Mainframe Data and AI

Unlocking VSEn and z/OS Data for Real Time Operational Use Cases and Artificial Intelligence (AI) Leverage and Acceleration

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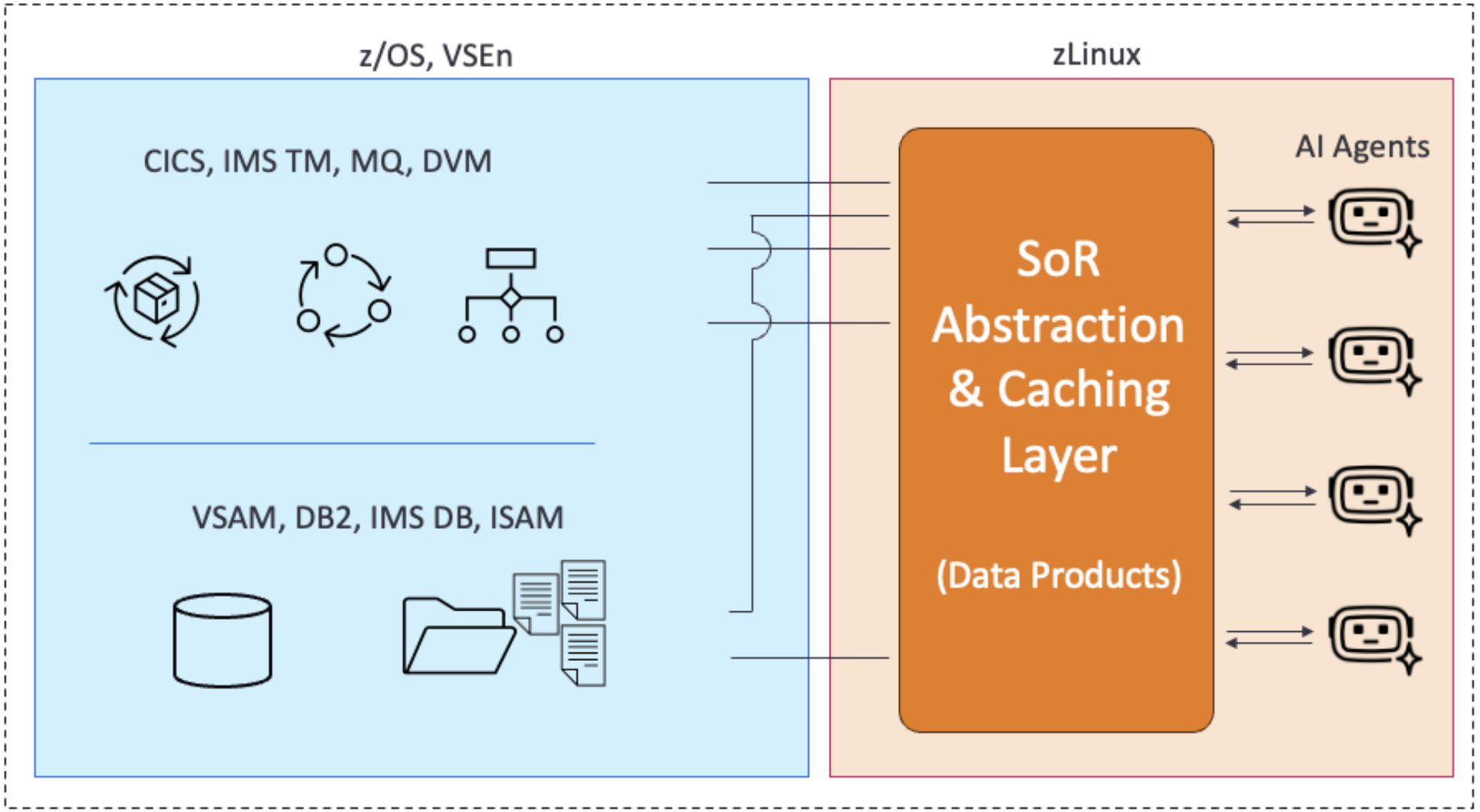
Key Takeaways

- Mainframe-hosted systems of record (SoRs) are among the enterprise's most valuable AI assets
- This value must be unlocked by making SoRs consumable by AI agents
- The **operational data product** pattern is the approach; K2view is a proven implementation of this approach

Concept


z/OS, VSEn
zLinux
CICS, IMS TM, MQ, DVM
VSAM, DB2, IMS DB, ISAM
SoR Abstraction & Caching Layer
(Data Products)
AI Agents

Topics

- Context for AI in an Enterprise
- Organizing data for AI consumption
- Operational Data Product Platform case-study – K2view
- Use-cases on Mainframe

Context for AI in an Enterprise

AI Is on an Exponential Trajectory for Enterprises

Building a C compiler with a team of parallel Claudes

To stress test it, I tasked 16 agents with writing a Rust-based C compiler, from scratch, capable of compiling the Linux kernel. Over nearly 2,000 Claude Code sessions and $20,000 in API costs, the agent team produced a 100,000-line compiler that can build Linux 6.9 on x86, ARM, and RISC-V.

An OpenAI model solved a famous math problem that stumped humans for 80 years

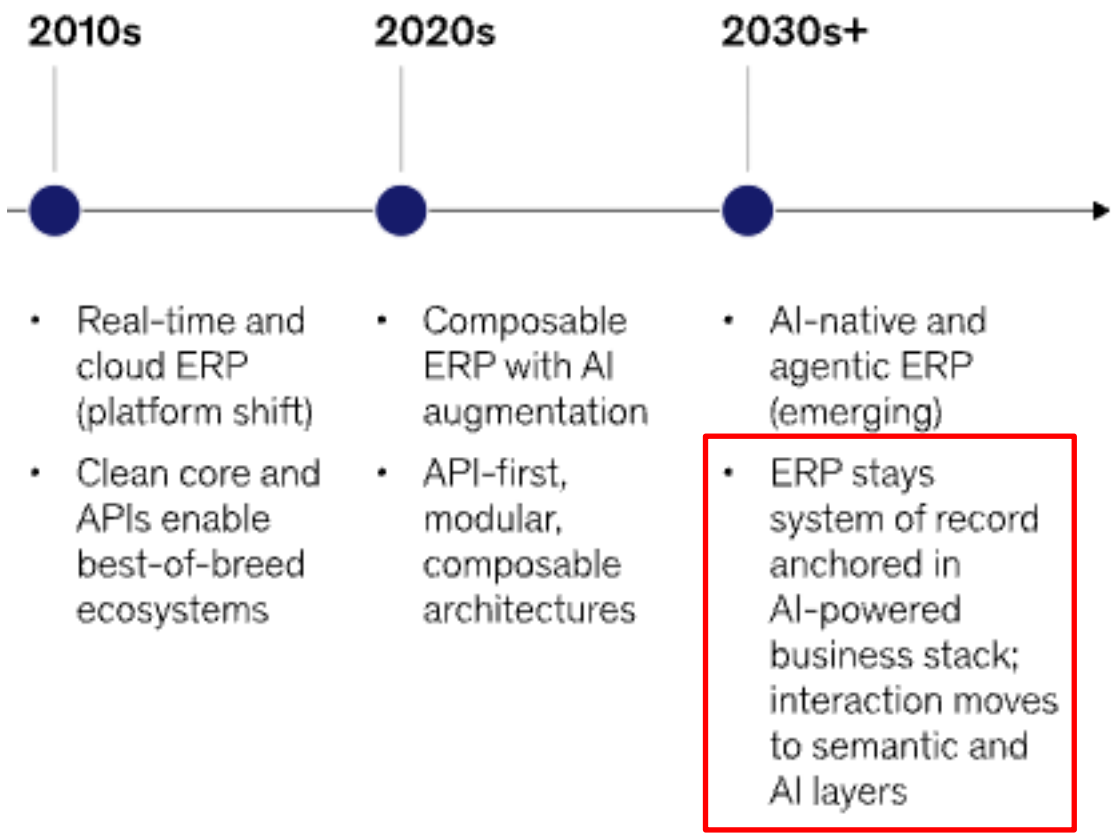
Recent headlines:

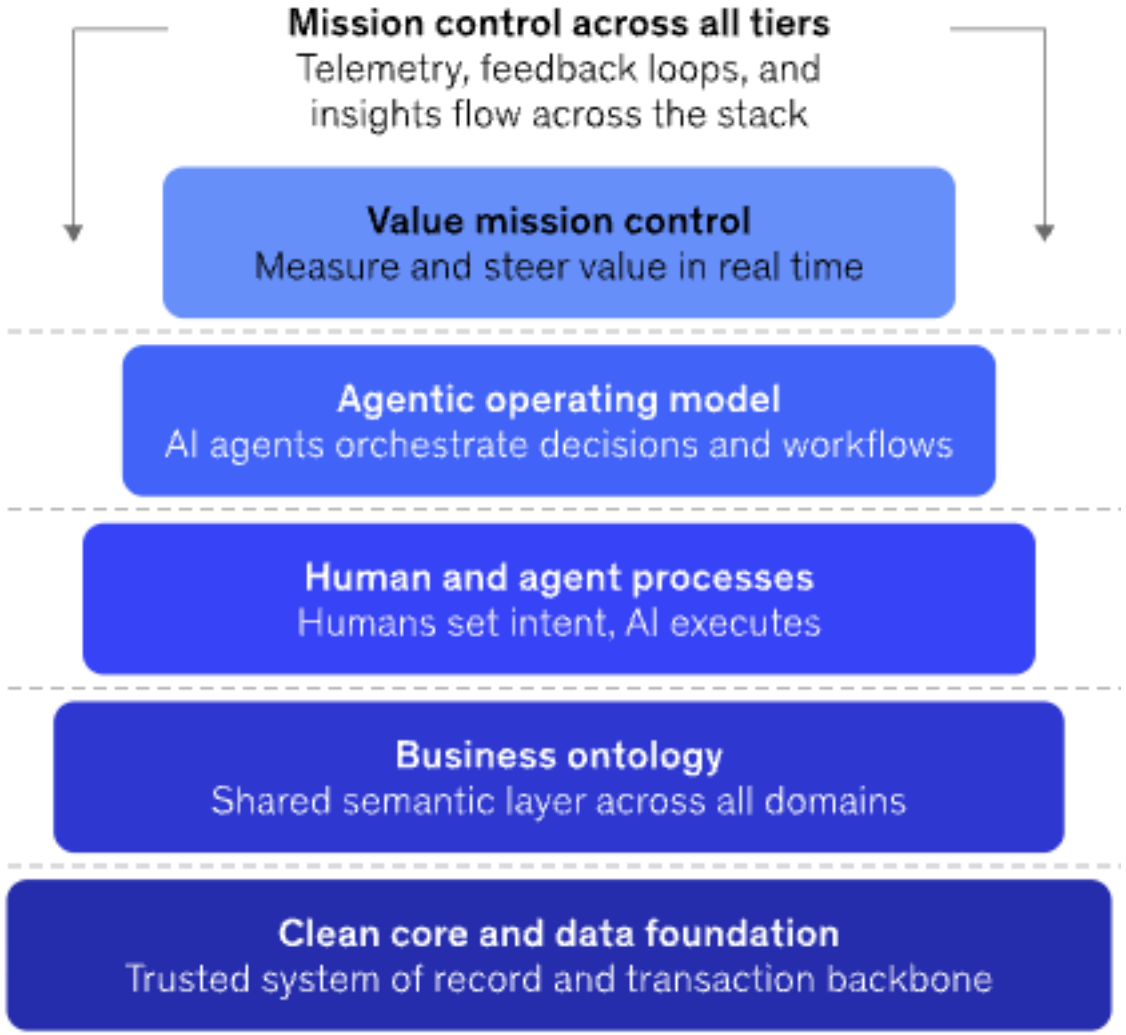
- *Solving new Math*
- *Compiling Linux Kernel*
- *Transforming ERP*

