TECHNOLOGICAL RESEARCH CLUB · SINCE 1988

Data & AI Summit 2026

The virtuous cycle between data and artificial intelligence: better data produces better AI, and better AI produces better data management.

DATE Thursday, July 23, 2026 · 2:00 – 7:00 pm

HEADQUARTERS Tournon Building Auditorium, Central Bank · San Jose How to get there ↗

The New Data-AI Contract… Why Data Matters

EDM Association

Trusted Data and Governed Foundations for Enterprise-Ready AI

John Bottega, President

John Bottega
President, EDM Council

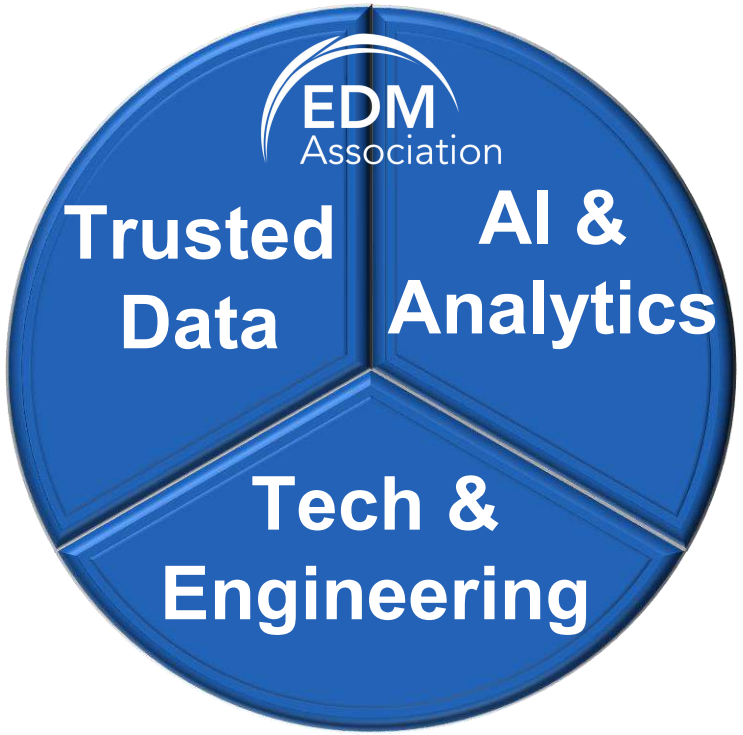
Former:

- Chief Data Officer: Citibank, Bank of America, Federal Reserve Bank of New York
- Chief Data Officer: US Department of the Treasury – Office of Financial Research
- Financial Research Advisory Committee Member – US Treasury
- Chairman, Board of Directors – EDM Council (2007-2015)

Currently Held:

- International Chamber of Commerce – Data Standards Initiative Advisory Board
- Financial Data Transparency Act (FDTA) Task Force
- Open Data Standards Task Force

World of Digital Transformation

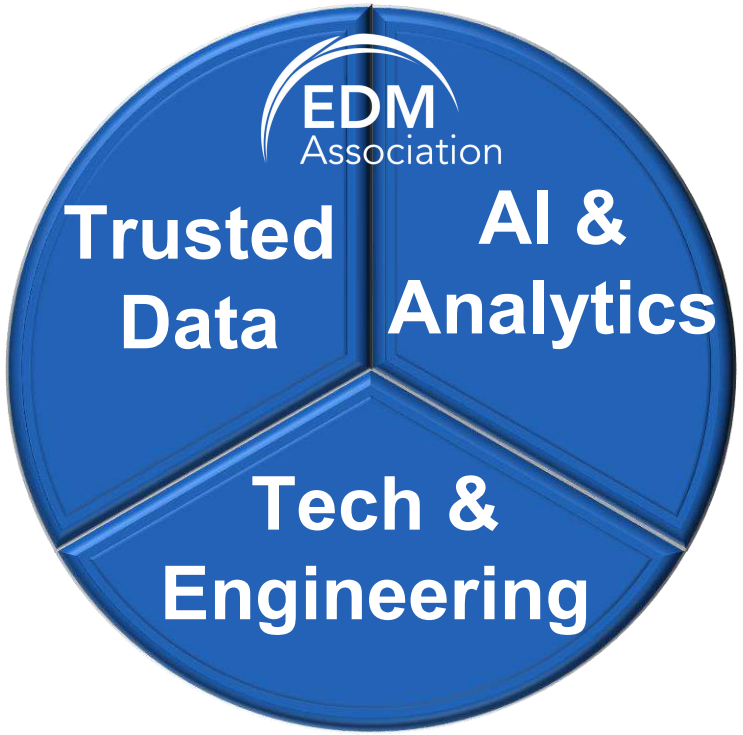


EDM Association is an international trade association connecting the data, software, systems, and standards disciplines to accelerate industry innovation and our members' business success.

July 2025

Object Management Group®

World of Digital Transformation



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July 2025

OMG Object Management Group

The NEW EDM Association

Who we are

A transformational, first-of-its-kind trade association that connects and bring voice to the **data, software, systems, standards** and **knowledge engineering** communities.

An organization positioned to deliver a **unique combination** of **community, innovation, best practices and standards development** that will stand alone in the marketplace.

To be the "Go-To Organization"

To build trust and confidence in your data, technology and engineering programs…

To Help Organizations Power their AI and Digital Transformation


STRONG DATA. SMARTER FUTURE.
SECURITY
Protect
Monitor
Respond
Consistent
Trusted
Standards
Accountability
QUALITY
Accurate
Complete
Valid
ACCESS
Available
Usable
Authorized
AI
AI
ANALYZE
LEARN
GENERATE
INSIGHT
DRIVE IMPACT
Why Data Matters
New Data-AI Contract
DATA MANAGEMENT
Data Quality
Governance
Security
Integrity
Accessibility

New Data-AI Contract
Why Data Matters

Why data (and data management) matter

What does good data management look like

Who should champion your data program

Why is data (and data management) so important in today's modern organizations?

Data as Strategic Asset

Data serves as a foundation for strategic decision-making and competitive differentiation across industries.

Driving Innovation

Data supports innovation by enabling development of new products, personalized services, and business models.

Risk Mitigation

Organizations use data to detect anomalies, forecast challenges, and ensure regulatory compliance effectively.

Enhancing Customer Experience

Analyzing consumer behavior and feedback helps companies refine offerings and build customer loyalty.

Data Management as Strategic Function

Data serves as a foundation for strategic decision-making and competitive differentiation across industries.

- Ensures data accuracy, consistency, and reliability
- Improves operational efficiency and reduces costs
- Enables effective governance and compliance
- Supports analytics, insights, and decision-making
- Protects data through lifecycle and risk management


Informs
Competition
Early warning
Create Efficiencies
Responsible Data Management
Discover Insights
Predictability
Provides Transparency
Drives Medical Breakthroughs
Uncovers Opportunities


Mis-Inform
Economic Impact
Cyber Crime
Stifle Innovation
Reputational Risk
Mismanaged Data
Create Unethical Outcomes
Cause Personal Harm
Lead to Incorrect Decisions
Impact Individual Privacy

Why Data (and Data Management) Matter:

The 2008 Financial Crisis

The Global Financial Crisis of 2007–2008

The Global Financial Crisis of 2007–2008

01

Historic market turmoil

Unprecedented number of mergers, acquisitions, divestitures and bankruptcies putting immense pressure on the need for timely and accurate data about entities.

02

Inability to Unwinding Complex Investment Vehicles

Layers of abstracted data made it impossible to assess the health of the underlying assets of the instruments.

03

Inability to Property Value the assets

Growing calls for greater public transparency in asset pricing and pricing methodologies.

Data collection and analysis put immense pressure on an already weak information infrastructure

The 2 ‘data straws’ that broke the back…

Mortgage Market

Collateralization Process

Mortgages —SOLD→ Banks —COMBINED→ Pools

Pools —COLLATERALIZED→ Structured Products —SLICED→ Tranches

There Were Data Issues Along the Supply Chain

- Bits and pieces of descriptive data were not carried through each step of the process
- Linkages to the underlying loans were broken or obscured
- There was no standard way to identify and define the structure of the collateralized mortgage instruments

If you can’t define the instruments, you can’t measure them.

And, if you can’t measure them, you can’t manage them.

The 2 ‘data straws’ that broke the back of data…

First Question: What is our exposure to a Lehman collapse?

Problem: Who was Lehman?

- Lehman was 100’s of Lehman entities
- Inability to uniquely identify the Lehman’s entities
- Unable to understand the complex relationships of parent to sub, entity to sub-entity
- Didn’t understand the systemic impact on other players in the economic ecosystem

A Unique Entity Identification and Legal Hierarchy did not exist

- There was no standard way to identify Lehman, and her entities cross the industry
- No standard way to identify Lehman legal entity dependencies
- No way to fully understand and predict the systemic impact of Lehman collapse across the industry

The Financial Crisis thru the lens of Data

Our Data was broken!

Quality of the data was poor

- Lacked accuracy, completeness, timeliness
  - Critical components (lineage; linkages; hierarchies) were missing
  - Process to collect and normalize data (Data Supply Chain) malfunctioned
- No adhere to data management best practices
- No adhere to standards (disparate; inconsistent; siloed)

More was NOT better

- We had data, but it was not comparable
- Difficult to aggregate
- Definitions were inconsistent due to a lack of information standards

Data was not collected and not structured in a way that would enable decision-makers to effectively utilize this data to be alerted to and/or respond to the crisis

Why Data (and Data Management) Matter:

Your AI & Machine Learning Initiatives

Is your data AI Ready???

1. Data Must be Trusted!

Teach your models well!

