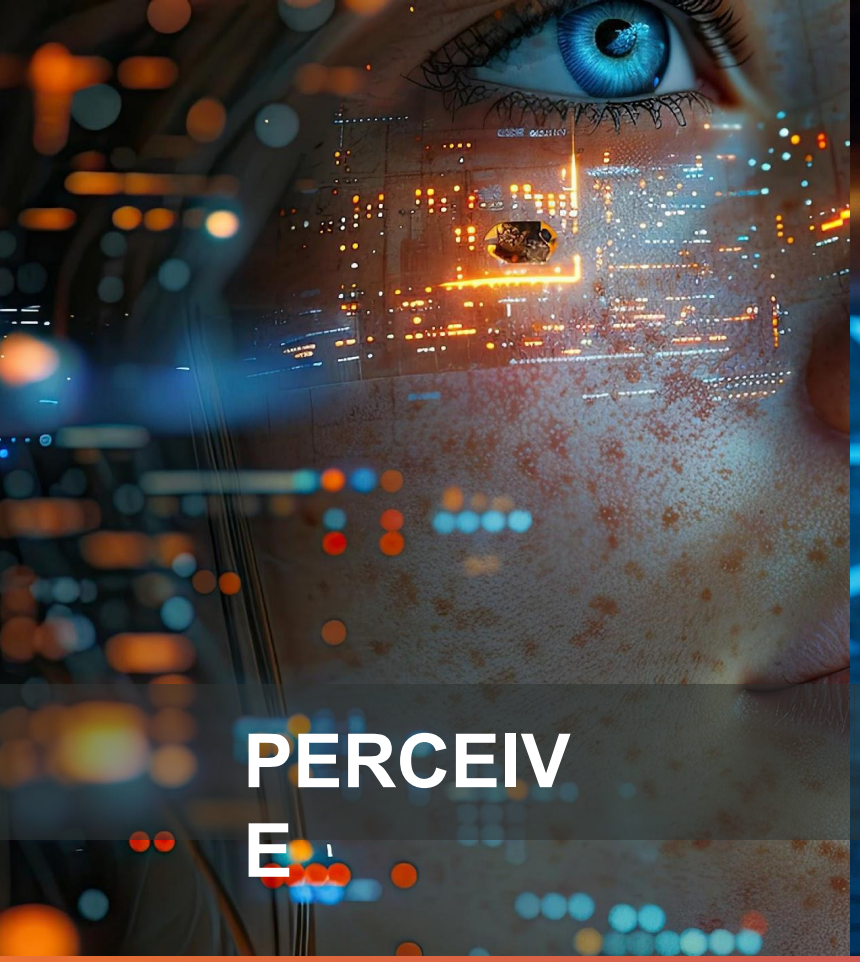
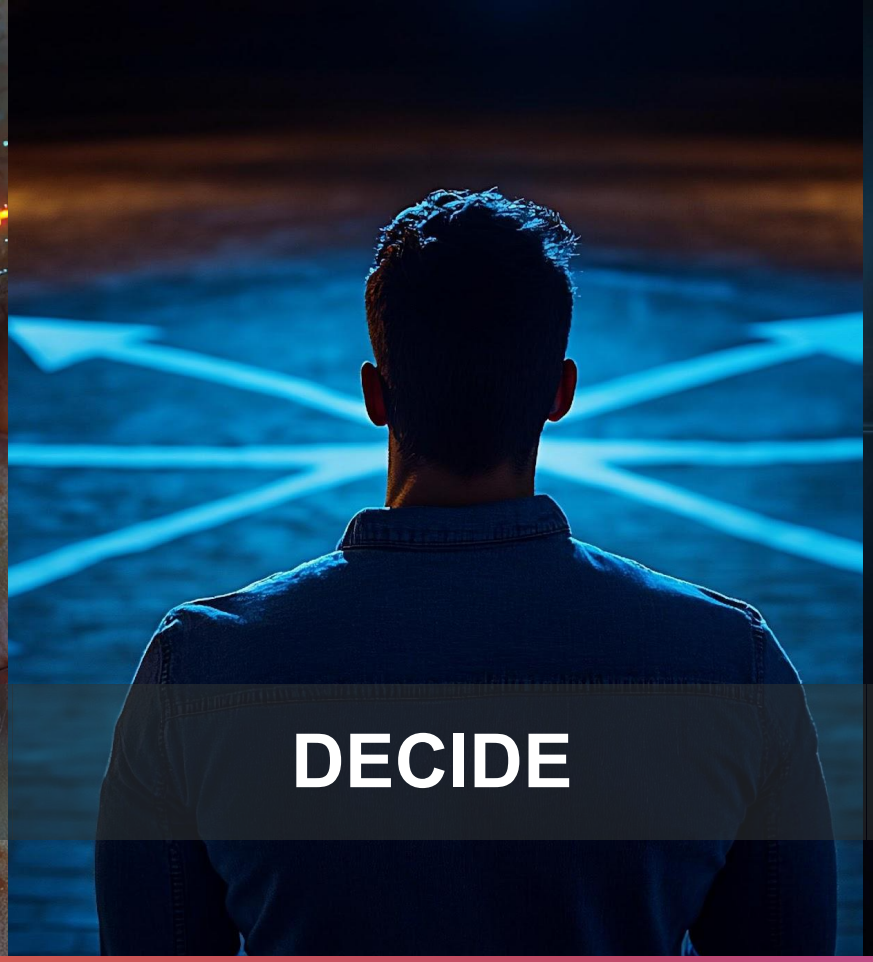
denodo