The end of ERP as we know it ?

By McKinsey

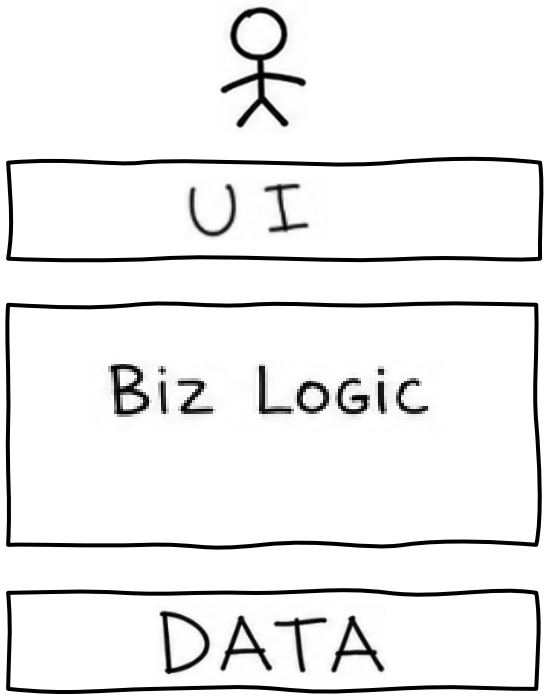
"ERP is evolving from transaction-centric systems of record to AI-native, agent-driven decision platforms"



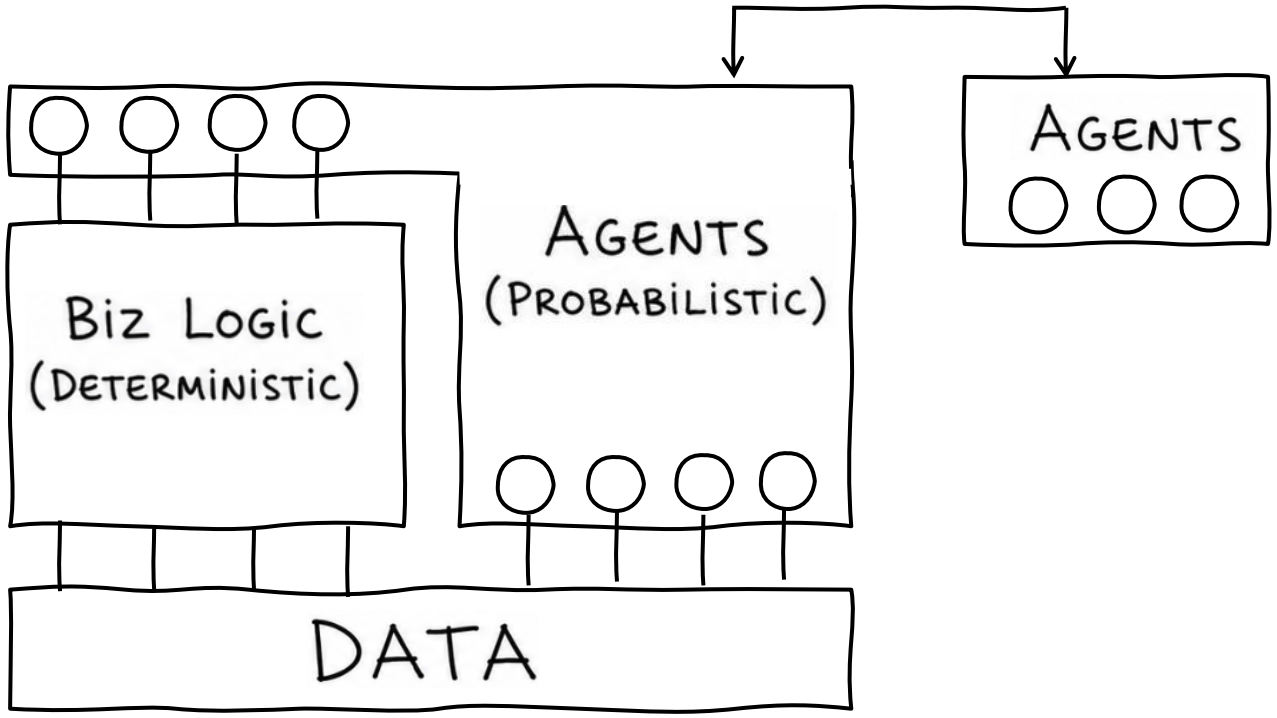


Source: https://www.mckinsey.com/capabilities/mckinsey-technology/our-insights/the-end-of-erp-as-we-know-it-five-ways-ai-is-disrupting-erp