Feed them accurate, timely and complete information, you will create powerful and trusted models

Teach them poorly

Your results will be less than trustworthy

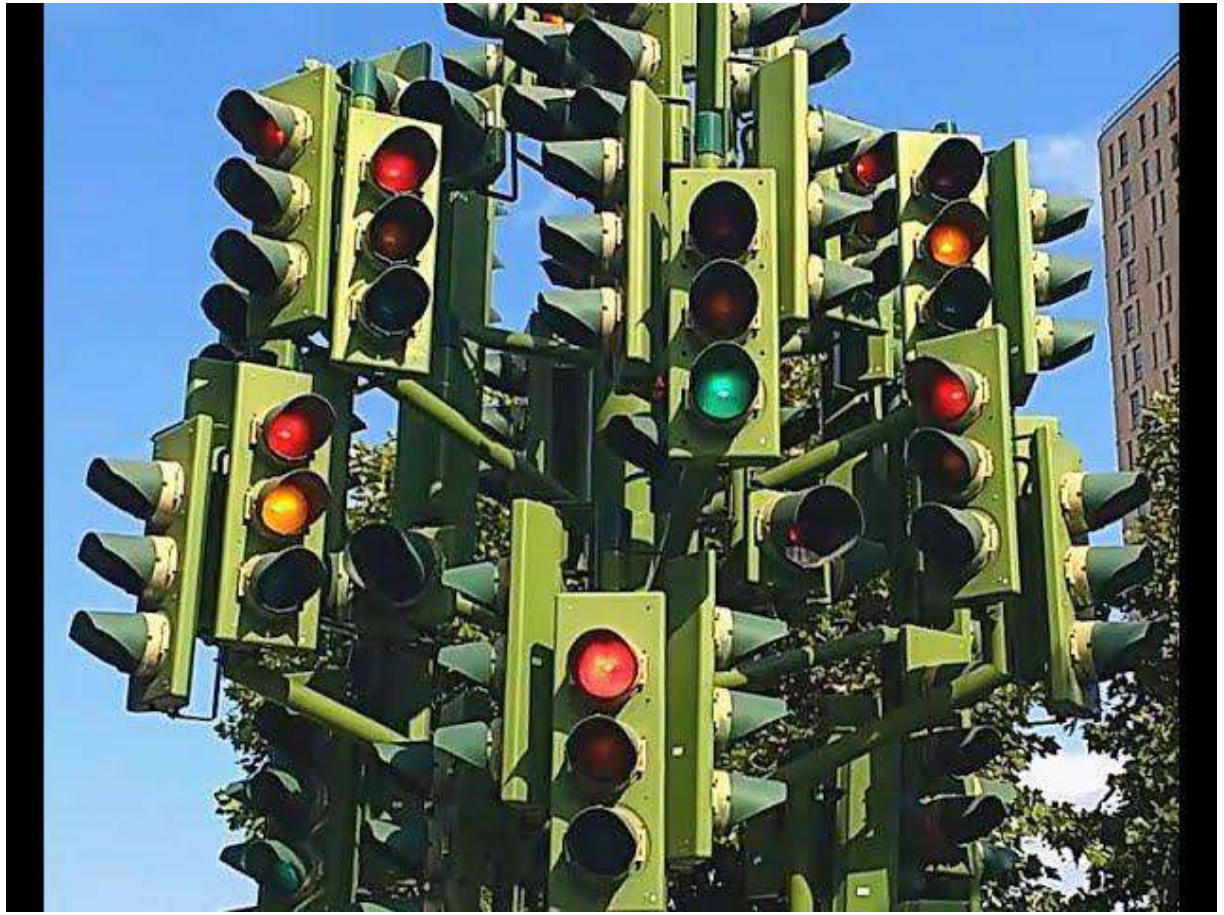
Therefore…

- Data must come from authoritative sources with clear ownership
- Sources must be vetted and validated
- Sources must follow data management best practices, be assured and auditable

2. Data must be engineered for success

Input:

Data should be accurately modeled, following established information standards that include clear semantic definitions and recognizable relationships.



Risk:

Unreliable Results

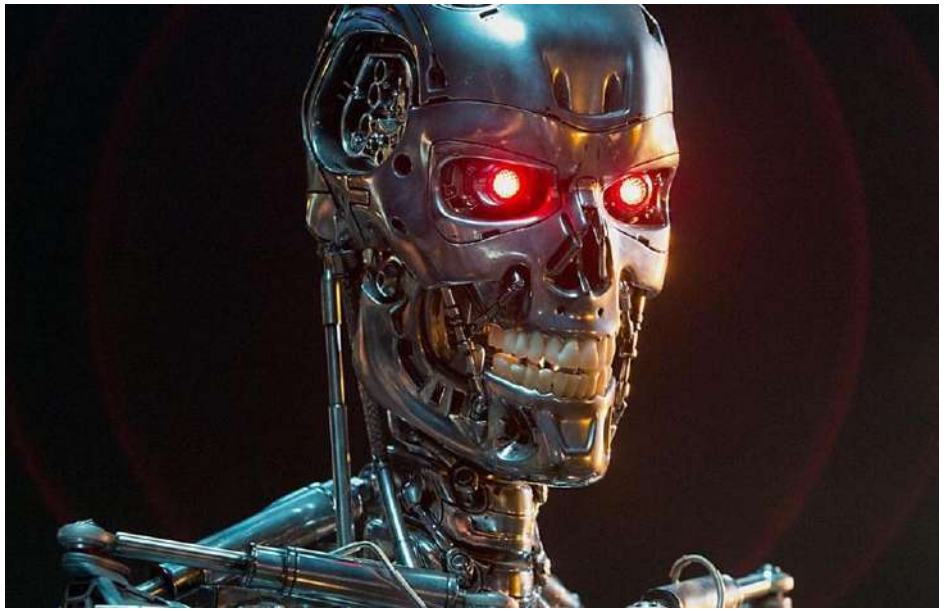
- Outcomes that are illogical
- They may lack focus
- They can provide false guidance
- They cannot be substantiated
- Might not meet the intended goals and fail to fulfill the business needs

3. Data must adhere to ethical guidelines

Input:

When selecting data, it is essential to be aware of ethical considerations, including sourcing, privacy, and usage, to prevent bias and potential prejudices in content.

Risk: Unethical Outcomes



How to avoid:

- Establish clear and precise ethical standards.
- Steer clear of uncontrolled learning or learning from unofficial sources.
- Maintain transparency throughout the process.
- Conduct regular audits of your models and the data that supports them.
- Don’t leave out the human! Remember to include human oversight in the process.

4. Scope of data must be understood and complete

Requirement:

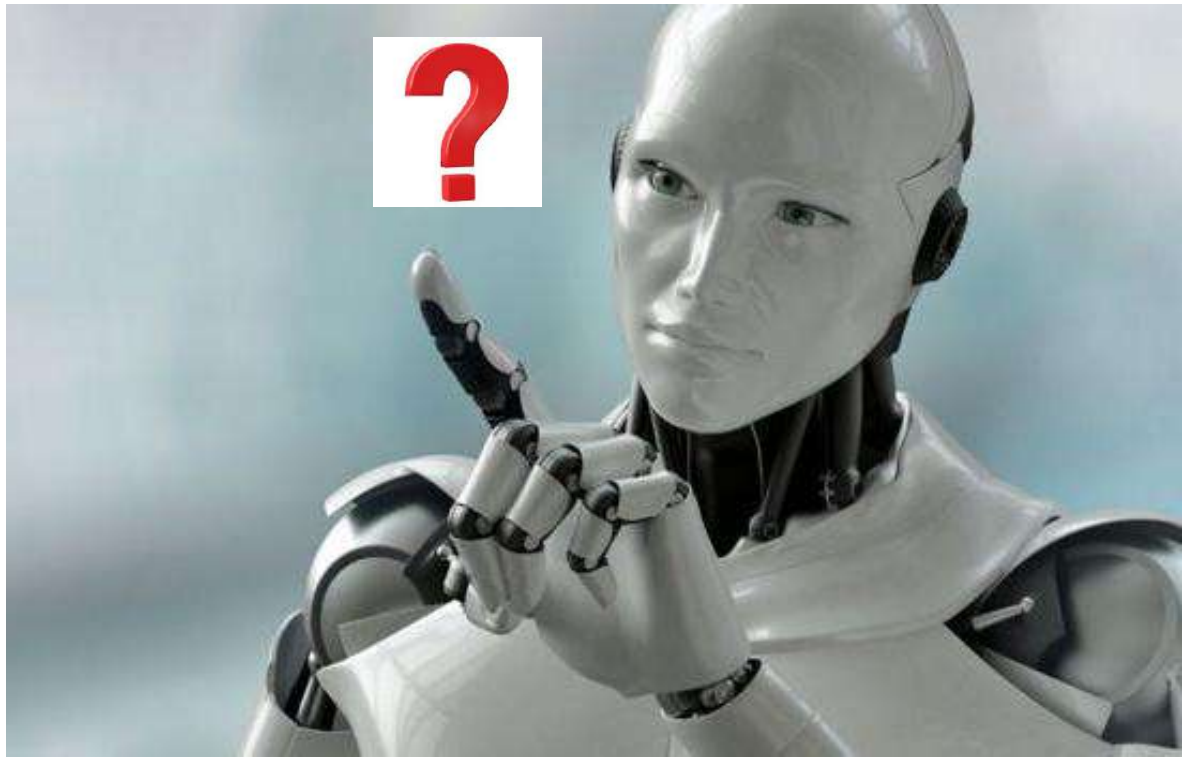
Build the model to tell me about the conditions of the sky

Input:

1000's of pictures of the sky, but they are all pictures of sunsets.

Query: **What is the color of the sky?**

Answer: **The sky is red**



Failure to include critical pieces of data, for example, time of day; location; atmospheric conditions; resulted in inaccurate results

Without good data, we can't make good decisions!

Why Data (and Data Management) Matter:

Not just any data…
But “Well Engineered” Data

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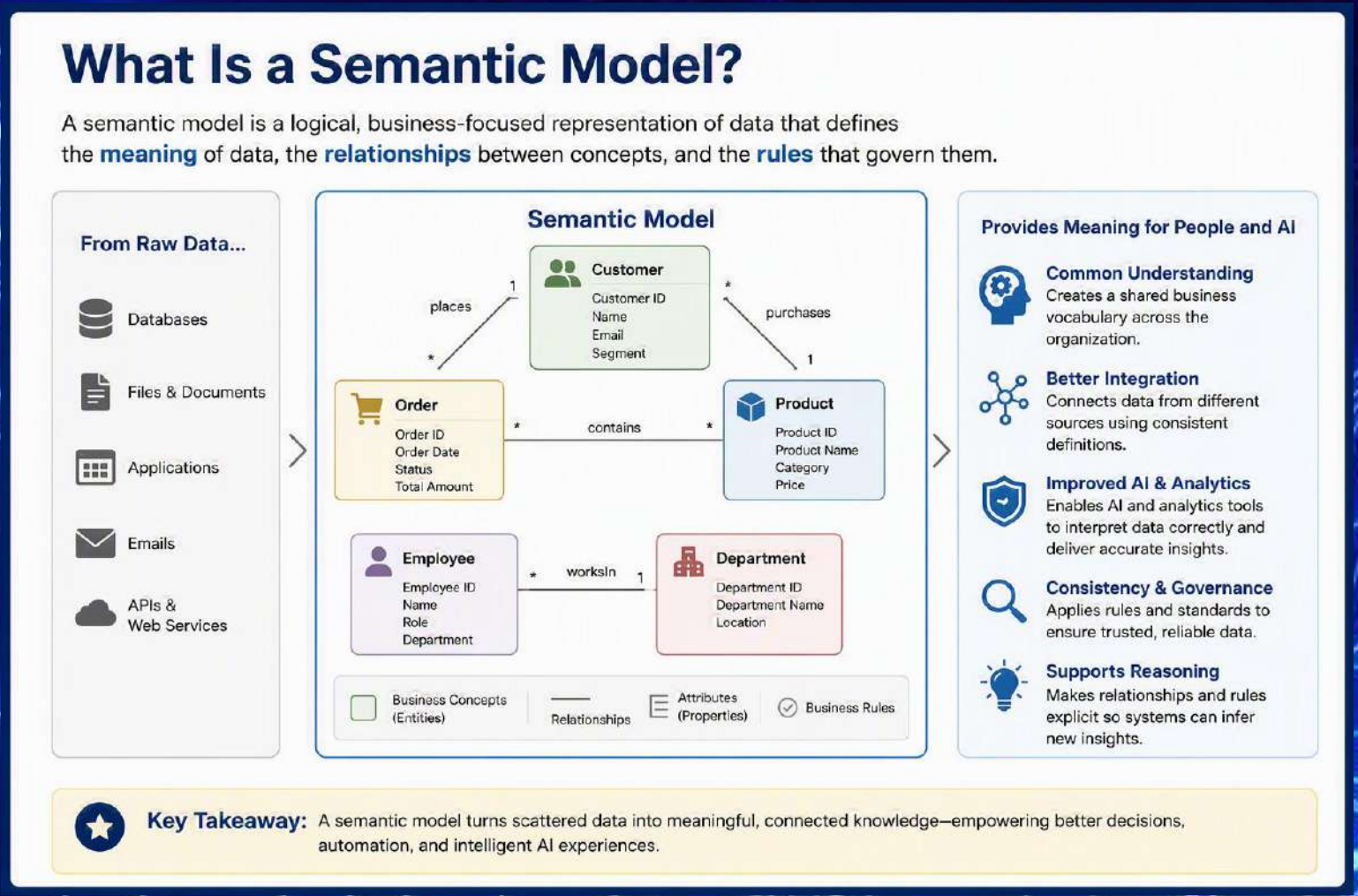
What does it mean to have “well engineered” data, especially when considering you’re AI agenda?