# Enabling Reliable Agentic AI

*Through Unified Data and Business Context*

**Terry Dorsey**
Sr. Data Architect and Evangelist





# What is Agentic AI anyway?

*AI systems that can **perceive**, **decide**, and **act** autonomously toward goals*

# *What do you want to do with it?*
# Manufacturing — Autonomous Supply Chain Optimization

**User Story:**
A global equipment manufacturer wants to minimize downtime and logistics costs.

Today, planners manually track orders, inventory, weather, and shipment delays — reactive and error-prone.

An *Agentic AI system* continuously monitors IoT telemetry, supplier feeds, and transport routes. When a shortage risk emerges, it **reasonably predicts impact, proposes alternatives, and triggers reorders** through governed workflows.

**Outcome:**

- Reduces response time from hours to minutes.
- Prevents over- or under-ordering through adaptive reasoning.
- Aligns every agent action with business rules and procurement policy.

# *What do you want to do with it?*
# Healthcare & Life Sciences — Clinical Trial Intelligence

**User Story:**
A pharmaceutical company runs multiple global clinical trials.

Today, analysts manually reconcile patient data, drug dosing, and site visits across silos.

An *Agentic AI assistant* analyzes EMR data, trial registries, and lab results.  It autonomously flags protocol deviations, missing consents, or unusual adverse event patterns, and **recommends corrective actions** to trial managers.

**Outcome:**

- Reduce compliance risk and human oversight
- Improve patient safety monitoring in near real time
- Ensure all actions are explainable, auditable, and policy-compliant.

*What do you want to do with it?*

# Financial Services — Intelligent Risk and Compliance Monitoring

**User Story:**
A regional bank must comply with evolving anti-money-laundering (AML) and fraud regulations.

Analysts manually review alerts from multiple systems — often missing context or duplicating effort. An *Agentic AI risk advisor* continuously **monitors transactions, customer profiles, and news feeds**, correlating anomalies.

When suspicious behavior appears, it flags patterns, ranks confidence, and **generates explainable summaries** for compliance officers.