TODAY



FUTURE STATE



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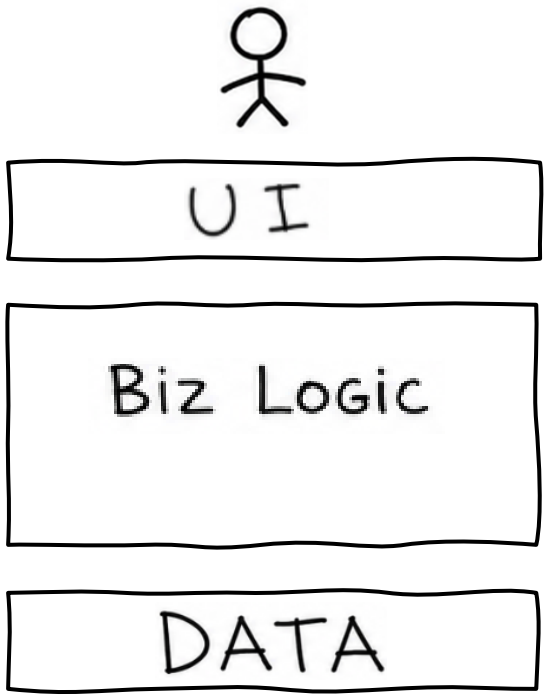
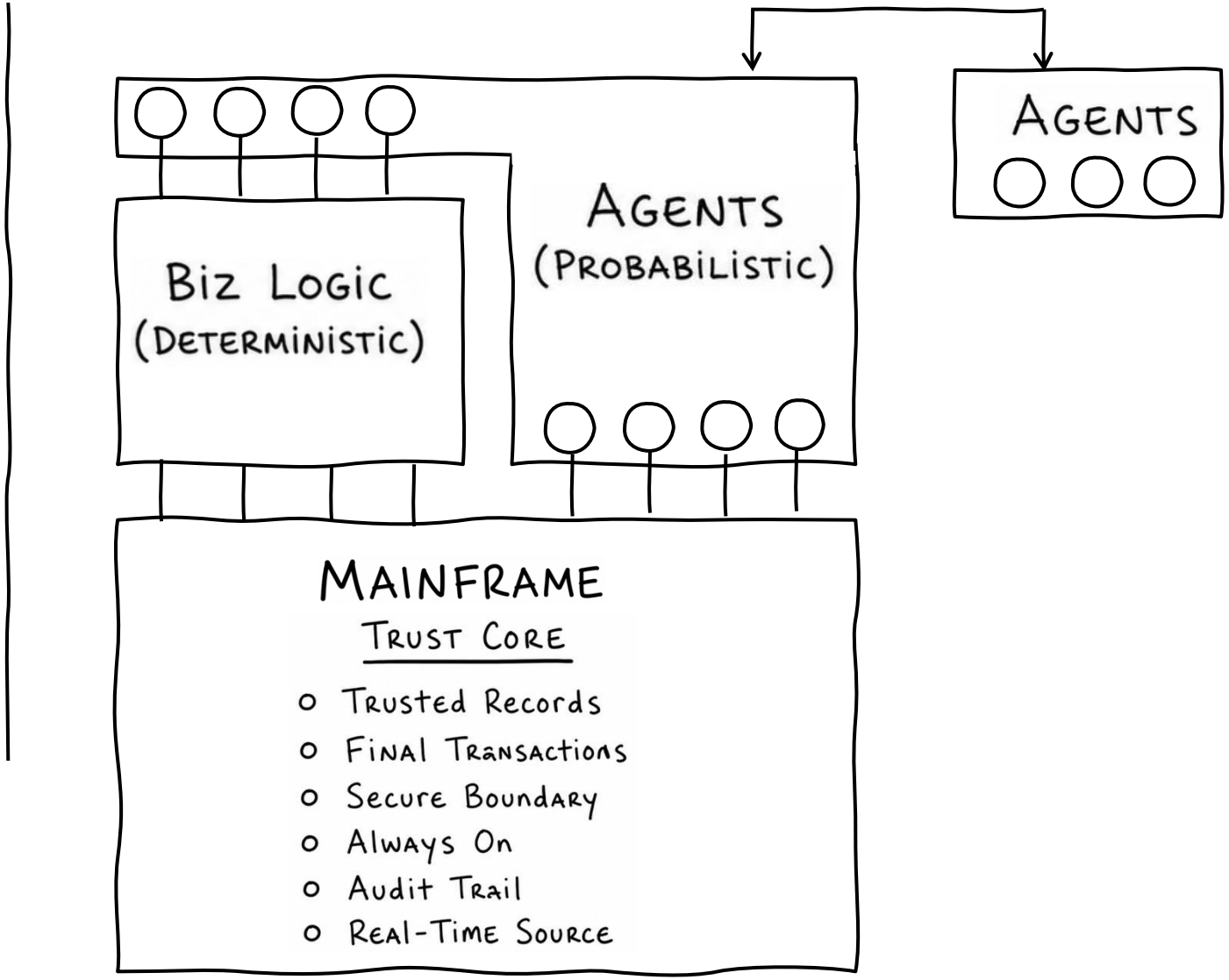
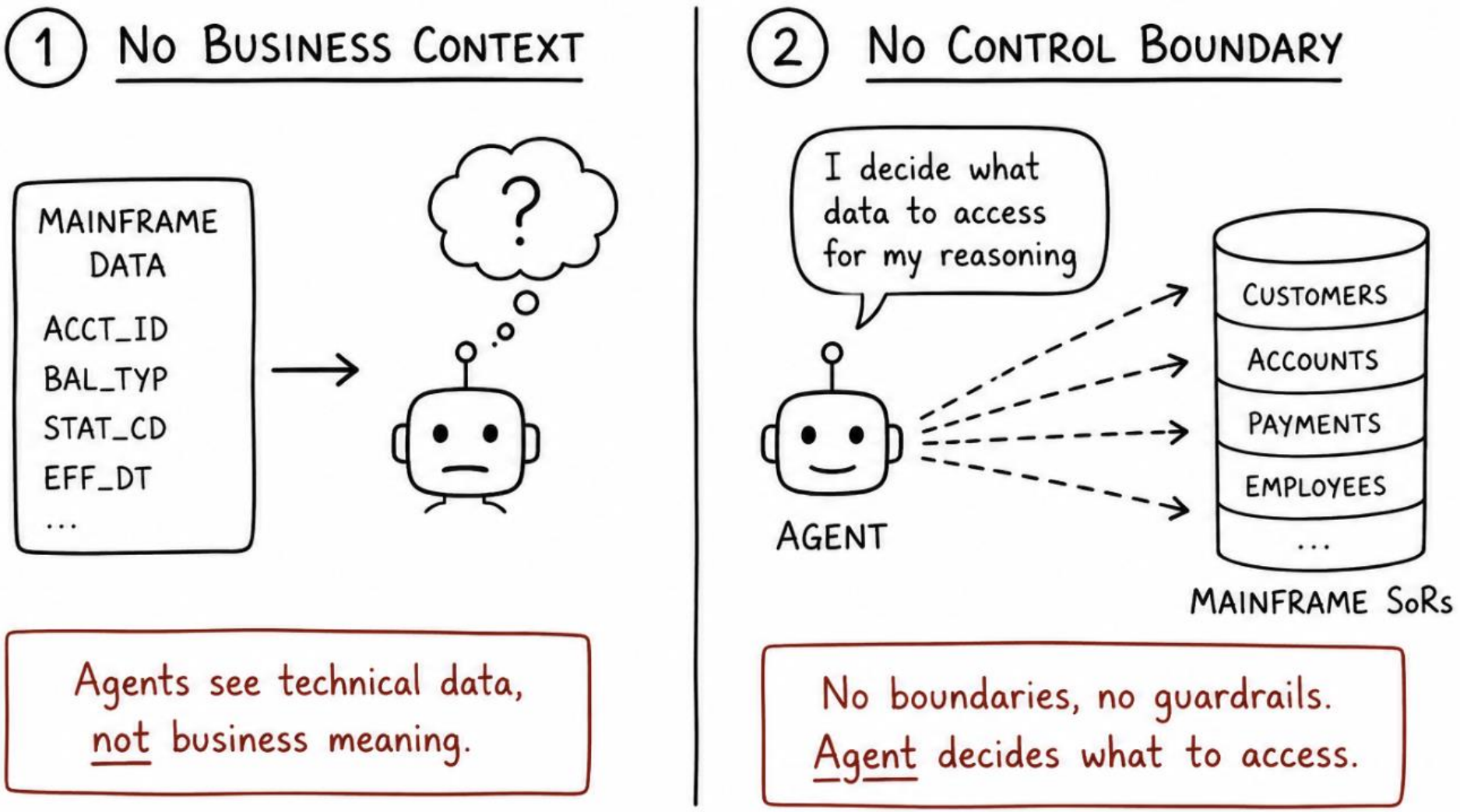