When people talk about **"well-engineered data" for AI**, they mean data that has been intentionally designed, organized, governed, and maintained so that AI systems can reliably learn from it and generate trustworthy outputs.

A simple way to think about it: **Bad AI is often a data problem, not a model problem.**



A semantic model (ontology) is a rich description of a real-life domain:

- **Business Focused –** Organizes data using familiar concepts (e.g., Customer, Product, Order, Supplier) rather than technical database structures.
- **Defines common meaning** – Establishes standardized definitions and relationships so everyone—and every AI application—interprets data consistently.
- **Connects related data** – Maps how entities relate to each other (e.g., Customers purchase Products, Products belong to Categories, Assets are in Regions).
- **Provides context and metadata** – Enriches data with business definitions, hierarchies, rules, ownership, and lineage to make it easier to understand and trust.
- **Enables AI-ready insights** – Creates a unified, discoverable view of enterprise data that helps AI and analytics tools reason across domains and deliver more accurate, relevant results.

Knowledge Graphs: The Game-Changer in AI and Data Science

Kajal Kumari
11 Aug 23 • 10 min read

https://www.analyticsvidhya.com/blog/2024/08/knowledge-graphs-in-ai-and-data-science/

The Future of AI in Business: Unifying Knowledge Graphs and Large Language Models?

https://www.linkedin.com/pulse/future-ai-business-unifying-knowledge-graphs-large-language-wendin-fof3f/

Knowledge Graphs For eXplainable AI

On the Integration of Semantic Technologies and Symbolic Systems into Deep Learning Models for a More Comprehensible Artificial Intelligence

Giuseppe Futia · Follow
Published in Towards Data Science · 8 min read · Mar 2, 2020

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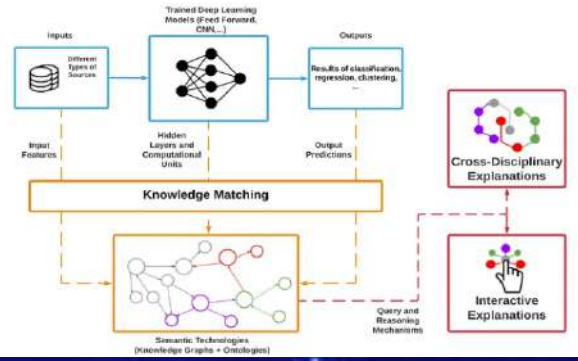


https://towardsdatascience.com/knowledge-graphs-for-explainable-ai-dcd73c5c016

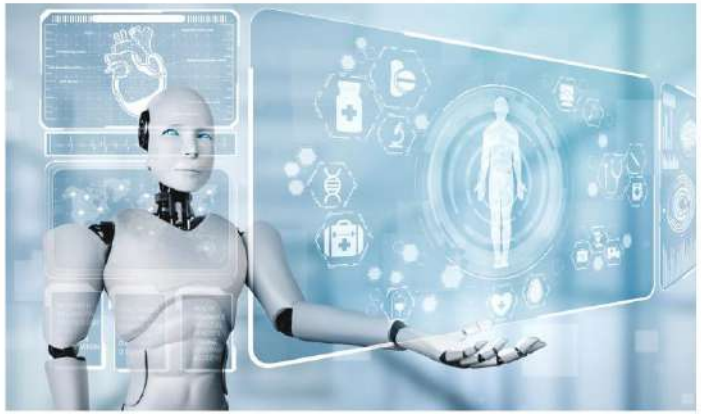
Knowledge Graphs And Machine Learning — The Future Of AI Analytics?

The unprecedented explosion in the amount of information we are generating and collecting, thanks to the arrival of the internet and the always-online society, powers all the incredible advances we see today in the field of artificial intelligence (AI) and Big Data.

https://bernardmarr.com/knowledge-graphs-and-machine-learning-the-future-of-ai-analytics/

Leveraging the Power of Knowledge Graphs: Enhancing Large Language Models with Structured Knowledge

by Haziqa Sajid | Aug 21, 2023 | blog, Learning Resources



https://www.wisecube.ai/blog/leveraging-the-power-of-knowledge-graphs-enhancing-large-language-models-with-structured-knowledge/

A Benchmark to Understand the Role of Knowledge Graphs on Large Language Model's Accuracy for Question Answering on Enterprise SQL Databases

Technical Report

Juan F. Sequeda
data.world
juan@data.world

Dean Allemang
data.world
dean.allemang@data.world

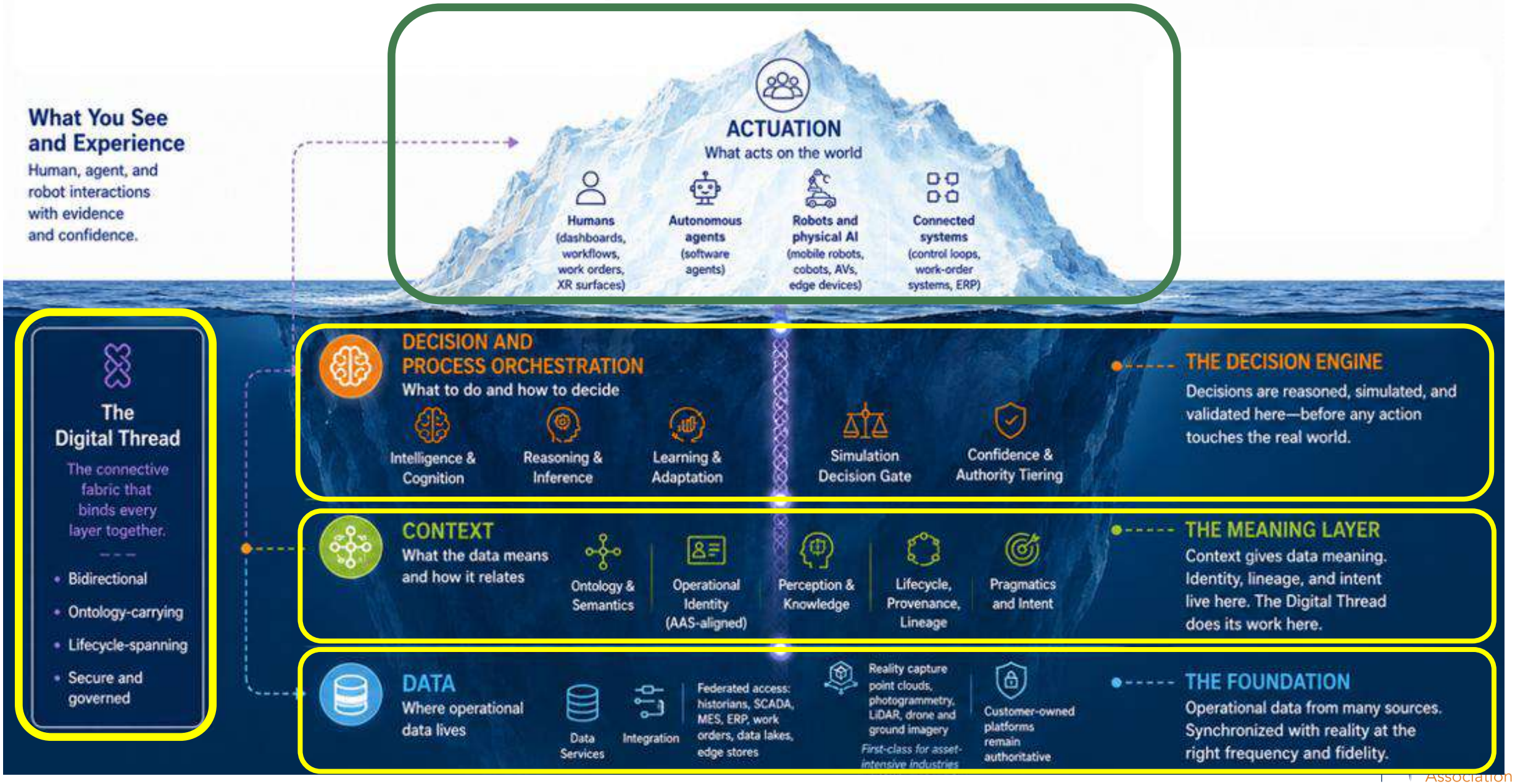
Bryon Jacob
data.world
bryon@data.world

November 14, 2023

Research by **Dean Allemang**, **Juan Sequeda**, and **Bryon Jacob** at **data.world** demonstrated that grounding LLMs with a semantic knowledge graph can improve question-answering performance by roughly 3x times compared to approaches relying solely on relational data, **highlighting the value of ontologies and semantic relationships for AI accuracy and trustworthiness.**

