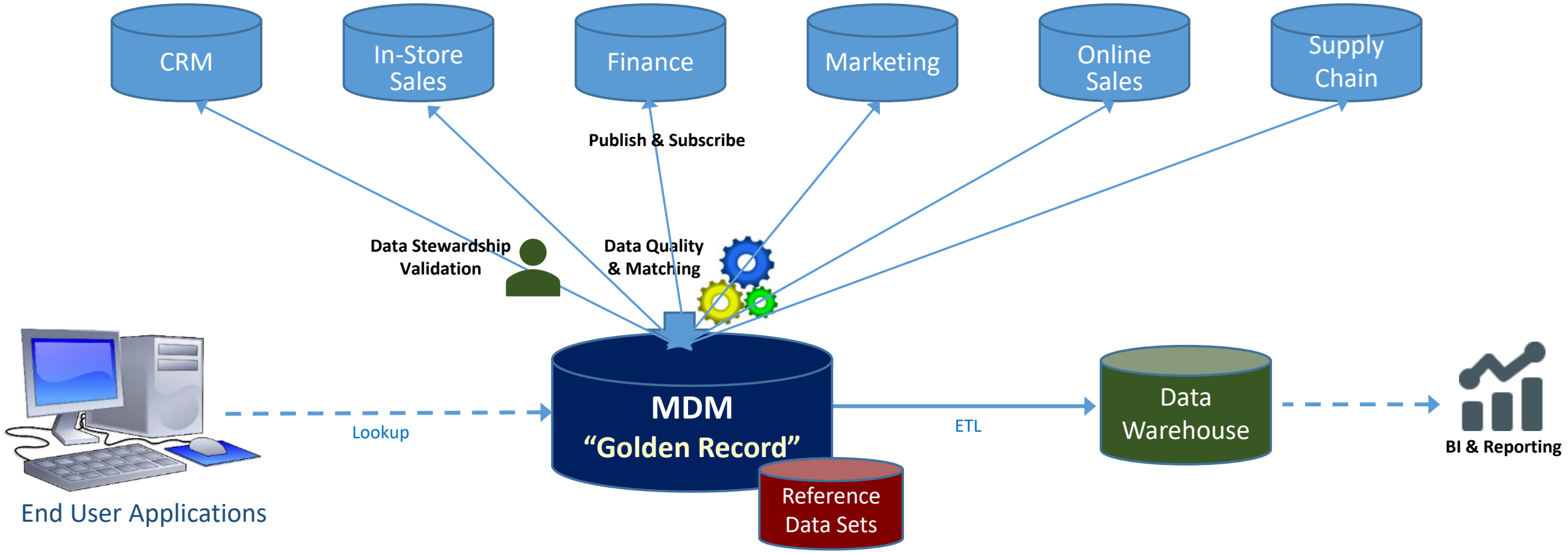


- Matches and physically stores a consolidated view of master data post transactional events
- Used for reference versus supporting transactional activity
- Authoring remains distributed

Operational Focus

Analytical Focus

Master Data Implementation Overview



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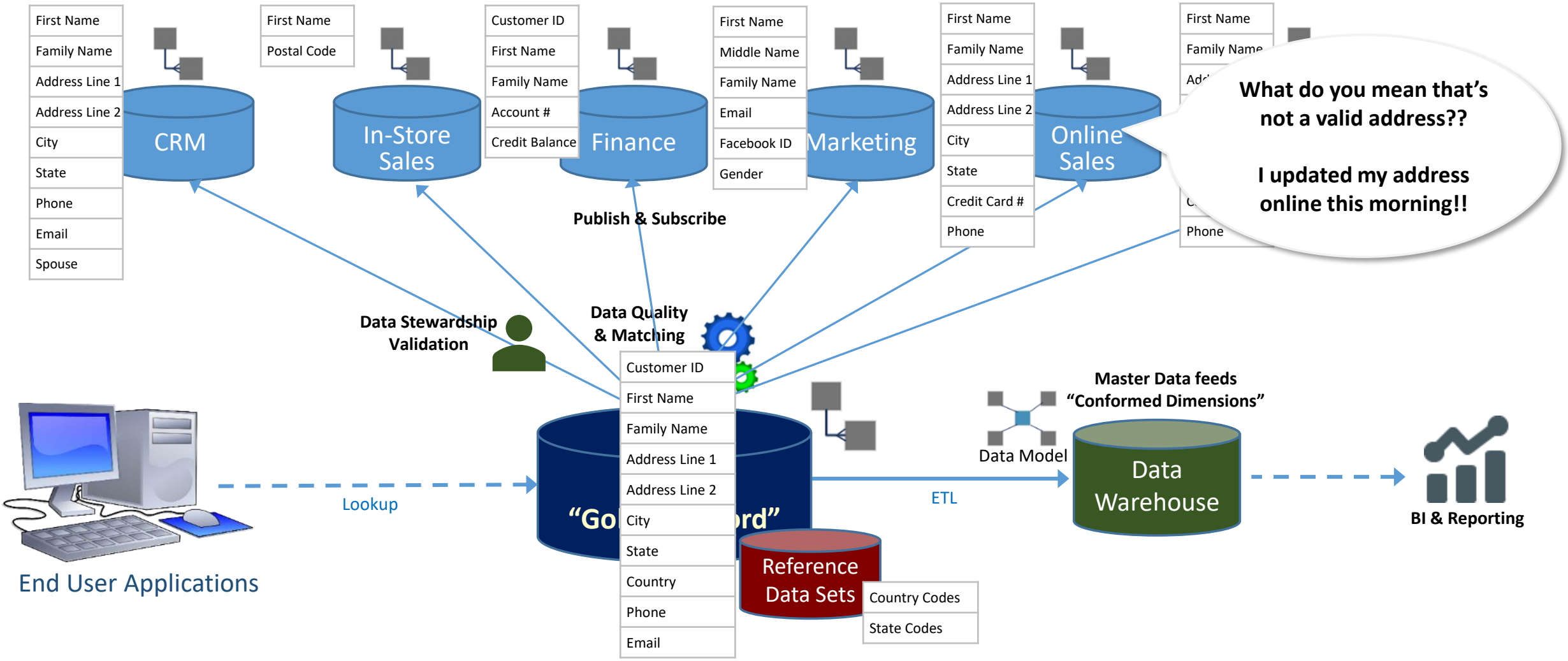