FUTURE STATE WITH MF

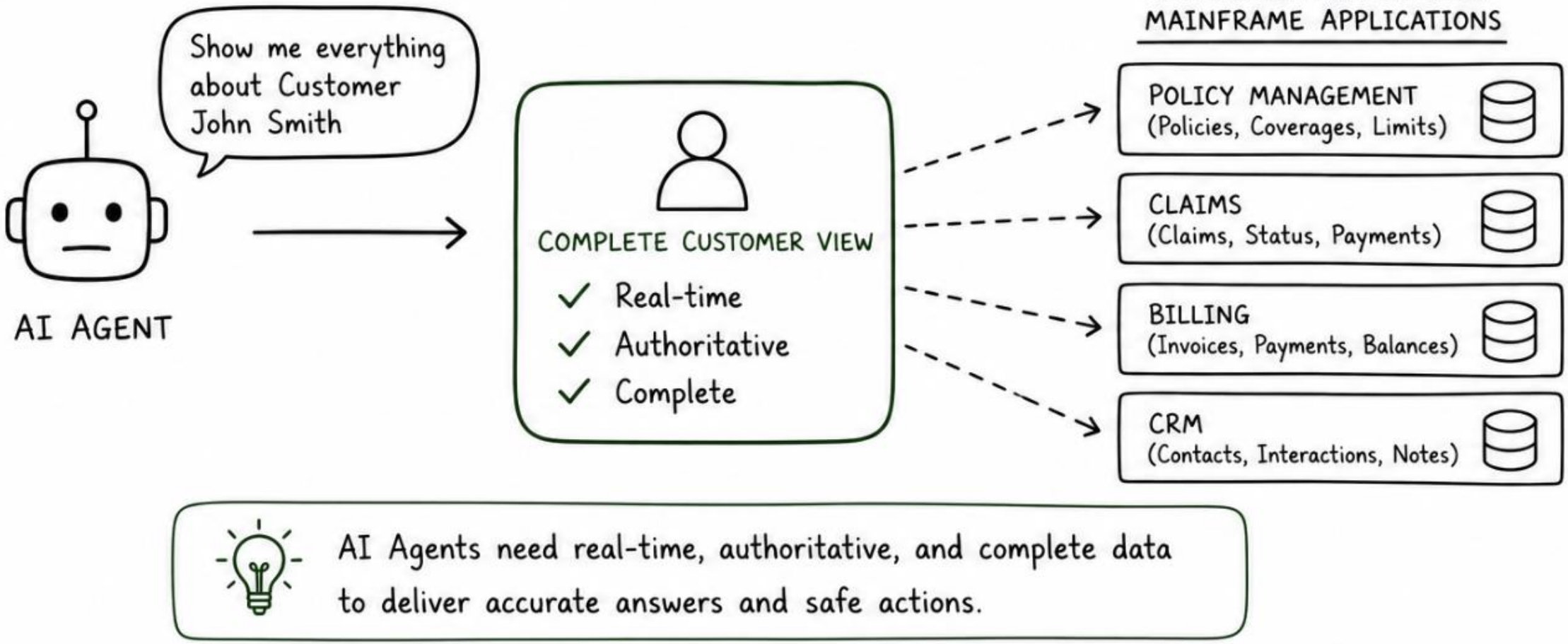


Organizing Data for AI

Can't expose MF SoRs Directly to AI Agents



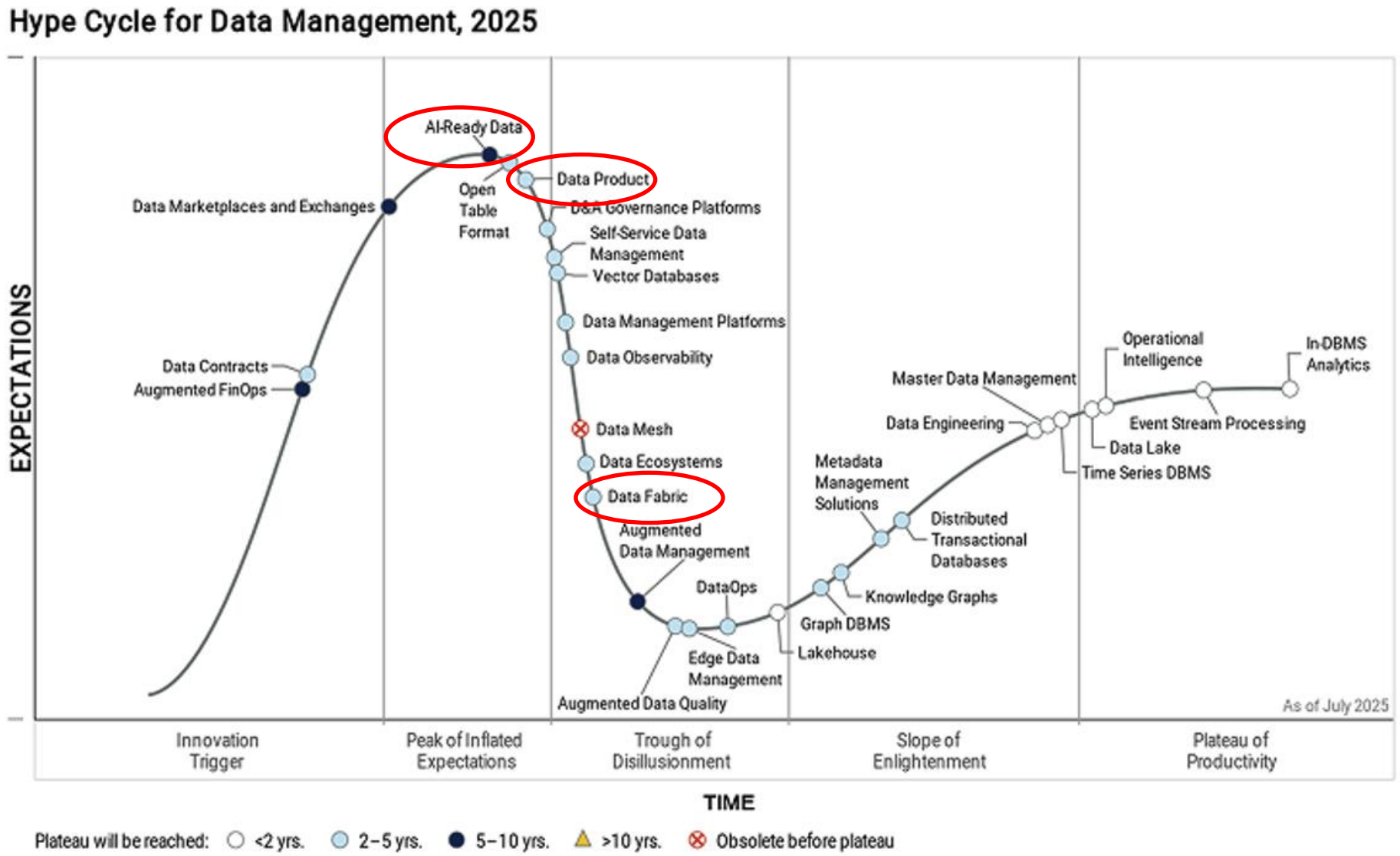
AI Agent Data Requiremnets



Data Management Approaches

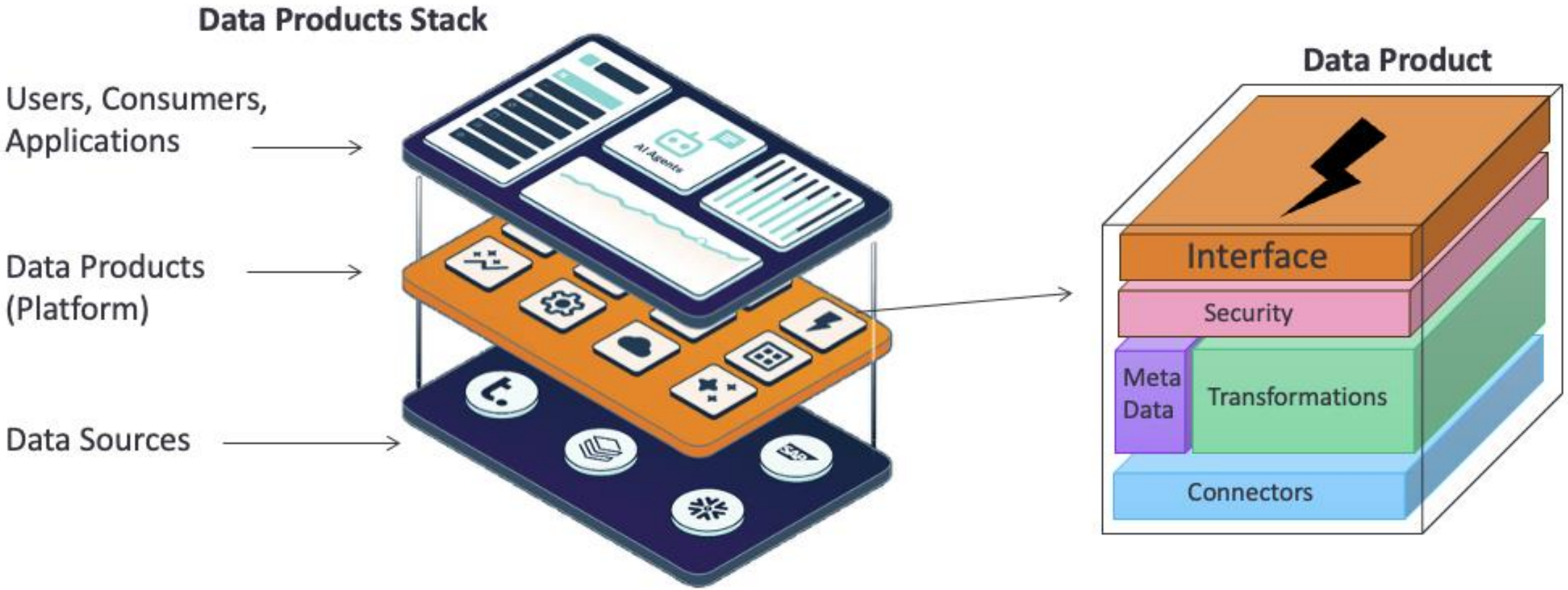
Related Concepts:

- Digital Twin
- Business Entity
- AI-Ready Data
- Data Fabric
- Data Product



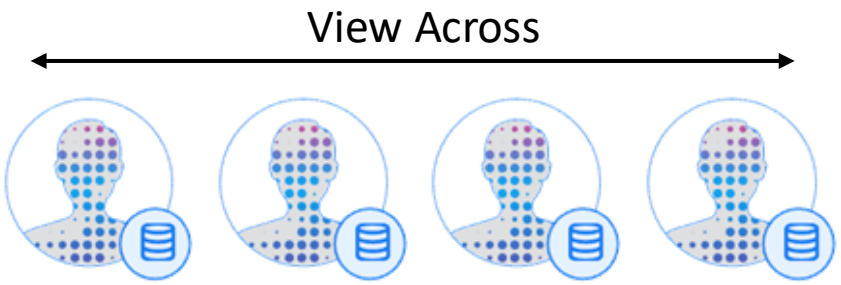
What is a Data Product?

- **Reusable** data asset
- Maintained as a "**software product**"
- Built-in security/privacy
- Leading to a **composable** data architecture



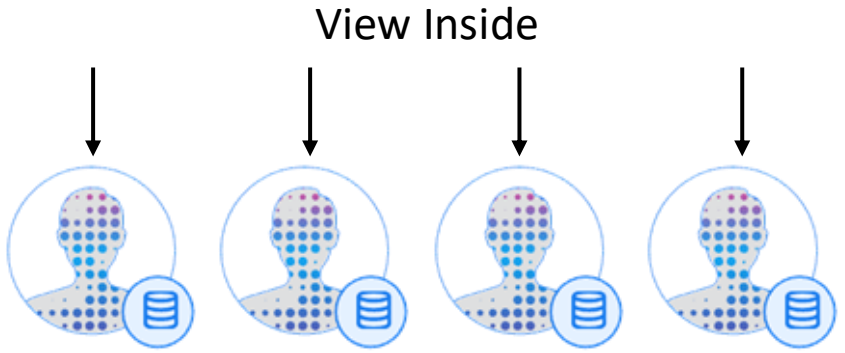
Types of Data Products

Analytical Data Products



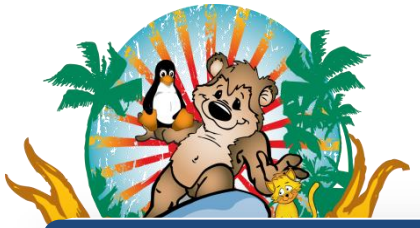
- Mostly used for internal “Decision Support”
- Aggregations, batch, read-only
- Examples:
  “What was yesterday’s revenue by region?”
  “Which customers are likely to churn?”

Operational Data Products



- Mostly used by upstream business applications
- Lookups, real-time, read-mostly, ACID
- Examples:
  “What is the average balance for customer123?”
  “What branch does she visit the most ”

Data Product Platform case-study – K2view



K2view: Agentic data products at scale

Media & Telco

vodafone · AT&T · altice · Cellcom · Mediacom · kpn · SKY · verizon · Telefónica · פלאפון · TELUS · entel · Thomson Reuters · ROGERS

Financial Services

charles SCHWAB · KeyBank · IGM Financial · Citizens Bank · TheStandard · BBVA · Sun Life · RHV · Leeds Building Society · globalpayments · REGIONS · ICBC · SEB · BOV Bank of Valletta

Retail

Walmart · TJX

Healthcare

Jazz Pharmaceuticals · CENTAURI HEALTH SOLUTIONS · SENTARA

Consulting and Staffing

Gartner · KFORCE

Manufacturing & Logistics, Oil & Gas

Hapag-Lloyd · slb · Holman

ISVs (OEMs), technology

amdocs · SAPIENS · OSG · MedAgentix

Technology At Scale

Gartner Magic Quadrant “Visionary” company

Tier 1 Bank	Tier 1 Telco	Tier 1 Insurance	Tier 1 Telco	Tier 1 Telco
350+	**15PB/Month**	**500,000+**	**300M+**	**<300ms**
Applications under TDM	Data product transactions (3,500/s)	Data elements in 1 data product	Micro-DBs deployed	Response time committed