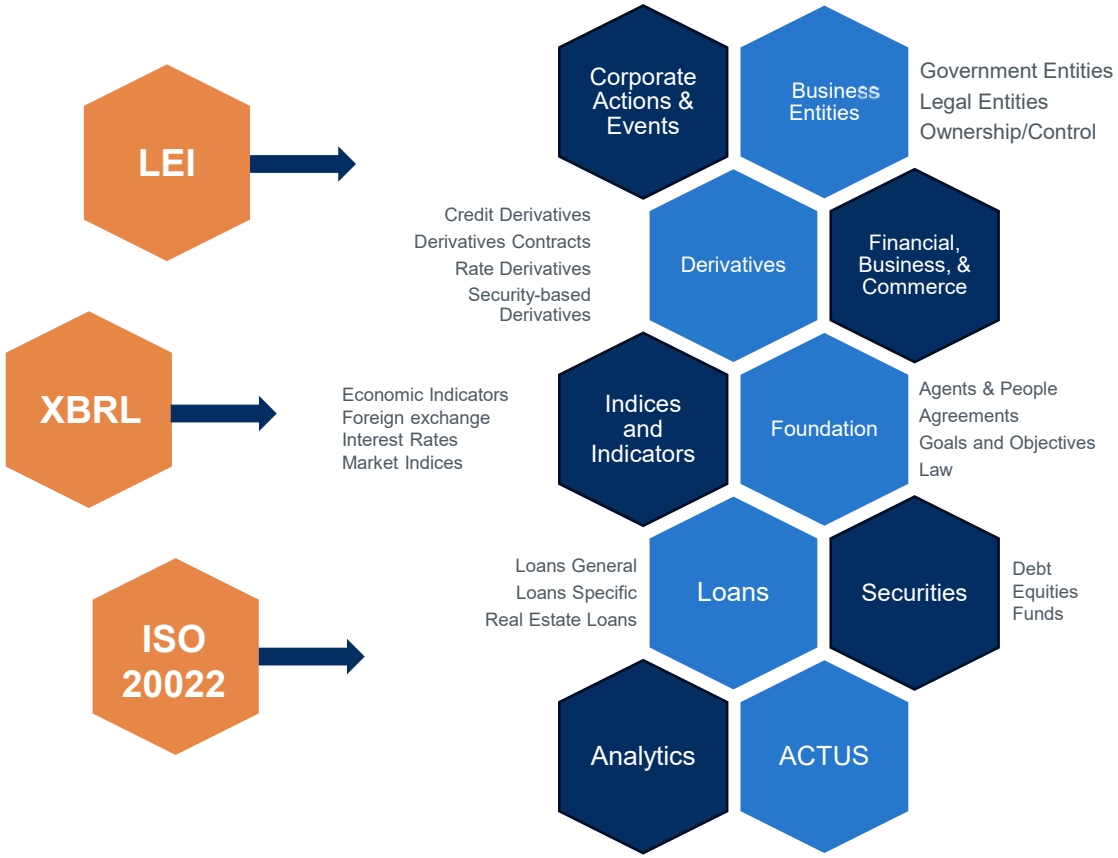
https://arxiv.org/pdf/2311.07509

Importance of Data to AI



Financial Industry Business Ontology

FIBO is organized into modular domains with thousands of terms covering all major areas of finance.



FIBO Domains

And Selected Subdomains

Bank of England

FDIC
FEDERAL DEPOSIT INSURANCE CORPORATION

New Data-AI Contract
Why Data Matters

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What does good data management look like

Who should champion your data program

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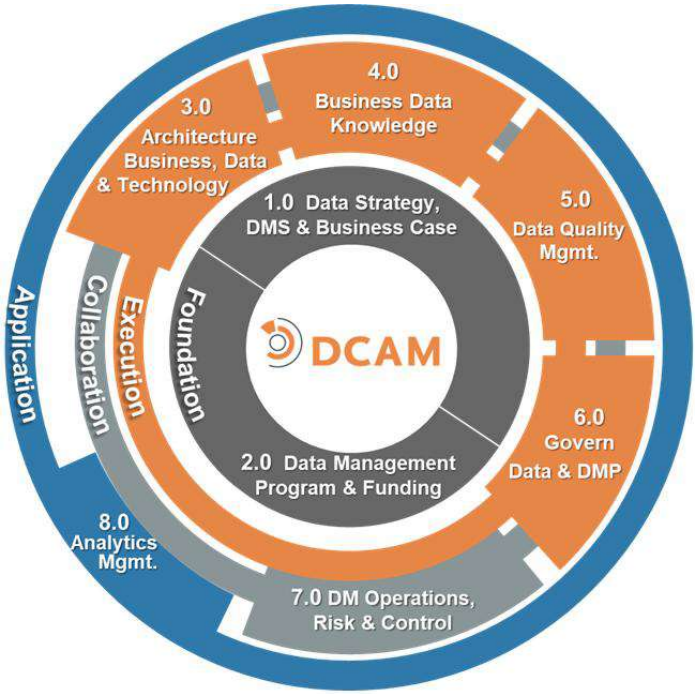
Data Management Capability Assessment Model

What "good data management" looks like!

DCAM is structured to define and measure ***capability*** – the definition of precisely what is required to develop, implement and sustain a data management program



Based on Collective Industry Experience

- **Collaborative development:** Synthesis of research and analysis among practitioners since formation of EDM Association (case studies, regulatory pressure, collaborative research)
- **Integration of key data management disciplines**
  - Data Management Strategy
  - Program Design
  - Organizational Change
  - Dedicated Funding
  - Data Engineering
  - Technology Architecture
  - Governance
  - Collaboration
- **Driven to be practical:** Aligns with organizational mandate; understandable by non-specialists, based on collaboration, structured for continual improvement

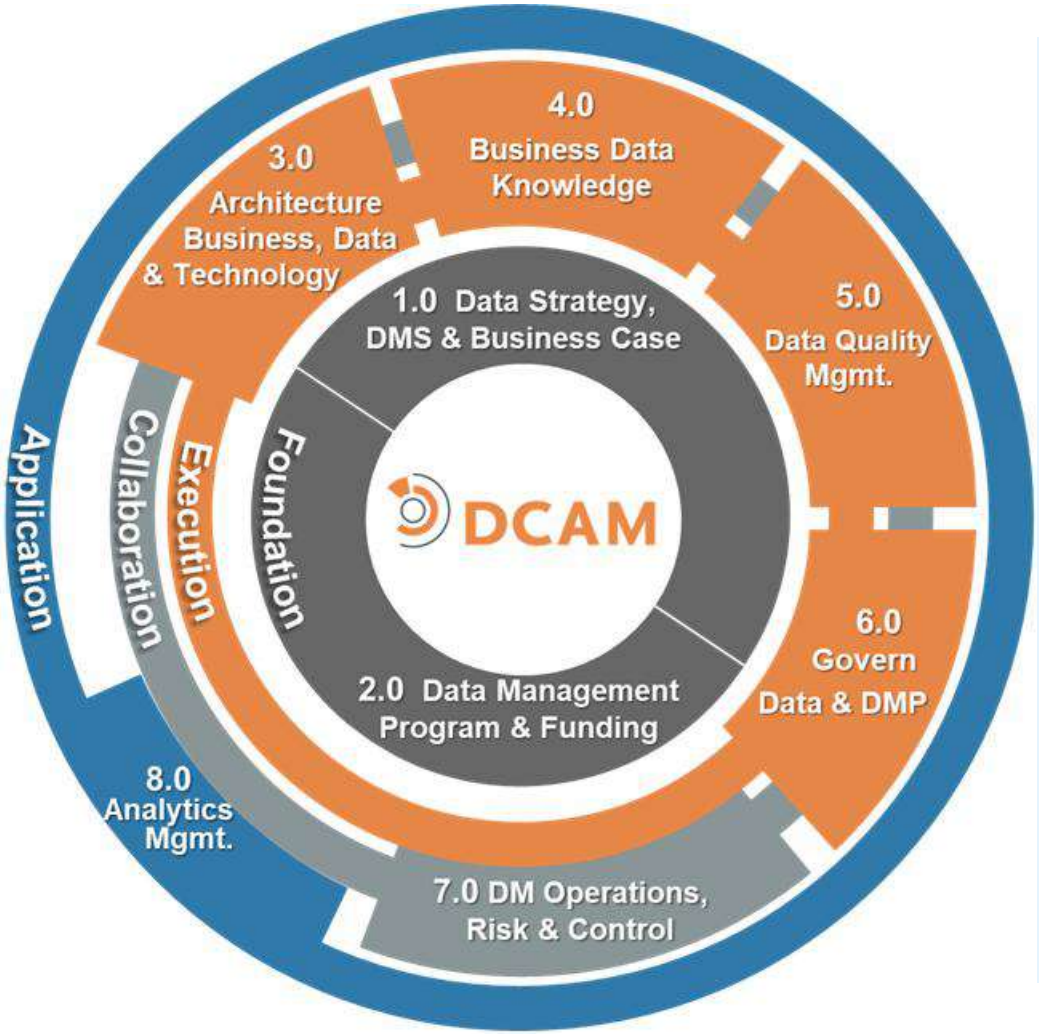
DCAM DISC

1 Foundational Components

Define your strategy and vision. Build your team and put the roadmaps in place.

3 Collaboration Component

Ensure diverse teams work together to manage, protect and leverage data across the organisation.



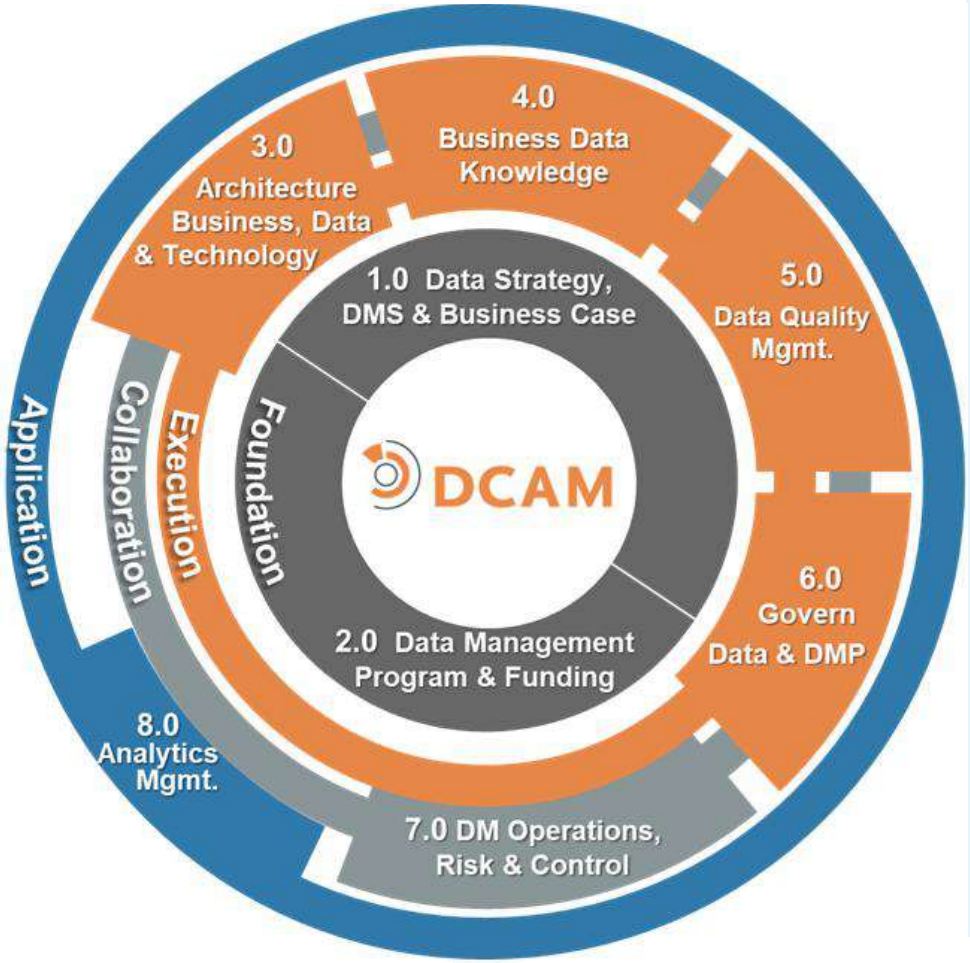
2 Execution Components

Capabilities to execute on and deliver your data strategy. These components are the work engine of your data management program.