**Outcome:**

- Reduce false positives and improve audit readiness
- Enhance collaboration between compliance staff and AI agents
- Convert detection from reactive to predictive and contextual

# Agentic AI looks **Revolutionary**
# What makes it different?

- Output → Outcome
- Static Models → Dynamic Reasoners
- Centralized Intelligence → Distributed Agency
- Data Consumption → Contextual Understanding
- Reactive Analytics → Proactive Decision-Making

*Passive Prediction to **Active Reasoning***

# But, Is it Really Different?

*They're the **same goals** that **analysts**, **business users**, and **knowledge workers** have always pursued*

## **Same Challenges**:

- Fragmented architectures that isolate meaning
- Inconsistent semantics across systems
- Reactive governance that chases issues instead of preventing them
- No shared context for reasoning or reuse
- Continuation of the IT/Consumer Divide

The only difference is **speed** — AI accelerates both **insight** and **efficiency**.

# The 95% Problem Makes Sense

- **80–90%** of AI projects fail to scale beyond pilots *(Gartner, McKinsey)*
- **85%** of big data projects never deliver business value *(Gartner)*
- **67%** of organizations admit data governance is reactive *(IDC)*
- <**20%** report measurable ROI from governance initiatives *(Gartner)*
- Analytics initiatives suffer from poor adoption ~**30%** *(Gartner, BARC, HBR)*
- **5%** of custom enterprise AI tools reach production.

Governance, AI, and Analytics failures are ***strongly*** linked

denodo

# Let’s talk about the 95% problem

**STOP**

- New stuff / same approach
- Following the lead
- AI = Big Data or Big Storage

**START**

- Observing core business behaviors
- Bridging the Consumer / IT Divide
- Adopting an entrepreneurial mentality
- Strategy for long-term sustenance

**Employ Business Transformation Thinking**

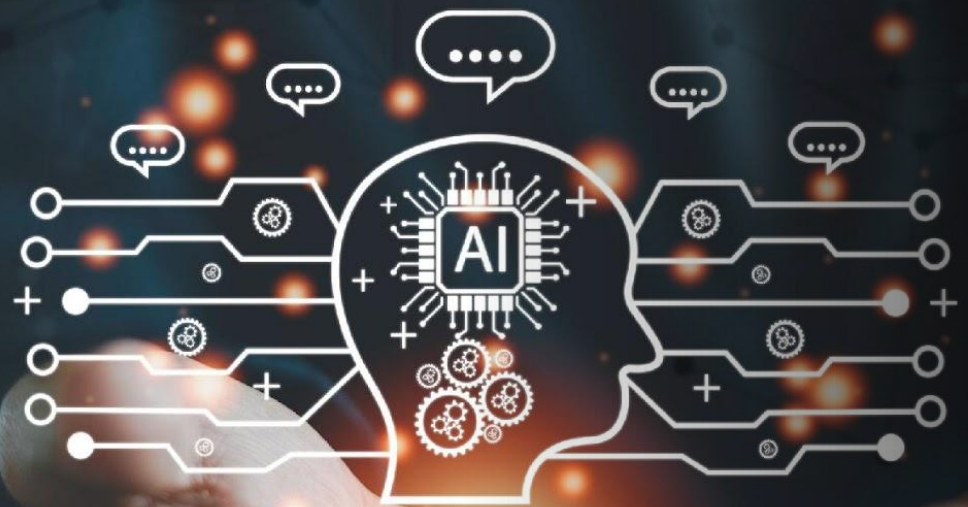
*Solving for the agent problem means rethinking the human problem — and both require structural change.*

# Business Transformation Thinking

- Rethink the Goal: From Delivery to **Capability**
- Redefine Ownership: **Shared Accountability**
- Rebuild Architecture around **Meaning**
- Reimagine Culture: **Entrepreneurial**
- Reconnect **Strategy** and Long-Term **Sustainment**

## Business Transformation Thinking means becoming **Adaptive**

*Enabling both humans and agents  to act intelligently, consistently, reliably and with purpose.*




# The world of Agentic AI

**Everything is fair game!**

- Enterprise Data
- External Data
- Documents
- Enterprise functions
- External functions
- Targeted AI Models