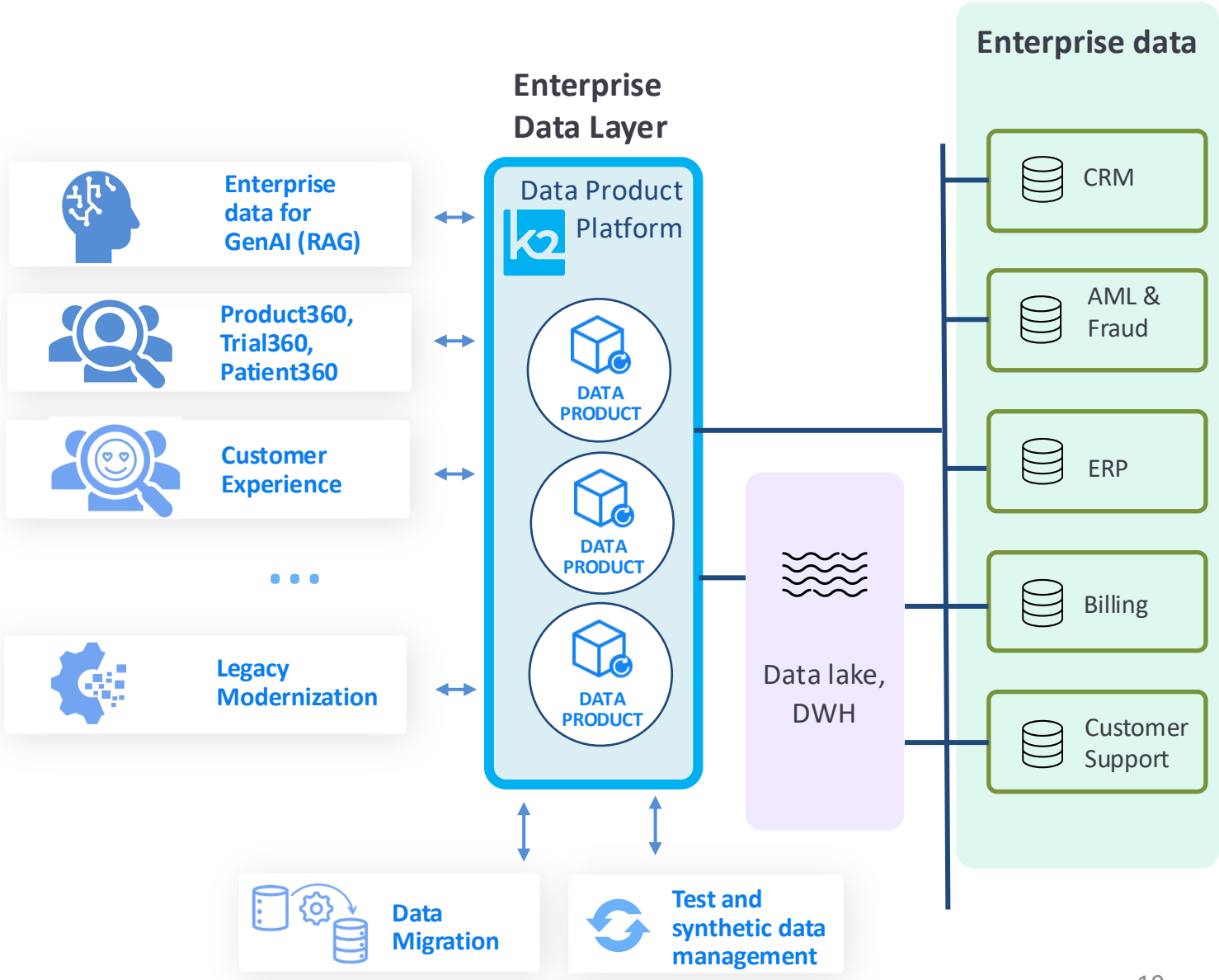
K2view Enterprise Data Product Platform

Non-functional Capabilities:

- Unlimited scale
- Real-time performance
- Fresh data

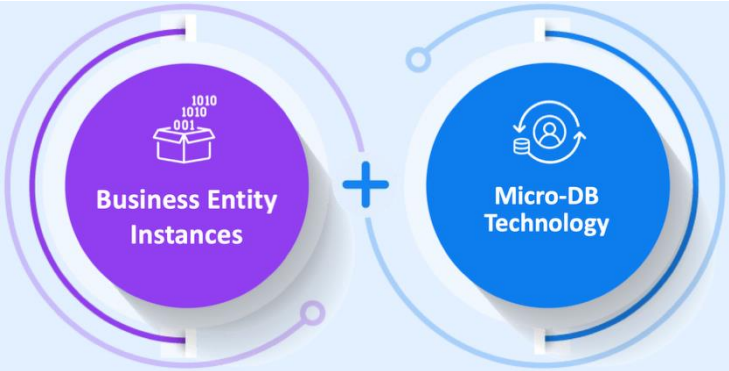
Functional Capabilities:

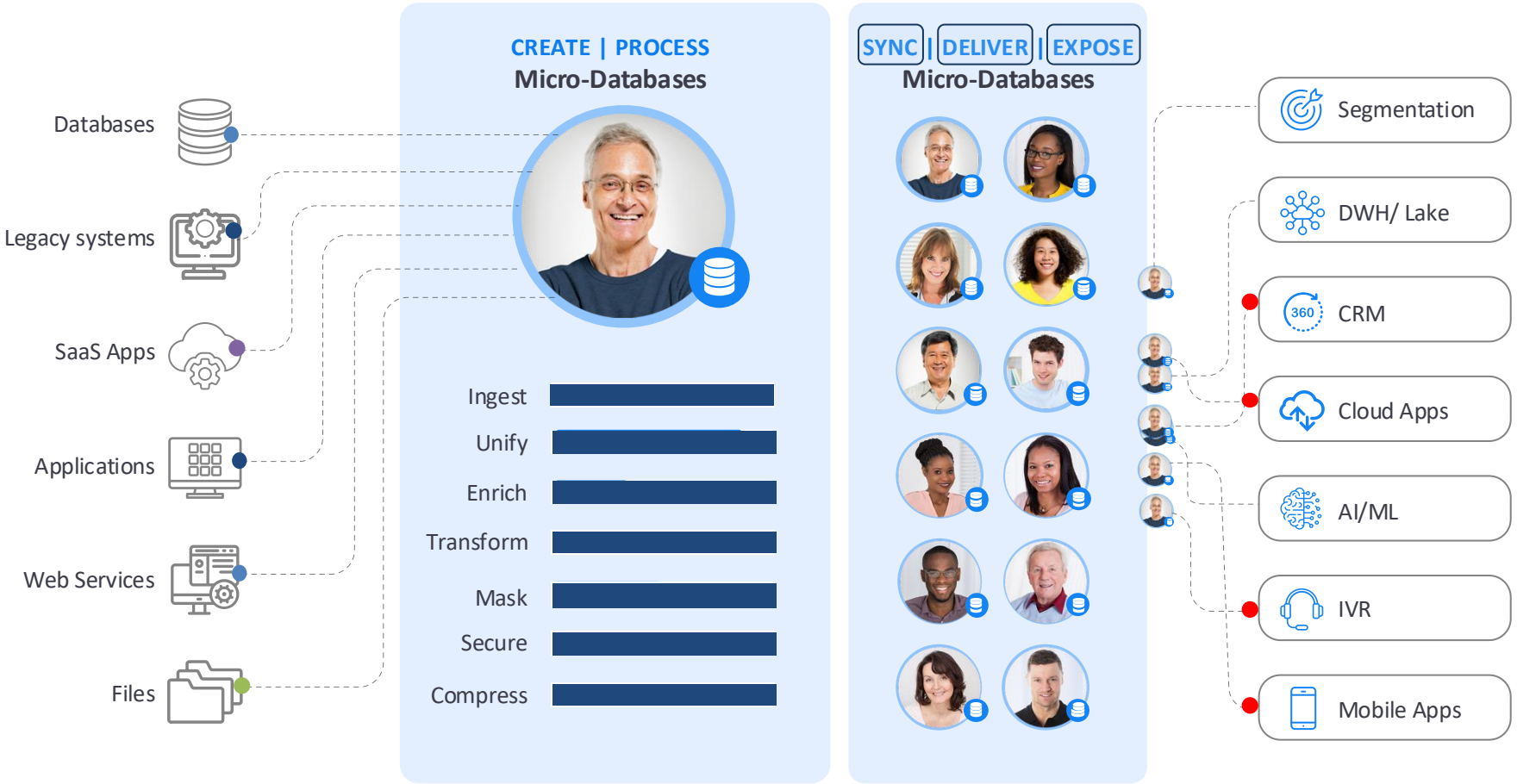
- Flexible Common Data Model
- Easily consumable
- Data Security and Privacy
- Portfolio of connectors
- Real-time ETL
- Memory/Caching/Virtualization
- Storage of cached data
- Flexible data synchronization
- Test Data Management



Our Secret Sauce: The Micro-DB ™

One Micro-DB for every business entity instance



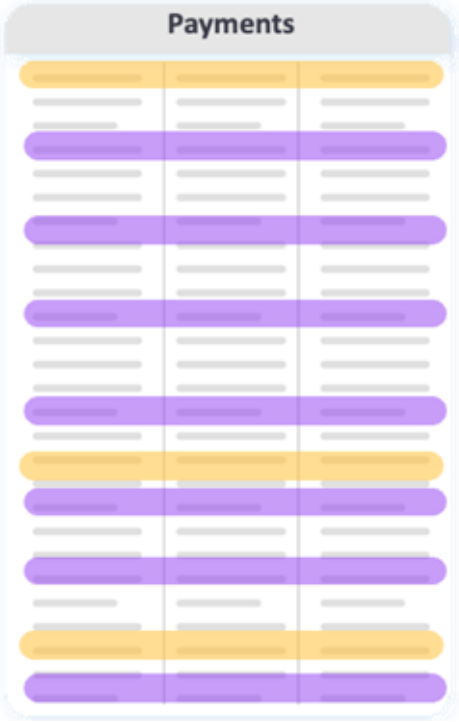


Instead of querying massive DBs with complex joins, and then unifying, processing, and masking the data in batch…

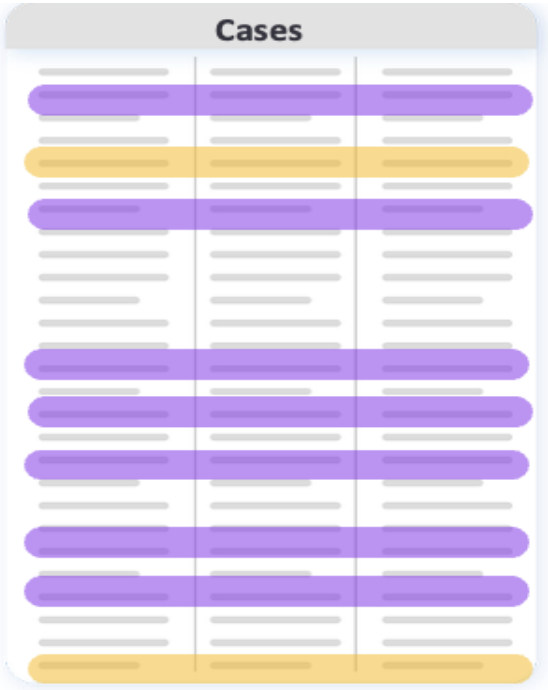
query a single Micro-DB that's always fresh, unified, and compliant, *in msec*