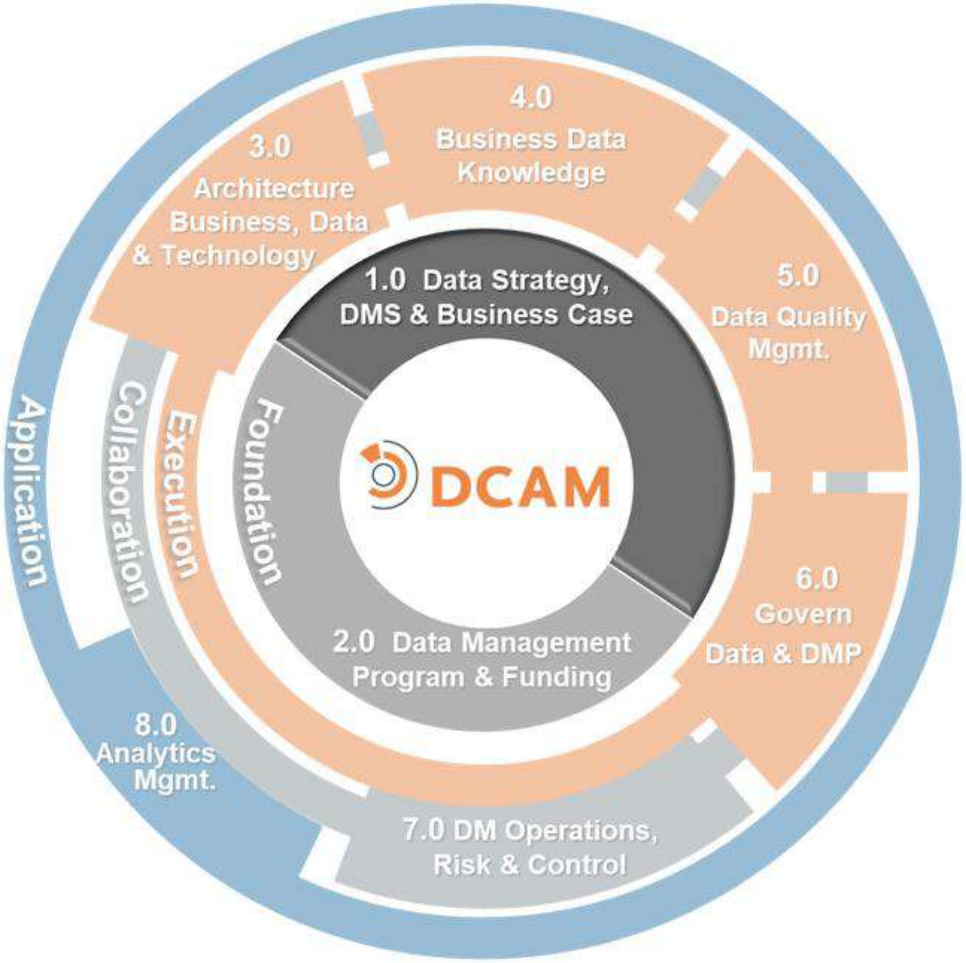
4 Analytics Component

Capabilities to build innovative and robust advanced analytics teams.

DCAM DISC



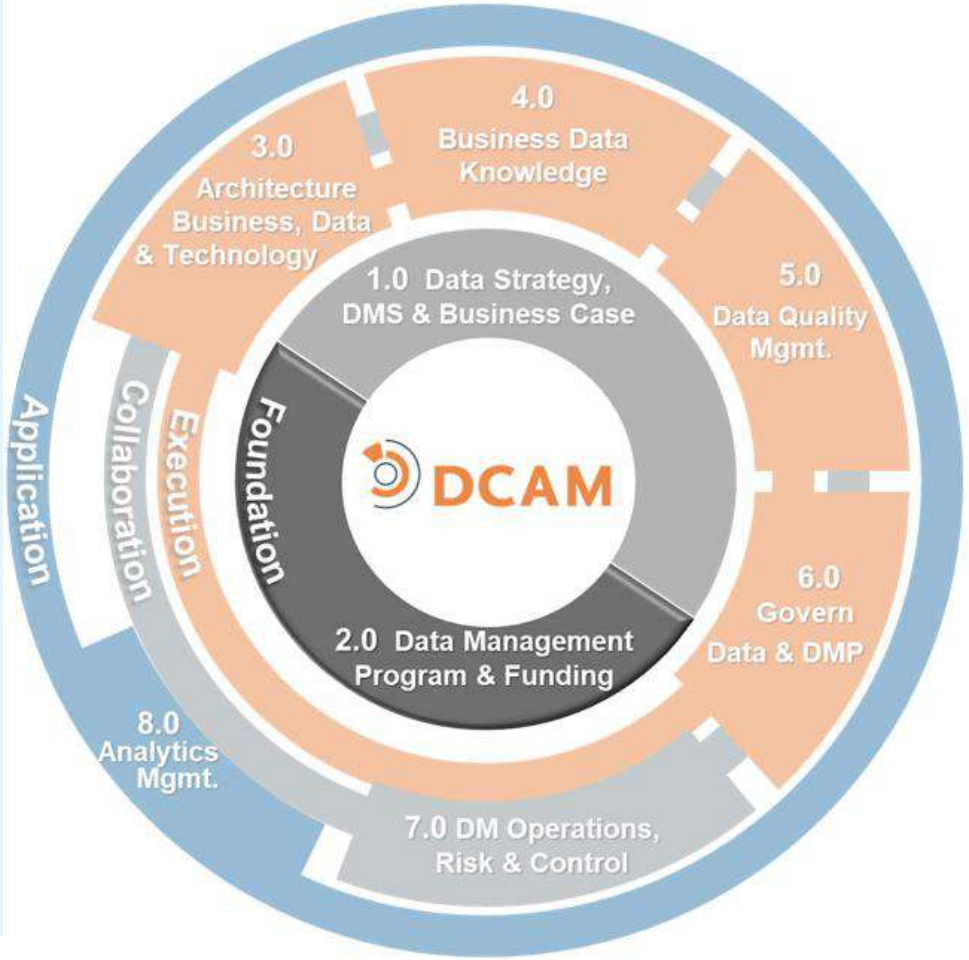
1.0 Data Strategy, DM Strategy & Business Case



Component 1.0

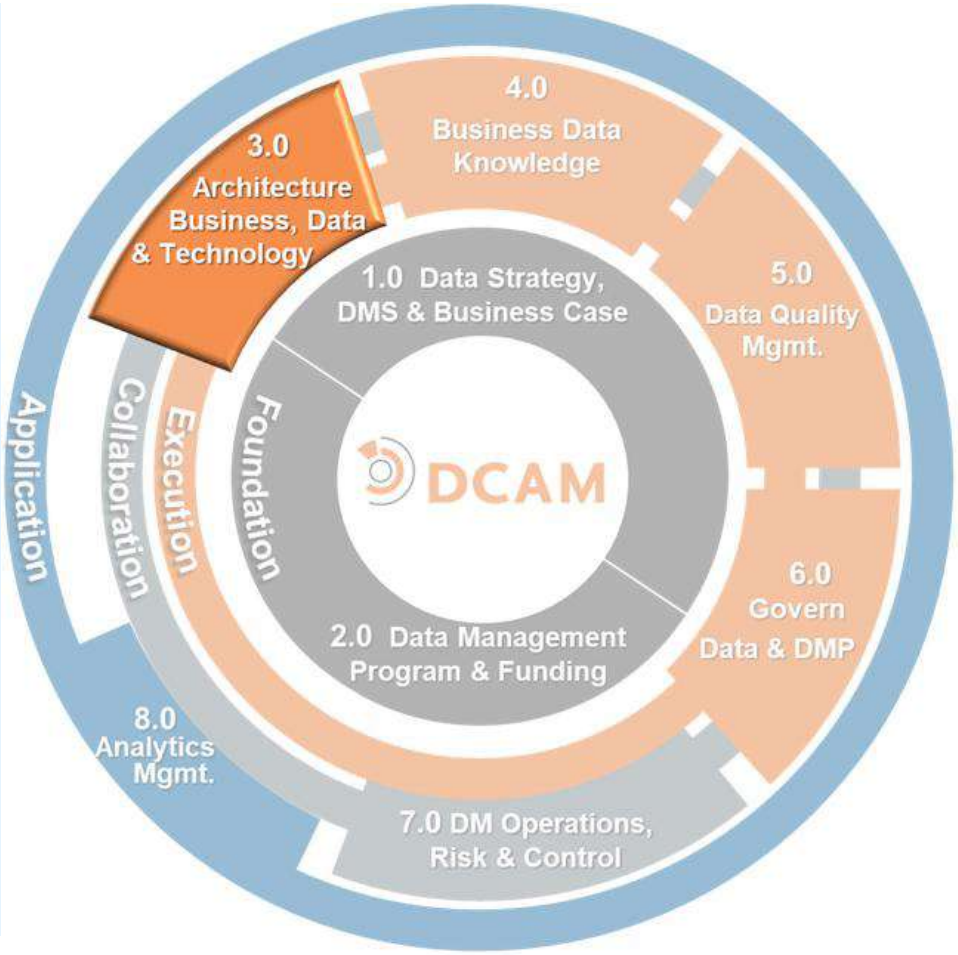
Defines the vision and the purpose of the data management program. Why is data management important?!