GenAI is the Big Data Model – We need to know how to play with it

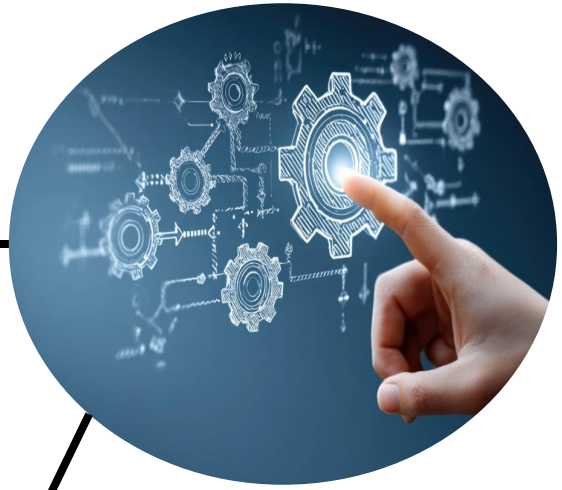
denodo

# Separating Concerns at the Enterprise Level

1

**What you perceive**

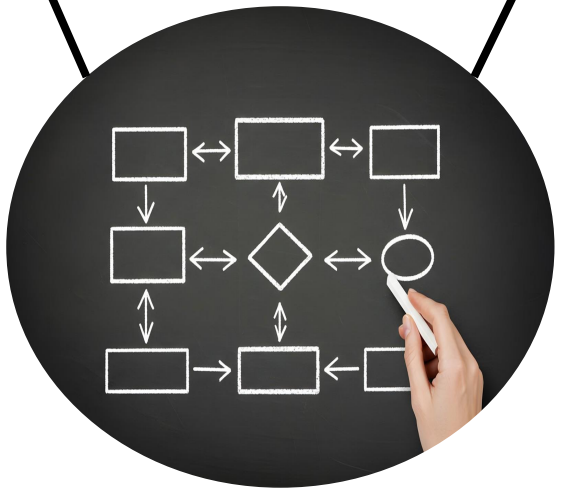
- Contextualize
- Find
- Govern
- Access



3

**How you act**

- User Experience
- Automation
- API



2

**How you decide**

- Business Logic
- Workflows
- Rules


# Separating Concerns at the Enterprise Level

**Most enterprises collapse these layers**

- Building logic into data pipelines
- Embedding governance into applications
- Hardwiring experiences in data sources

**Architecture of Autonomy requires**

✔ Data abstraction for perception
✔ Process modularity for reasoning
✔ Integration independence for action