- Quicker time to value
- Greater trust in customer data
- Common language between business & IT
- Real-time performance
- Data governance enforced on the fly

Example - Accessing Customer Data Today



78
Payments

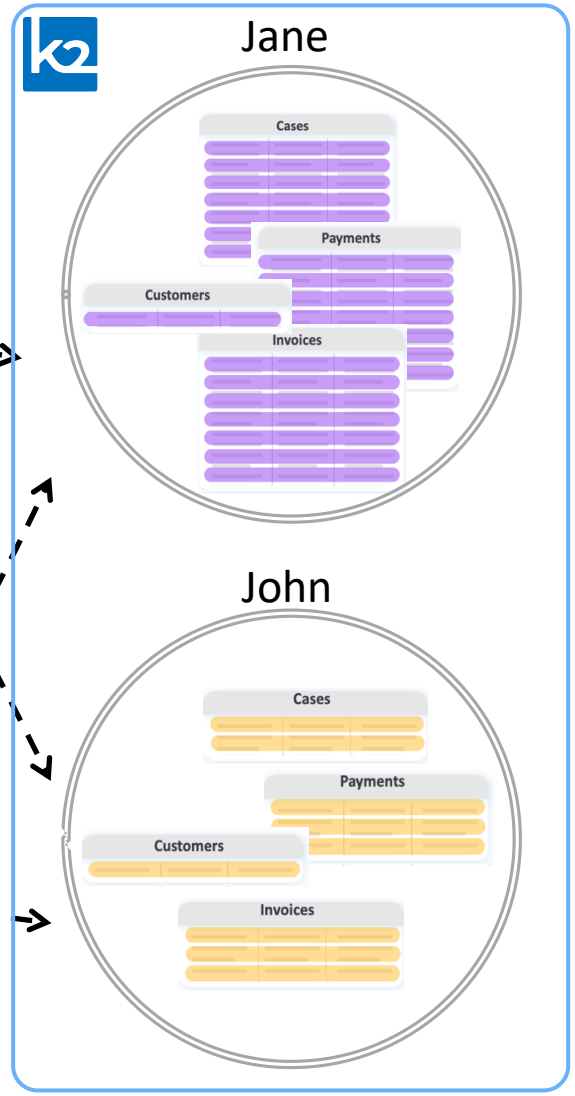


12
Cases

84
Invoices

Accessing Data with Business Entity Instances

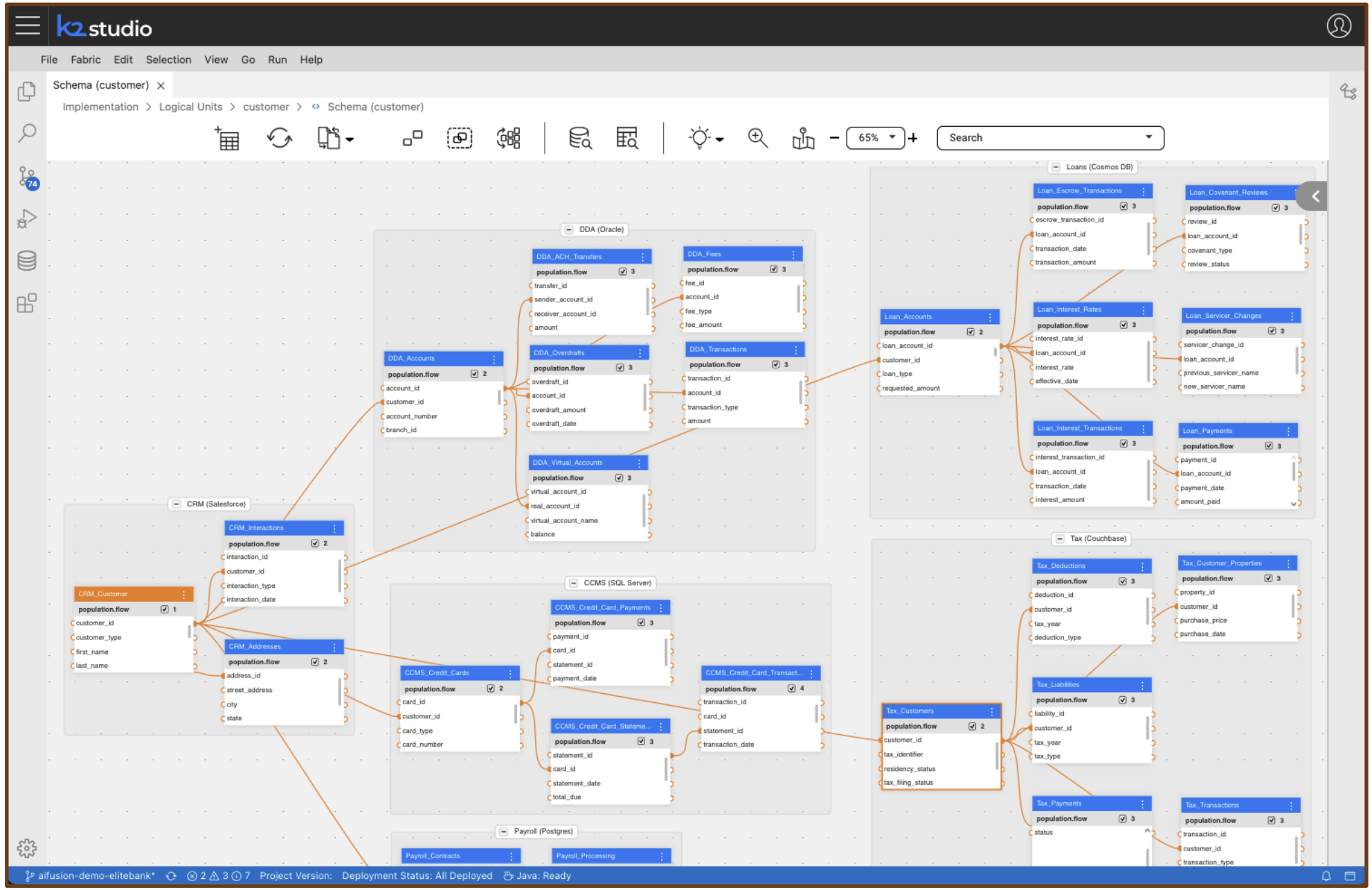
Systems of Record



Source of Truth

- **IT/Business alignment**
- **Real-time data access**
- **Hyper scale**
- **Data security**

Data Product Design Studio



Managing all data product lifecycle phases

2

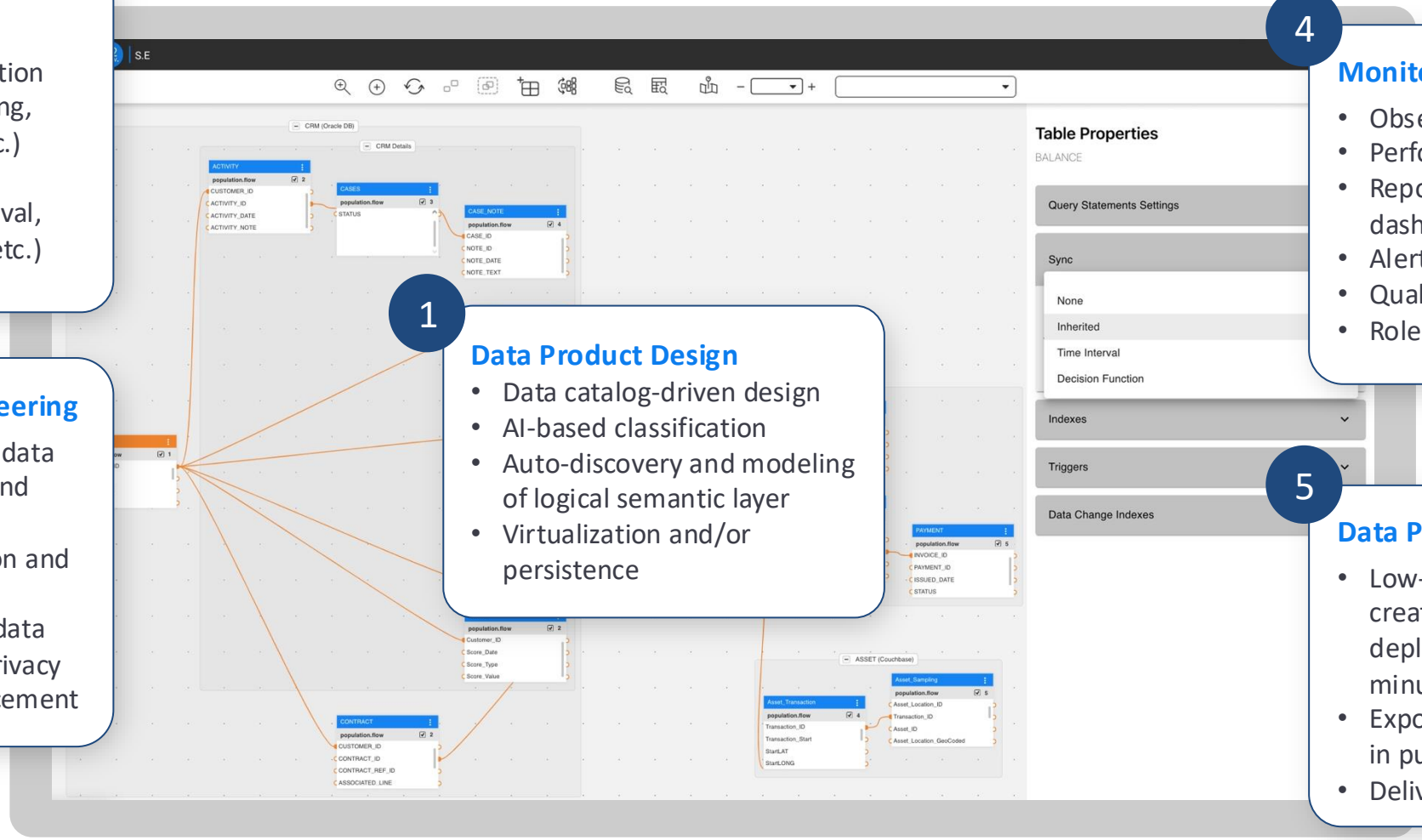
Data Integration

- Support all integration methods (Messaging, Streaming, CDC etc.)
- Apply smart synch policies (time interval, decision function etc.)