2.0 Data Management Program & Funding



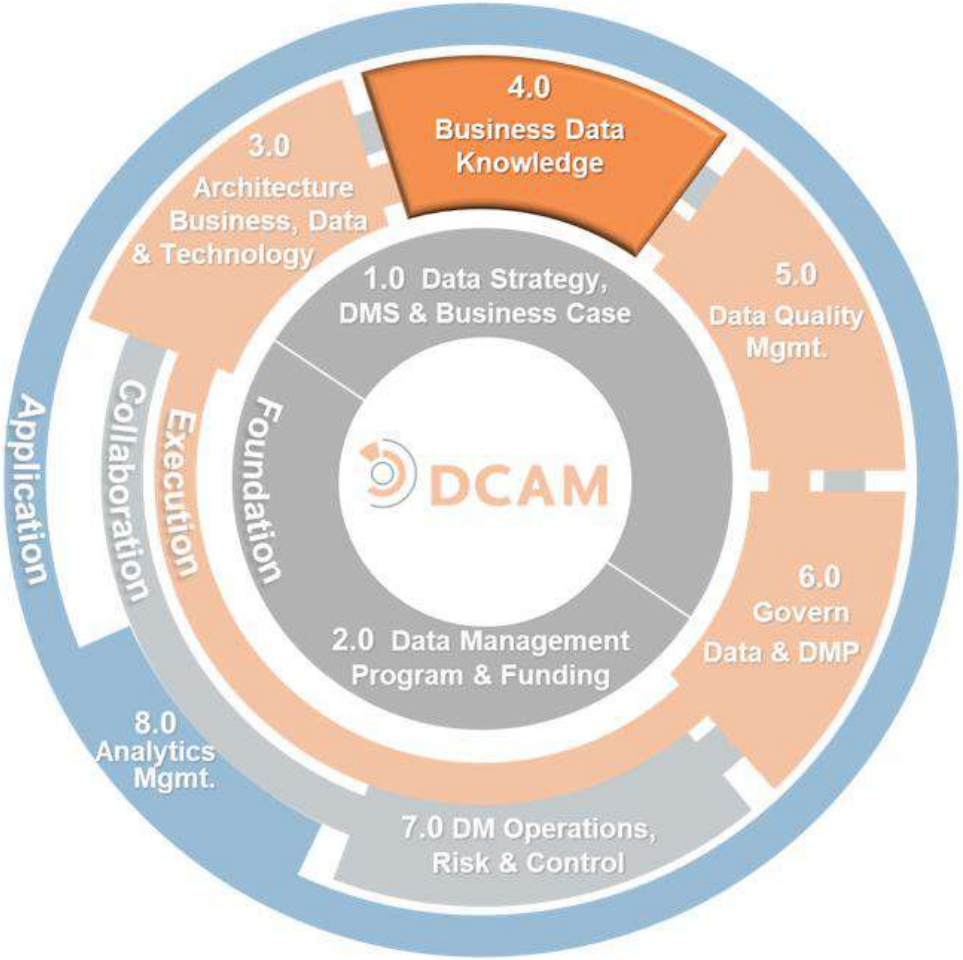
Component 2.0
Describes the organizational structure and funding model of the data management program

3.0 Architecture – Business, Data & Technology



Component 3.0
The path to integrated architecture begins with the **business** (requirements), which informs what **data** is needed, which in turn, informs how **technology** should be enabled

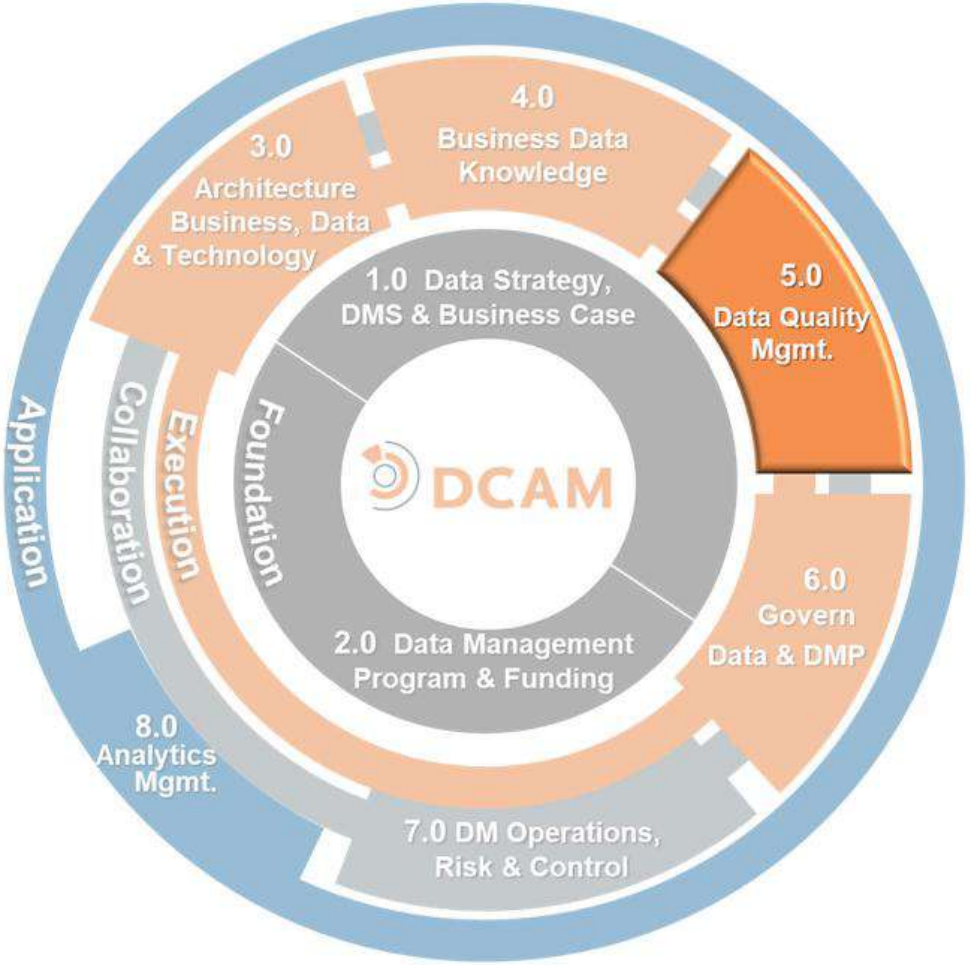
4.0 Business Data Knowledge



Component 4.0

Business Data Knowledge addresses methods and practices for building and continuously maintaining an organization's data literacy and shared understanding of its data

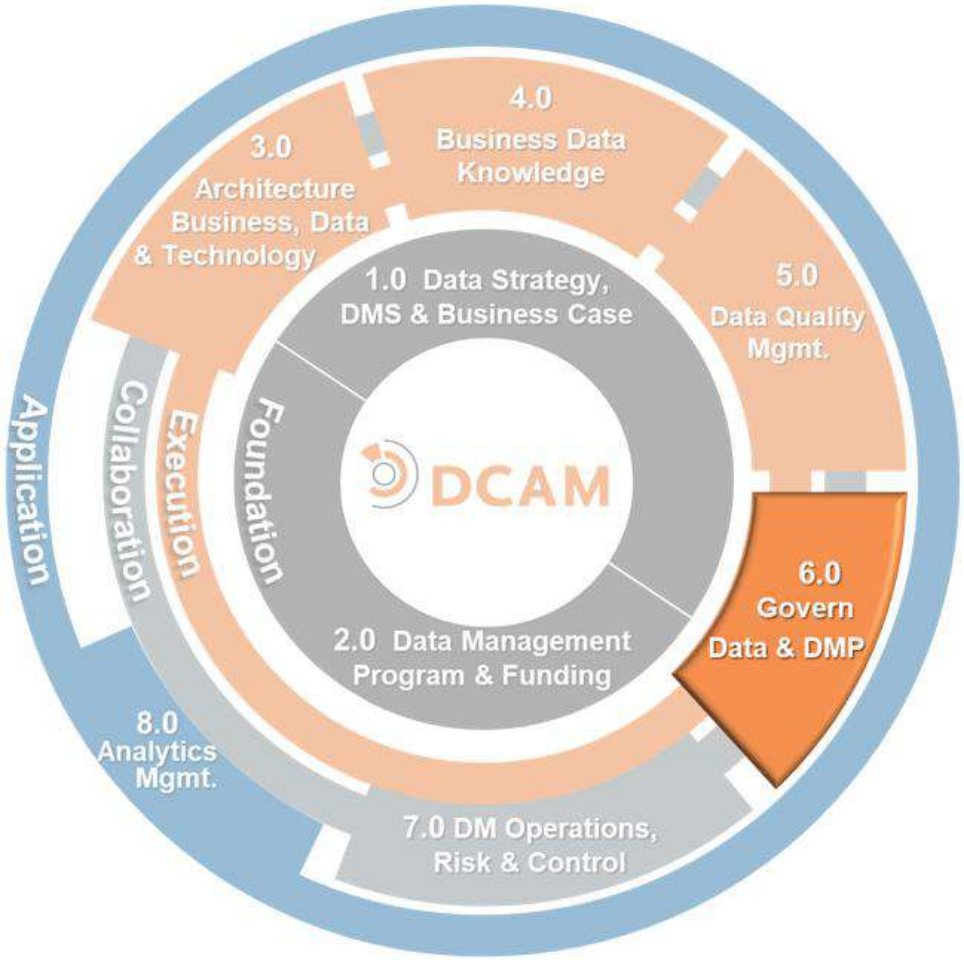
5.0 Data Quality Management



Component 5.0

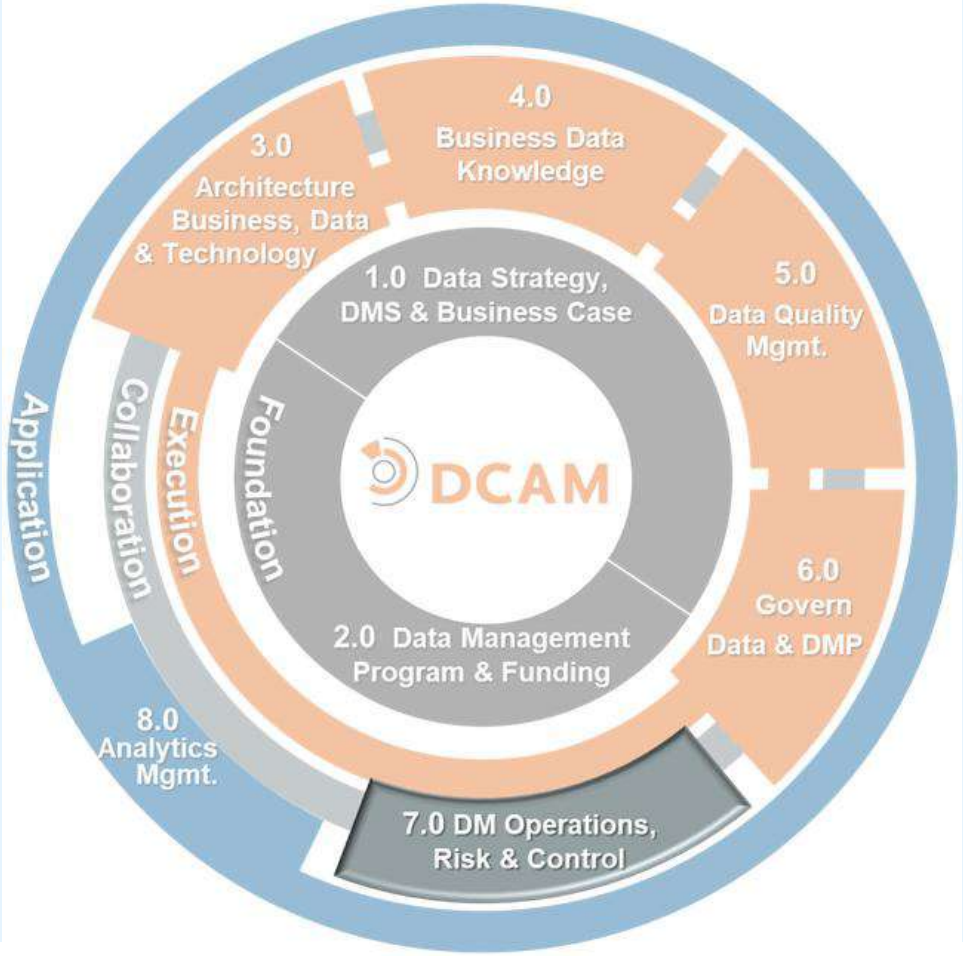
Deliver data that is trusted and fit-for-purpose, where users have confidence that the data is what they need, without reconciliation