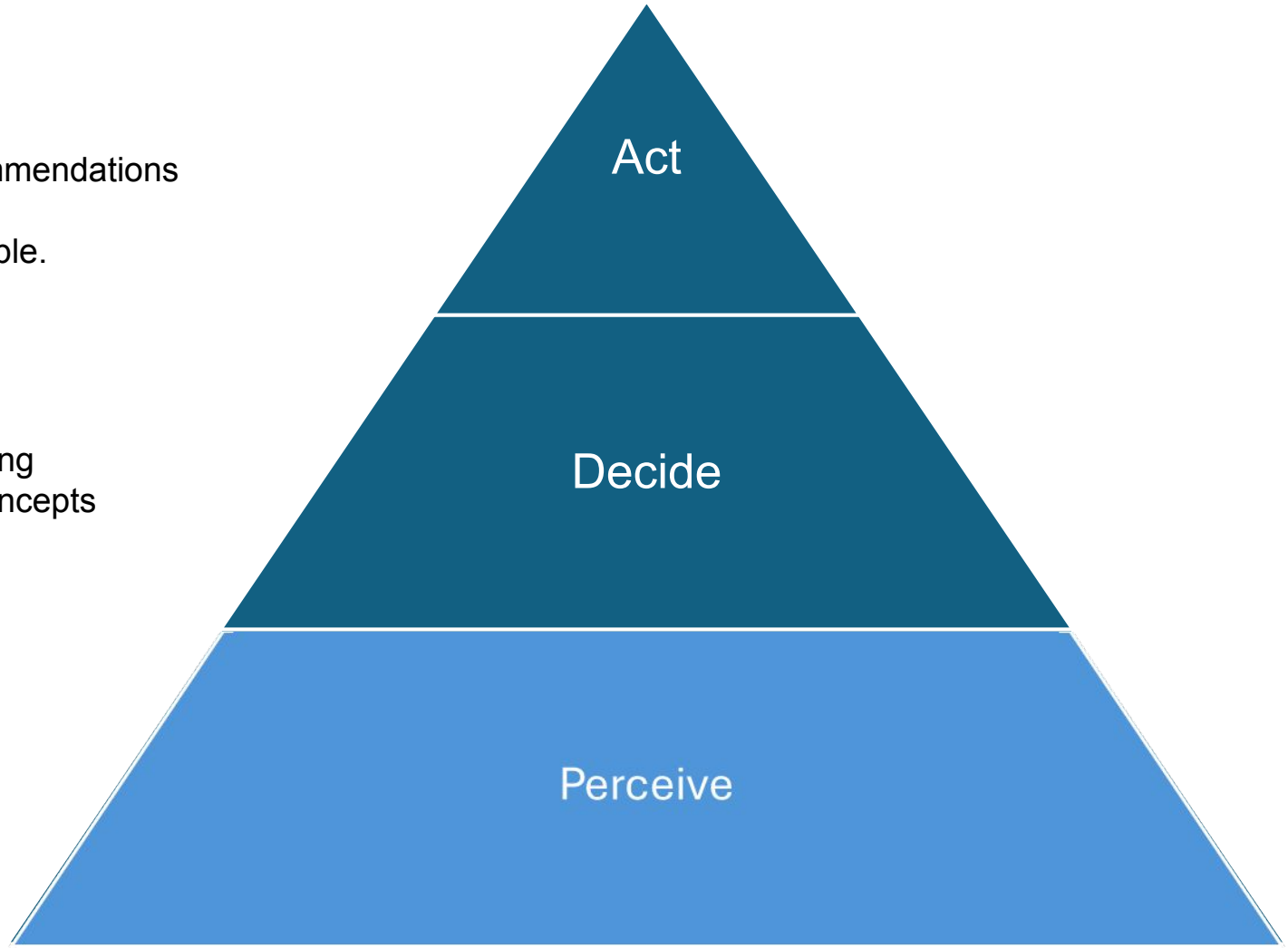
***This separation is the operational architecture of autonomy and precondition for scalable intelligence***

# The value of naming things at the Enterprise Level

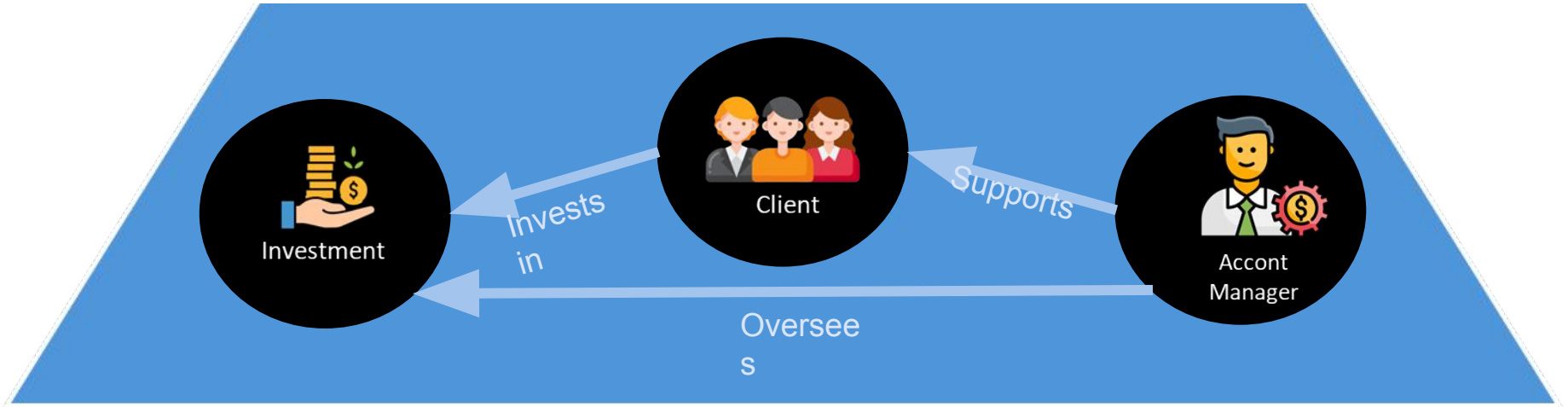
**Acting**
- Decisions, workflows, or recommendations
- Actions are traceable
- Repeatable, Auditable, Adaptable.