3

Data Product Engineering

- AI copilot-assisted data pipeline creation and documentation
- Data transformation and orchestration
- Data governance: data quality and data privacy policies and enforcement



1

Data Product Design

- Data catalog-driven design
- AI-based classification
- Auto-discovery and modeling of logical semantic layer
- Virtualization and/or persistence

4

Monitoring

- Observability
- Performance
- Reporting and dashboarding
- Alerting
- Quality assurance
- Role-based access controls

5

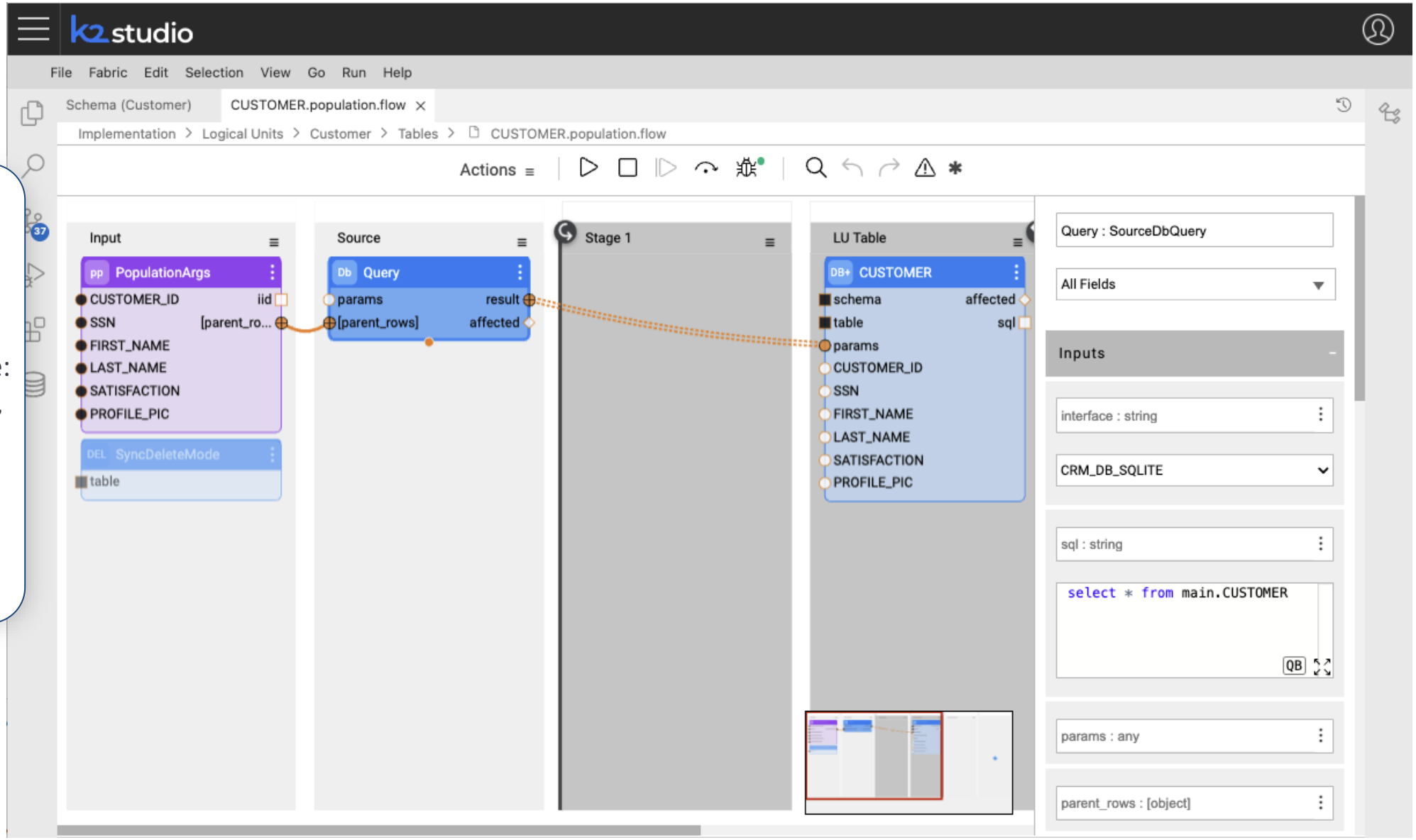
Data Product Delivery

- Low-code framework to create, debug, and deploy data services in minutes
- Expose and Deliver data in pull or push mode
- Deliver data in mSec

Lightweight ETL Engine

Design Studio

- Visual drag and drop
- Real-time
- Bi-directional
- Any type of data source: databases, files, events, applications, etc.
- Built-in data-level debugger
- Library of hundreds of pre-built components

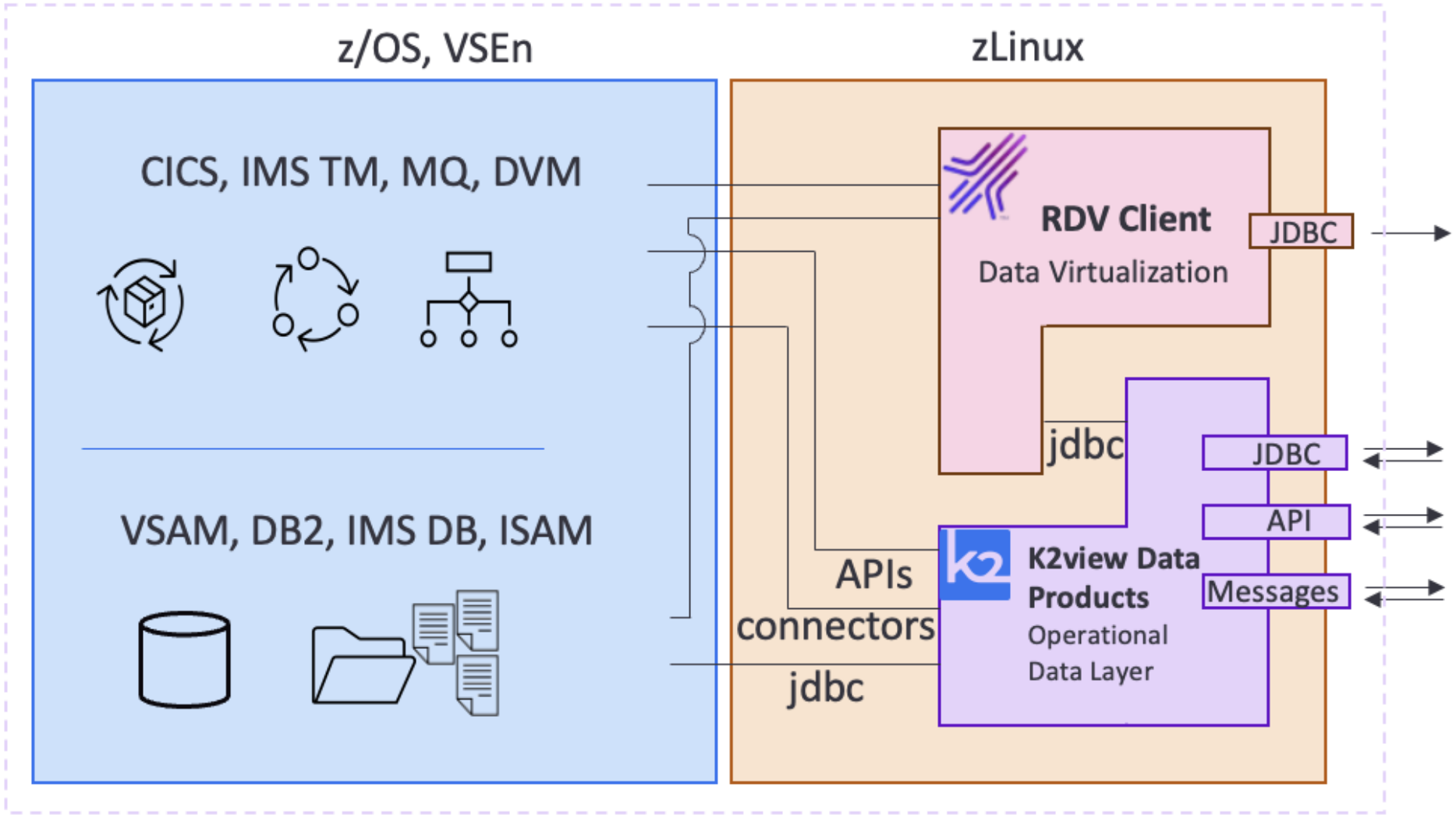


Operational Data Products on Mainframe

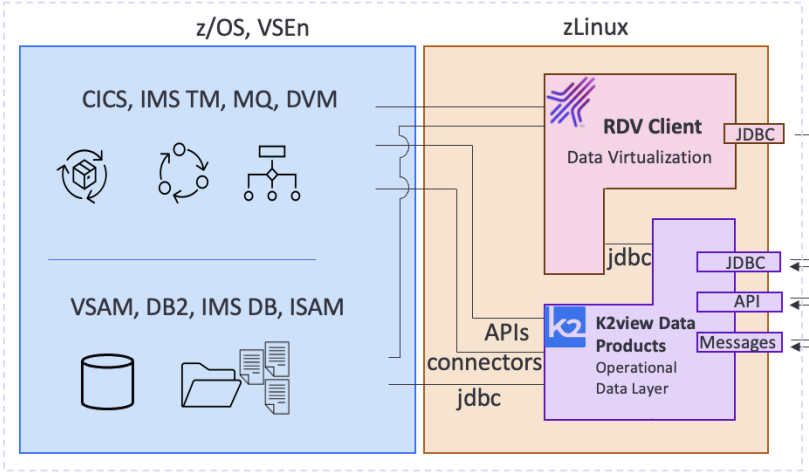
K2view Patterns on Mainframe

- **Data Products Platform**
  - Business-entity-centric view of data across multiple systems
  - Caching layer for real-time performance and hyper-scale
- **Data Products for Agentic AI**
  - Organizing enterprise data for optimal Agentic access
  - Unified semantics, CRUD for actions, data vaults for security
- **Test Data Management**
  - Data Masking and Synthetic Data Generation
  - Self-service, DevOps, security, multiple environments
- **Data Migration**
  - Upgrades – between versions and technologies
  - Modernization – Mainframe to distributed systems