6.0 Governance – Data & Data Management Program



Component 6.0
The rules of engagement for data management, focused on the implementation of policies, standards and operational procedures necessary to ensure that stakeholders “behave”

7.0 Data Management, Risk & Controls

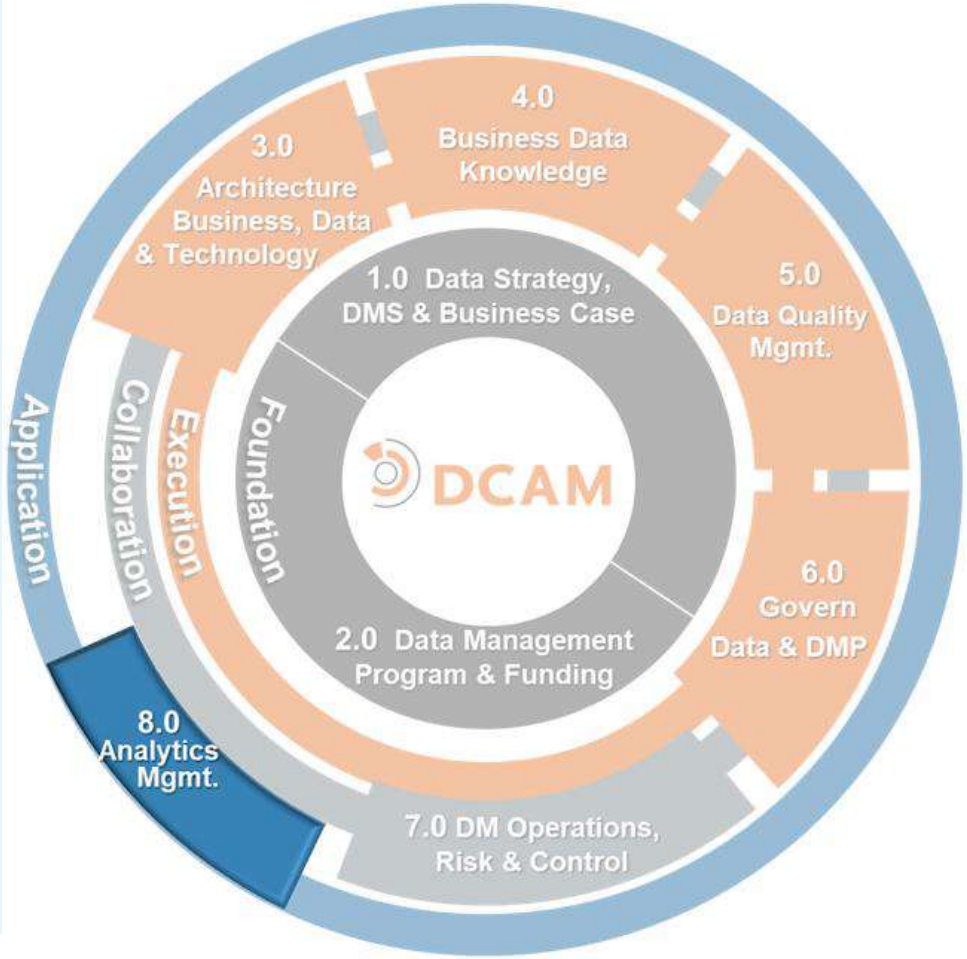


Component 7.0 (Collaboration Layer)
A successful data management program will enable what is referred to as a "data control environment".

A data control environment demonstrates governance over the entire data management lifecycle – from acquisition of data thru to consumption. And ensures collaboration with all the existing control functions across the organization

A true 'control environment' cannot be achieved until all the data management capabilities are operating collaboratively and in unison across the enterprise

8.0 Analytics Management



Component 8.0
Analytics Management structures, prioritizes, enables and governs the analytics activities of the organization in alignment with the Data Management capabilities

Data Management Capability Assessment Model

A data management best practice paradigm …

- Provides a common and measurable framework
- Establishes common language for data management
- Translates industry expertise into operational standards
- Documents capability requirements
- Grounded in evidence, formality and organizational engagement

Enables organizations to have trust and confidence that the data they are relying on is accurate, complete, rationalized and actionable.

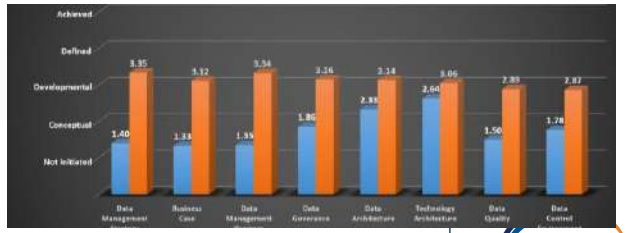
How are DCAM best practices being used today?

Program Initiation

Training and Compliance

Assessments

Industry Benchmarking



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Data Management Capability Assessment Model

The OIG and the US Federal Reserve System

- US Federal Reserve System (all district banks and board) utilizes DCAM
- OIG is the audit arm of the US Federal Reserve System
- Public report published January 2023

https://oig.federalreserve.gov/reports/board-data-management-roles-responsibilities-jan2023.pdf

> The System is also an EDM Association member, and the System's Data Management Leadership Team has **endorsed the use of DCAM** as the standard tool for assessing data management maturity.

International Regulators

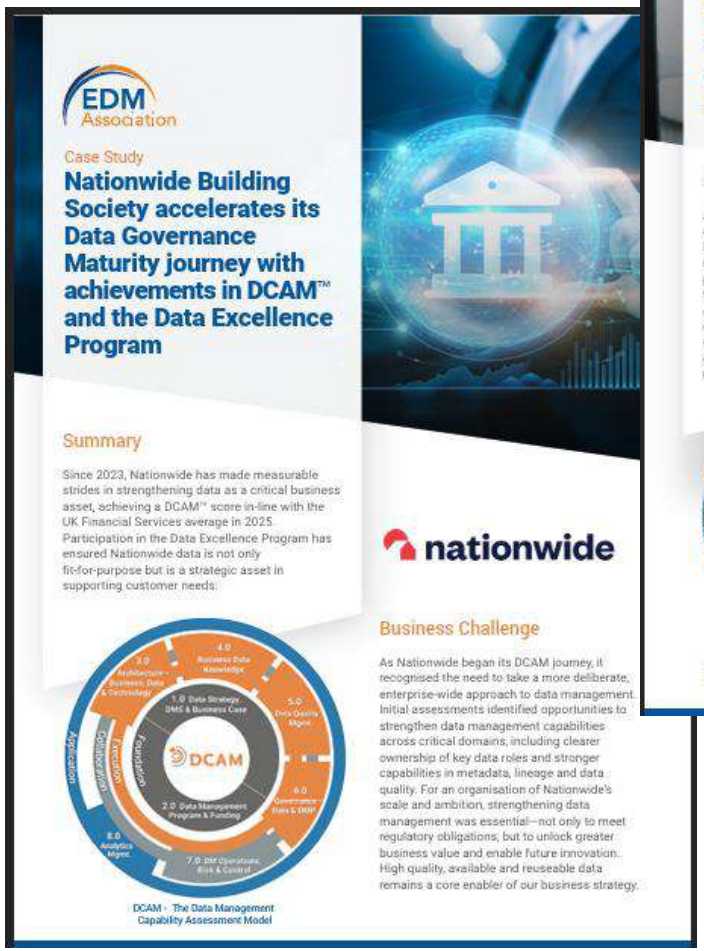
OSFI BSIF

UNITED STATES FEDERAL RESERVE SYSTEM

EUROPEAN CENTRAL BANK

Data Management Capability Assessment Model

DCAM In Action:



https://edmcouncil.org/frameworks/dcam/#about

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Who is leading the Data Initiative in the “C” Suite

Chief Digital Officer

Focus: Digital Transformation
Goal: Leading digital marketing strategies, eCommerce, and enhancing customer experiences.

Chief Information Security Officer

Focus: Protecting the organization against cyber threats
Goal: Deploy technology safeguards; develop and implement security policies and procedures; respond to breaches

Chief AI Officer

Focus: Implementing and scaling AI technologies; ensuring models are accurate and ethical
Goal: Leveraging AI to drive business innovation and value

Chief Information Officer

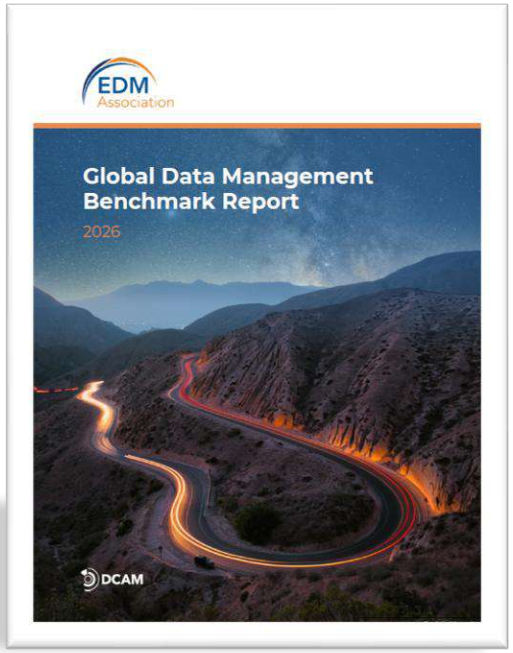
Focus: IT Strategy/technical implementation
Goal: Responsible for IT service delivery and keeping abreast of the latest technology products and services

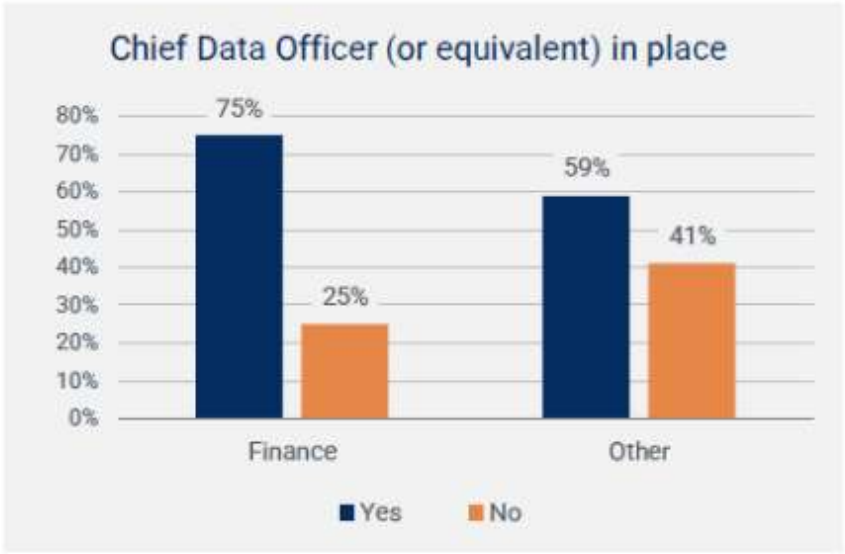
NEW! 2026 Global Data Management Benchmark Report

EDM Association is pleased to introduce the fifth edition of our **Global Data Management Benchmark Report** – PLUS, our new online **Benchmark Viewer** exclusively for our members!