**Reasoning**
- Agents can reason over meaning
- Logic and policy operate on concepts
- Decisions become explainable

***Perceiving (Meaning)***
- *Shared vocabulary*.
- *Semantically linked concepts.*
- Consistent Information



# Perceiving the Environment




## Perceiving the environment requires

1. Establishing **what** things are
2. Defining **how** things **relate**
3. Determining what is **accessible**

A **Logical Data Fabric** applies **these** to **live**, **federated** data enabling **agents perceive** with **consistency** and **truth**

# The Logical Data Fabric as the Perception Layer

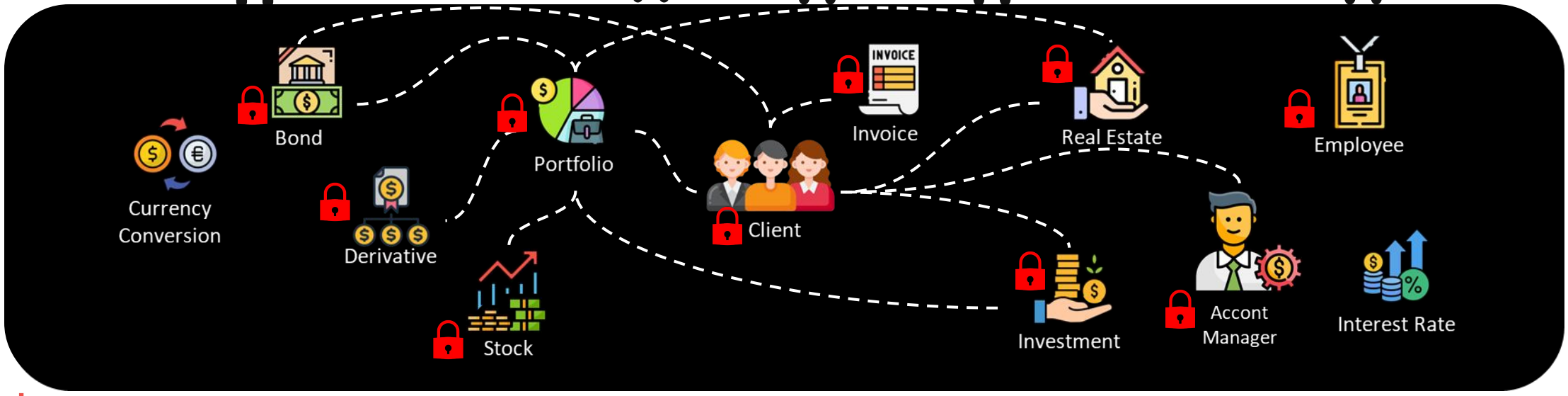
**External Data Sharing**
- Regulators
- Employer Partners
- Custodians & Clearinghouses
- Distribution Partners & Brokers
- Fintech & Open Finance APIs

**Core Business Functions**
- Financial Planners / Advisors
- Asset & Investment Management Teams
- Underwriters & Actuaries
- Claims & Operations

**Enterprise Functions**
- Finance & Accounting
- Risk & Compliance
- Human Resources (HR)
- Sales & Marketing
- Customer Experience (CX) & Service