K2view Data Products on Mainframe



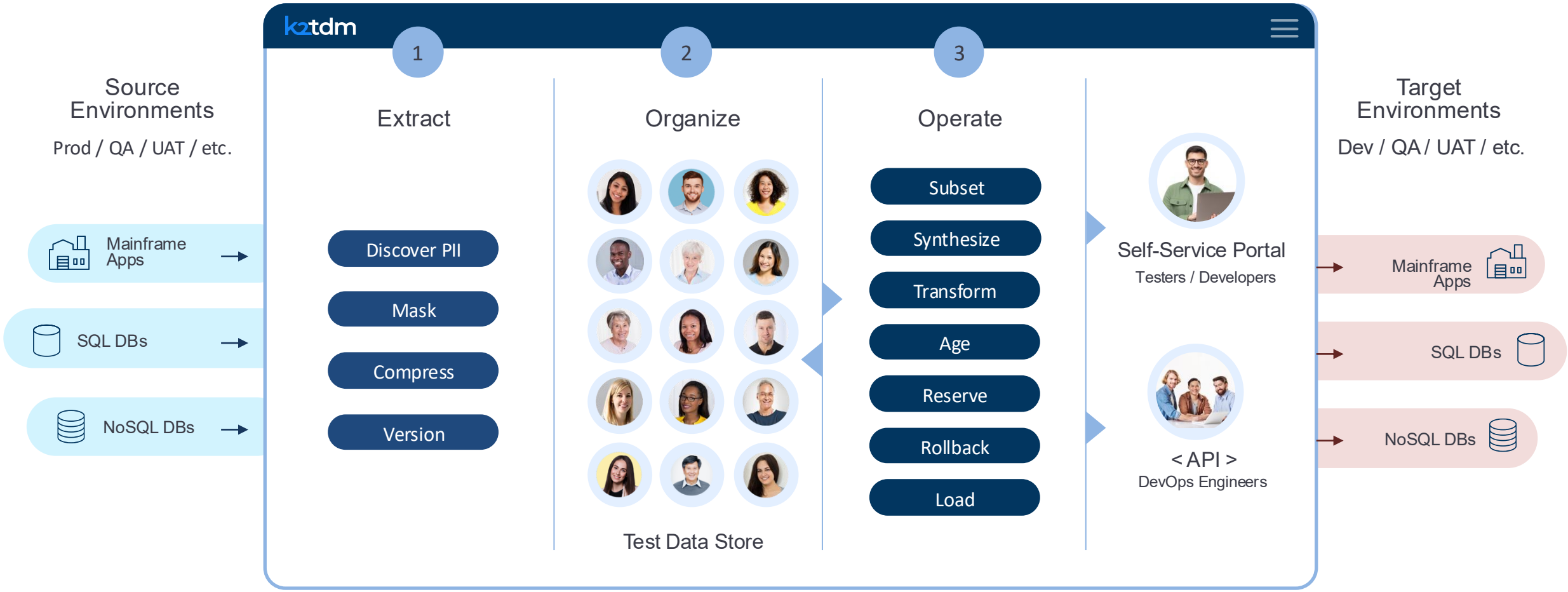
Transforming data access on Mainframe



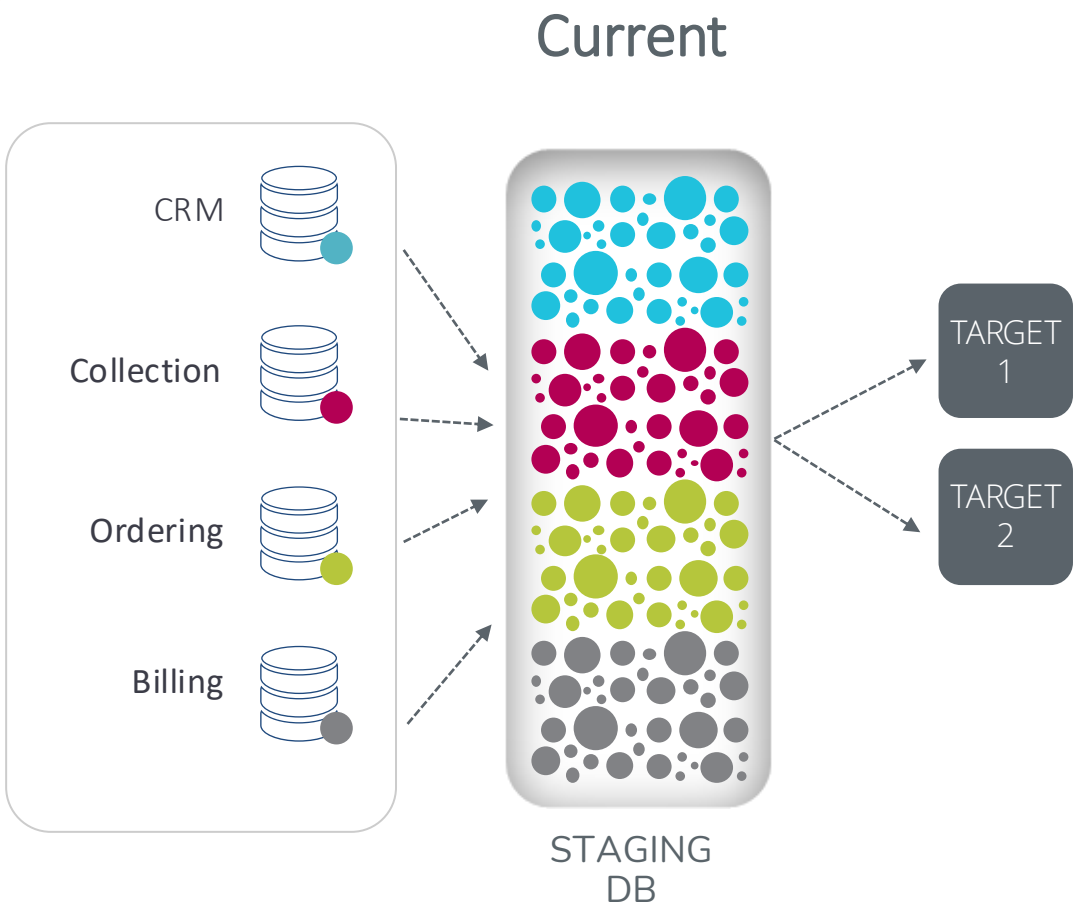
- **Execution inside the mainframe perimeter**
  - Security, reliability
- **Business-focused entity-centric design**
  - Understood by Agents and Business
- **Data organized for reuse**
  - Same entities utilized across many use-cases and technologies
  - Governed and secure

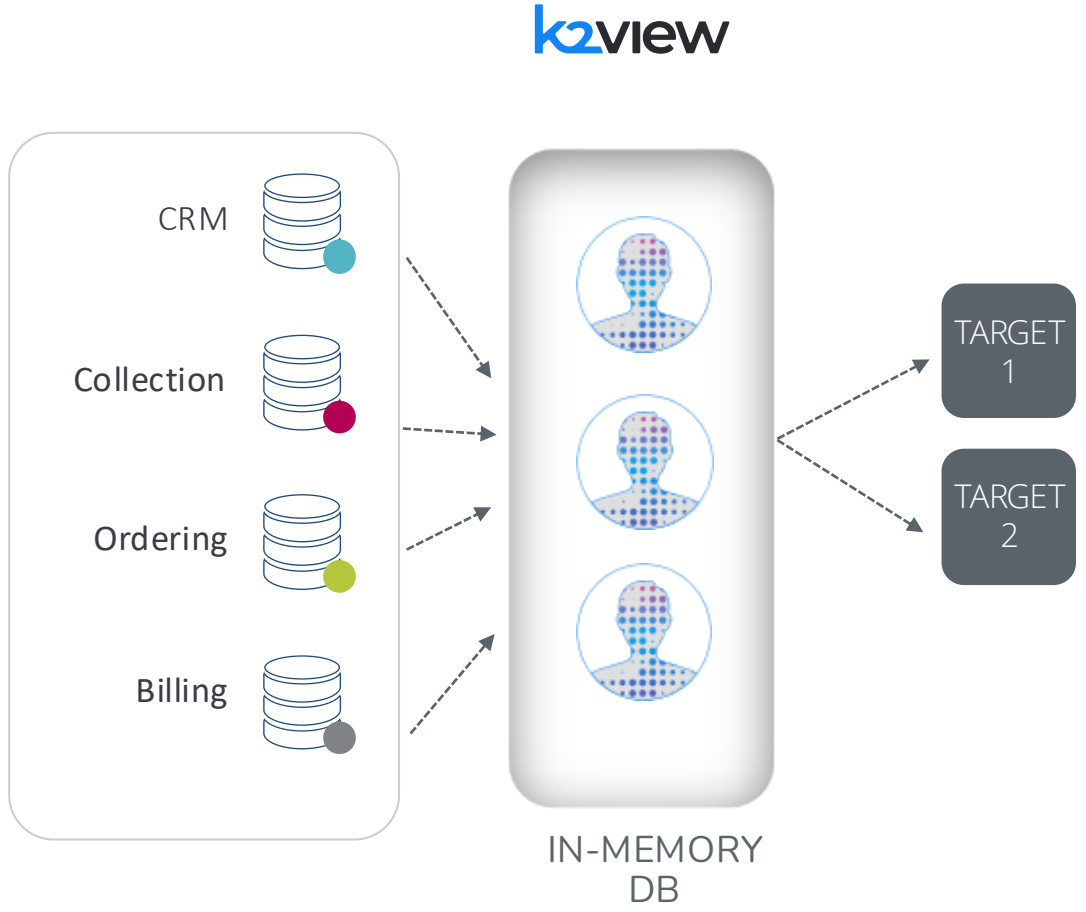
- **Modern, open, extensible architecture**
  - JDBC, APIs, MCP, Events
- **Caching and synchronization**
  - Offloading workloads from Systems of Record
  - Reducing MIPS spend

Test Data Management for Mainframe



Migration Approach Current -vs- K2view





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