This year's study reflects insights from **435+ cross-industry organizations across more than 50 countries,** highlighting the continued evolution of data management as a strategic, enterprise-wide capability – **and a critical foundation for any AI program.**

https://edmcouncil.org/innovation/research/benchmarks/





Seventy-two percent of surveyed organizations report having the Chief Data Office (CDO) in place.

Adoption was the strongest in the government sector, where 85% of respondents indicate that a CDO has been formally appointed.

The finance, insurance and banking sector, the largest respondent group, also demonstrated high adoption at 75%

Other industries show broad range, with CDO adoption levels spanning from 70% range down to approximately 50% at the lower end.

What is a Chief Data Officer?

What is a Chief Data Officer?

A chief data officer (CDO) is a senior executive responsible for overseeing an organization's data strategy and management.

The primary role of the CDO is to leverage data as a strategic asset and drive data-driven decision-making across the organization.

First Chief Data Officers in Industry

- Cathy Doss, 2002, Capital One
- Usama Fayyad, 2005, Yahoo
- John Bottega, 2006, Citibank

How has the role of the Chief Data Officer evolved over the past 20+ years?

The Evolving Role of the Chief Data Officer

CDO "Beta" 2002 - 2008

Primarily A Back-Office Function

Data Operations
- Efficiency & Cost
- Trade Fail Remediation
- Master Data Management
  - Customer
  - Product
  - Transaction
  - Pricing

CDO "1.0" 2008 – 2016

Financial Crisis - Defensive

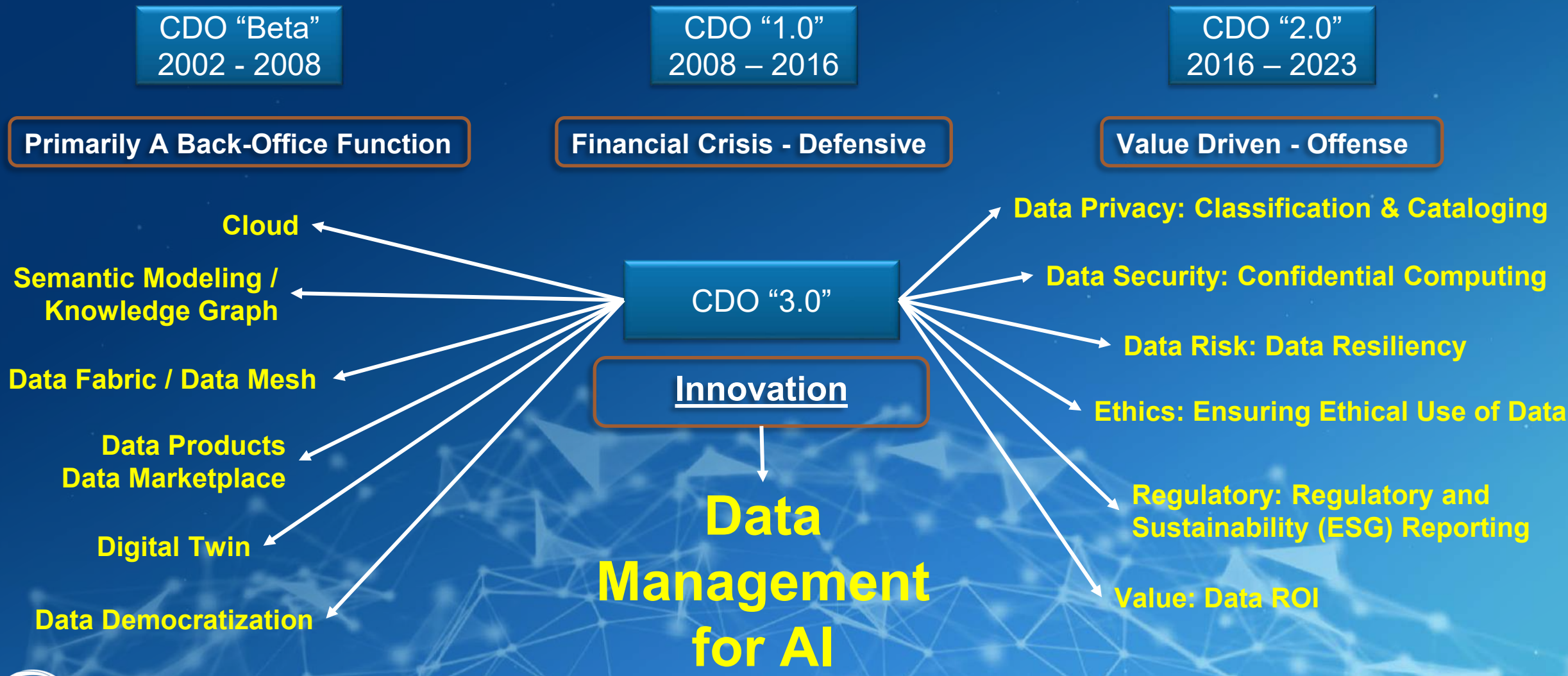
Data Governance
- Risk
- Regulatory Adherence (BCBS239)
- Data Management Audits
- Regulatory Oversight
- MRA/MRIA Remediation

CDO "2.0" 2016 – 2023

Value Driven - Offense

Data as an Asset
- Analytics
- Data Ethics
- Data Privacy and Protection
- Digital Transformation

The Evolving Role of the Chief Data Officer



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Chief Data Officer

A chief data officer (CDO) is a senior executive responsible for overseeing an organization’s data strategy and management.

The primary role of the CDO is to leverage data as a strategic asset and drive data-driven decision-making across the organization.

Chief Data Officer

A chief data officer (CDO) is a senior executive responsible for overseeing one of an organization's most strategic assets – its data. Through the application of foundational data management capabilities (data strategy, data architecture, data governance and data quality), the CDO must ensure that the information they are responsible for is accurate, timely, protected, and above all, trusted.

Only then can the CDO leverage the ever-transformational innovations in technology – advanced analytics, artificial intelligence, machine learning, semantic modeling, and generative AI, to responsibly balance the ethical use of data to manage risk, comply with regulation, and protect privacy, while driving revenue growth, penetrating new markets and generating new products and services to benefit to our organizations, industries and society.

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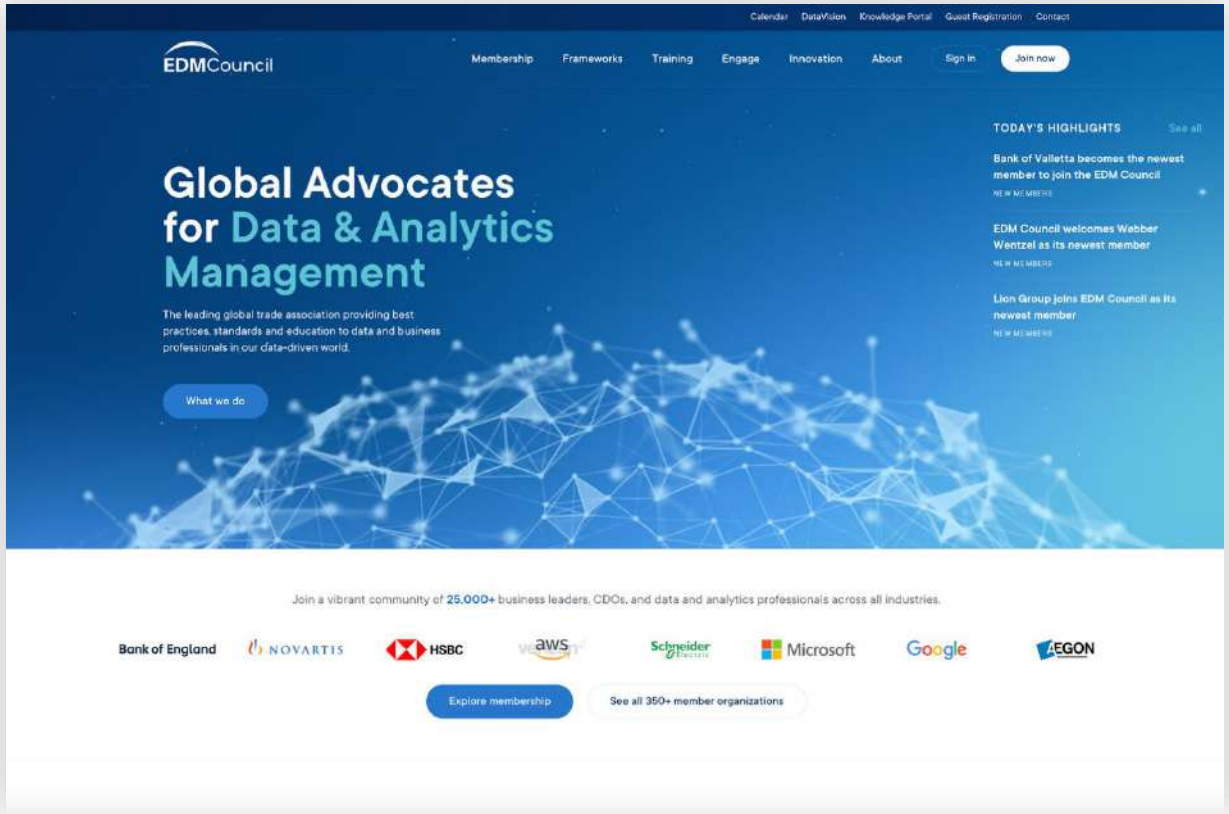
New Data-AI Contract
Why Data Matters?

Data is the fuel for analytics, automation, and AI. Organizations that invest in trusted, connected, and well-governed data are better positioned to make decisions, drive innovation, and create competitive advantage.

Join the Data Driven!



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Cross-industry, including Regulators

30,000+
Professionals

Worldwide
Americas, Europe,
Africa, Asia, Australia

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DCAM
CDMC EDMAssociation Cloud Data Management Capabilities
FIBO
OMG Standards Development Organization.
digital twin CONSORTIUM
AREA

EDM Association

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Data & AI Summit 2026

The virtuous cycle between data and artificial intelligence: better data produces better AI, and better AI produces better data management.

DATE Thursday, July 23, 2026 · 2:00 – 7:00 pm

HEADQUARTERS Tournon Building Auditorium, Central Bank · San Jose How to get there ↗

The New Data-AI Contract… Why Data Matters

Thank You!

EDM Association

Trusted Data and Governed Foundations for Enterprise-Ready AI

John Bottega, President