**Technology & Data Roles**
- Data Scientists
- Data Engineers / Architects
- GenAI / AI Teams
- Cybersecurity Teams

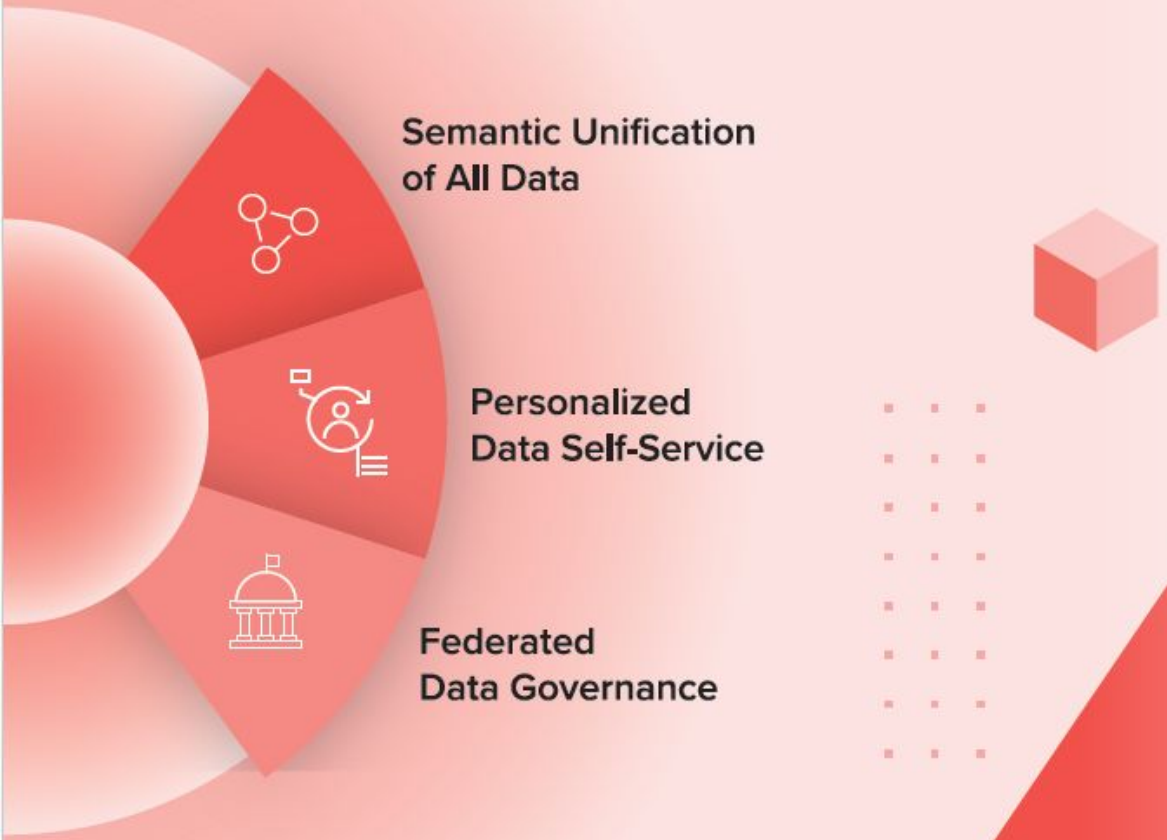
**Strategic & Emerging Uses**
- Enterprise Planning & Strategy Teams
- Product Development
- ESG & Sustainability Teams
- M&A / Corporate Development




# This is the foundation for cognitive alignment

- ✔ Human, Agent, or System — all operate on shared context
- ✔ Humans , Agents and Systems — all require same semantics, content and governance
- ✔ The logical data fabric unifies collaboration across these intelligence types