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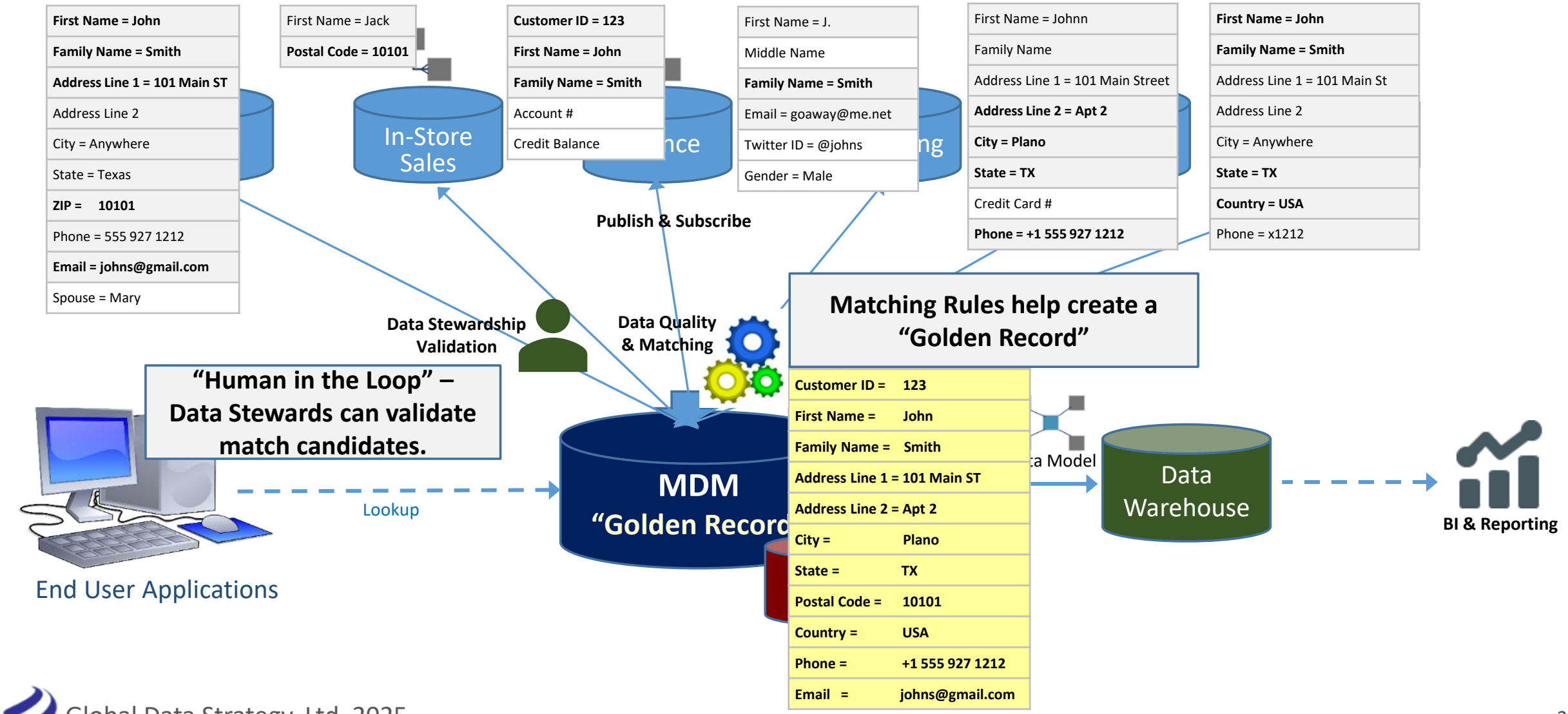

Optimizing Restaurant Revenue through Menu Data

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

Summary

- 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, Patient, Employee, Student, 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.

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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**
- 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 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?