# Transform Your Data Ecosystem for AI and Self-Service

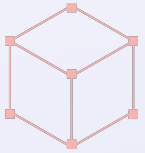


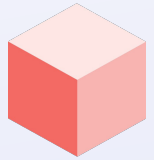

denodo

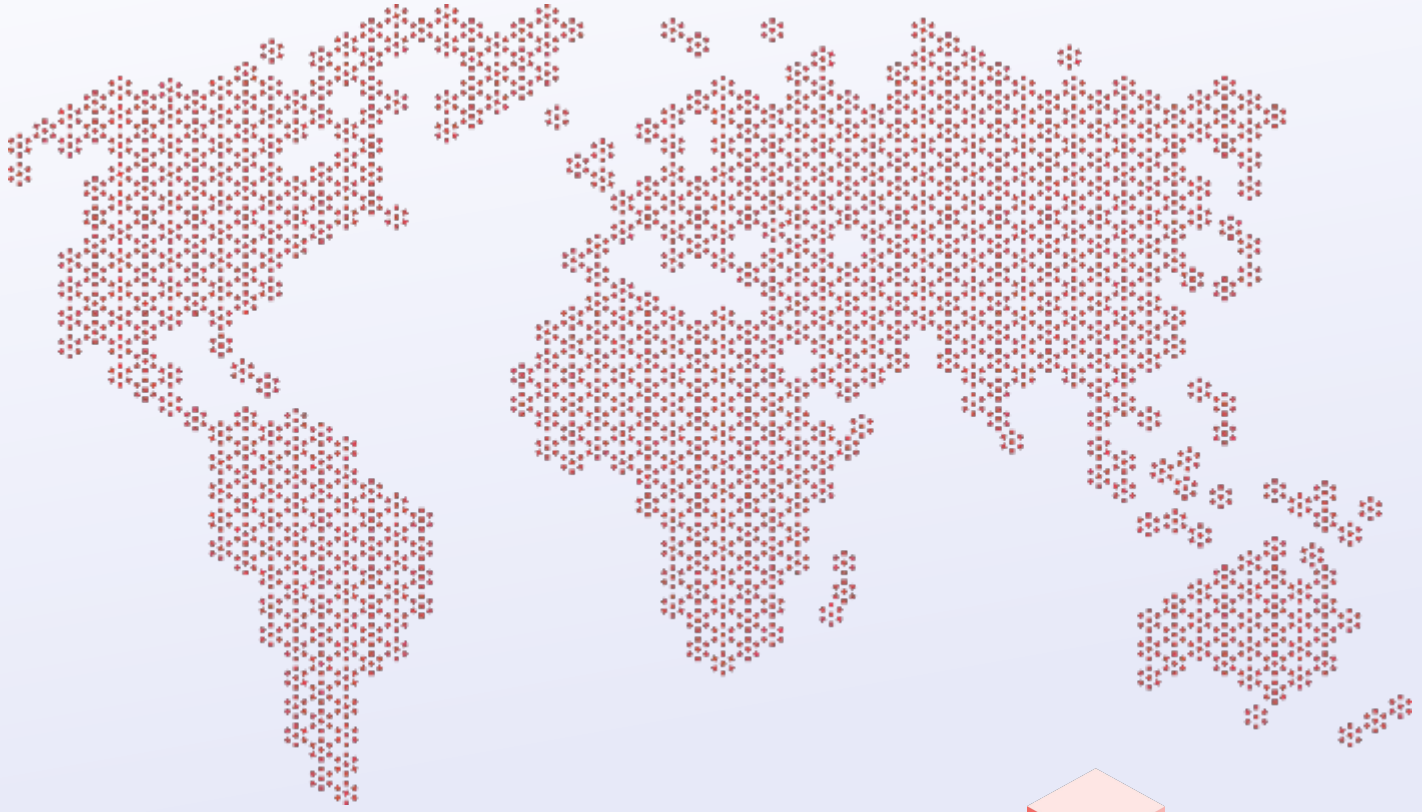
## Learn More

Visit the **Denodo Booth**
*or contact*
**Mike**
*nletros@denodo.com*

# Q&A







# Thanks!

denodo | www.denodo.com | info@denodo.com