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Strategy Mosaic:
Unifying Fragmented Data for Intelligent Enterprise Decisions

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Executive Summary

Enterprises today face a critical challenge: unifying fragmented data environments to power analytics and AI initiatives without costly infrastructure overhauls. Strategy Mosaic introduces a Universal Intelligence Layer: a vendor-neutral, AI-powered platform that harmonizes data access, governance, and performance across all tools and clouds. Unlike siloed solutions, Mosaic offers complete visibility and centralized control, empowering secure, compliant oversight for both humans and AI. By delivering consistent business definitions, accelerating insight generation, and ensuring robust security, Mosaic empowers organizations to transform complex data ecosystems into a unified, high-performance foundation.

Key Benefits:

- **Unified Data Definitions:** Consistent metrics across all tools and departments, eliminating confusion and boosting trust.
- **Business User Friendly**: Intuitive business objects (like Customer or Revenue) replace complex database tables, enabling users to access data without technical knowledge.
- **Rapid Insight Delivery:** AI-driven automation shrinks data modeling from weeks to minutes.
- **Cross-Cloud Flexibility:** Seamless integration across multi-cloud environments without re-architecture.
- **High-Performance Analytics:** In-memory caching and query optimization deliver sub-second responses.
- **AI Readiness:** Semantically rich, governed data fuels reliable AI and machine learning initiatives.
- **Data Visibility and Control**: Centralized oversight ensures compliance and governance.

With Strategy Mosaic, enterprises achieve agility, cost efficiency, and AI-powered innovation, positioning them as leaders in the analytics landscape.

The Modern Data Dilemma: Navigating Fragmented Enterprise Landscapes

Inconsistent and disconnected data landscapes pose critical challenges to scaling analytics and AI initiatives. Data silos create obstacles across teams, amplifying costs and inefficiencies while undermining strategic decision-making.

Common Challenges Faced by Enterprises:

1. **Disjointed Ecosystems:** Teams struggle to integrate legacy systems, cloud platforms, and disparate tools, slowing productivity and inflating costs.
2. **Inconsistent Business Metrics:** Varying definitions for key metrics (e.g., "revenue" or "profit") limit trust in analytics outputs.
3. **Security Fragmentation:** Siloed security measures increase compliance risks and prevent centralized governance.
4. **Vendor Lock-In:** Dependence on specific platforms inhibits flexibility and drives higher costs for enterprises seeking scalable solutions.

These barriers prevent teams from leveraging analytics for value creation and stop businesses from adopting transformative AI initiatives.

Evaluating Your Options: Approaches to Data Integration Challenges

Organizations facing these data challenges have several potential paths forward, each with distinct trade-offs in terms of implementation complexity, time-to-value, and long-term flexibility. Understanding these alternatives is crucial for making informed strategic decisions about your data architecture.

While many organizations initially consider these traditional approaches, each comes with limitations that may impact your ability to achieve a truly unified, agile data ecosystem:

Approach	Limitations	Mosaic Advantage
BI Tools	Siloed metrics, data duplication, limited logic reusability.	Consistent semantic layer, ensures single source of truth; open tool access for all preferred BI and productivity tools.
Virtualization	Often complex to manage, performance challenges for complex queries, can be SQL-centric	Abstracted business logic with AI-guided modeling, intelligent caching, and dynamic query optimization for high performance.
Data Warehouses	High cost (compute/storage), vendor lock-in, requires extensive data movement (ETL).	Live query and intelligent caching over existing sources; vendor-neutral, reducing data movement and ETL dependency.
Standalone Semantic Layers	Often lack deep, native AI capabilities and a high-powered, integrated analytics engine.	High-powered in-memory analytics engine for speed and scale, delivering truly deep, native AI integration across the platform.

This white paper argues that Strategy Mosaic represents the optimal solution to these enterprise data challenges—offering a Universal Intelligence Layer that provides semantic richness, performance optimization, and vendor independence without requiring data centralization or creating new technical dependencies.

Mosaic's Solution: A Universal Intelligence Layer

Strategy Mosaic solves enterprise data challenges through its Universal Intelligence Layer—an intelligent abstraction that bridges the gap between complex data sources and business users. This vendor-neutral platform delivers immediate value while protecting your existing technology investments through four key capabilities:

- AI, Agents, 3rd Party Apps
- Universal Intelligence Layer
- Containerized, Multi-cloud platform
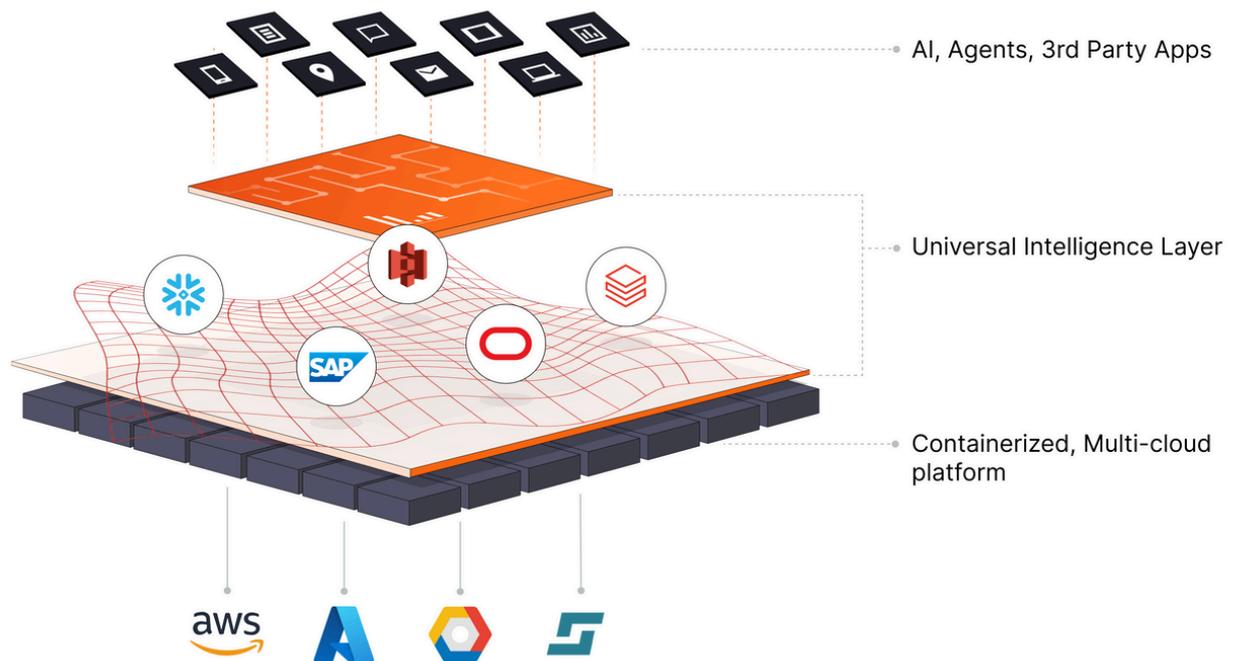
- **Universal Semantic Layer:** Simplify complexity with a dedicated layer that standardizes raw data into a consistent, universally understood language. Seamlessly integrate data across tools and clouds—a capability refined over decades of successful, large-scale implementation in mission-critical environments for Fortune 500 companies.

- **Transparent, Predictable Pricing:** Leverage a straightforward, seat-based pricing model that avoids the hidden fees common in consumption-based cloud solutions.

- **AI-Driven Efficiency:** Use the power of AI to accelerate data initiatives by reducing modeling time from weeks to minutes. Create a single source of truth with consistent metrics, empowering teams to act on insights faster.

- **Vendor Independence and Agility:** Eliminate the risk of vendor lock-in. Mosaic's portable architecture enables effortless transitions between databases or cloud providers without costly re-architecture, so your business retains ownership of its data ecosystem.

Customer Success Story: Vuori

Vuori's implementation of Strategy's semantic layer technology, which Mosaic is built upon, delivered these transformative results:

- Single source of truth for all metrics
- Faster executive reporting cycles
- AI-powered drill-downs for analysts

Himanshu Shekhar
VP Planning & Analytics, Vuori

" We implemented Strategy to enable our business leaders and analysts to become more self-serving, rooted in a single version of truth."

# Critical Capabilities for an Effective Solution

To evaluate the effectiveness of any solution in this space, organizations should prioritize key capabilities that directly address operational inefficiencies, data governance challenges, and barriers to analytics and AI success. Below, we outline the fundamental Critical Capabilities required for an effective solution to modern enterprise data challenges:

Unified Business Definitions

A robust semantic layer is vital for ensuring that all enterprise data is governed by consistent business definitions and metrics. This layer should comprehensively encapsulate key elements such as measures, dimensions, attributes, facts, relationships, hierarchies, and standard and non-aggregable metrics. By effectively abstracting the underlying data complexities, the solution enables advanced analytical capabilities without necessitating extensive data literacy from users.

Cross-Platform Compatibility

The solution must provide comprehensive portability across multiple cloud environments, connectivity to a diverse array of data sources, and find insights through preferred BI tools. For example, a sales manager wants to include forecast data available in Salesforce alongside actual sales data from Snowflake in Power BI. This ability to connect, query, and join data across sources allows for flexible, comprehensive, and integrated reporting solutions without the need to centralize all your data into one dedicated source. By decoupling business semantics and security from the underlying data storage and consumption architecture, organizations can achieve seamless transitions between environments without incurring the high costs associated with re-architecting systems. This flexibility significantly accelerates organization-wide adoption and extends the value of both existing BI investments and the semantic layer itself.
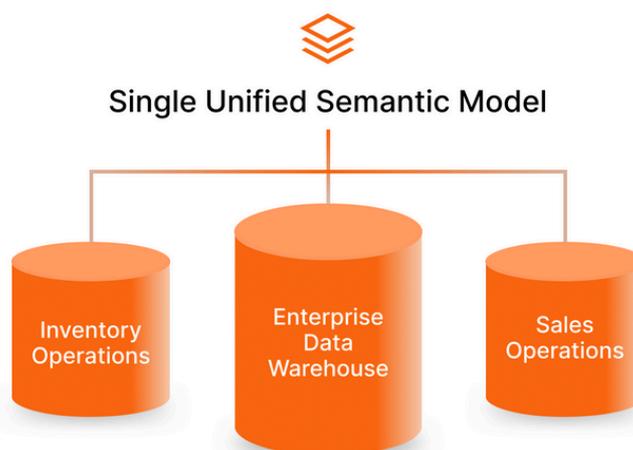
Scalable Performance

A high-performance in-memory calculation engine is imperative for effective push-down processing and cross-data source calculations. This engine should offer accelerated response times, particularly when interfacing with legacy or slower databases. Additionally, it must possess the capability to offload demanding queries and optimize computing costs from underlying data warehouses, ultimately enhancing overall system performance.

Comprehensive Governance

A centralized security framework is essential to ensure consistent enforcement of governance policies across all access points. This framework should feature robust functionalities such as Security Filters, Object Level Access Control (ACLs), and Granular User Privileges. Furthermore, it should enable management of user groups and role-oriented permissions, along with flexible authentication protocols to safeguard sensitive information, particularly in the context of interactions with large language models (LLMs).
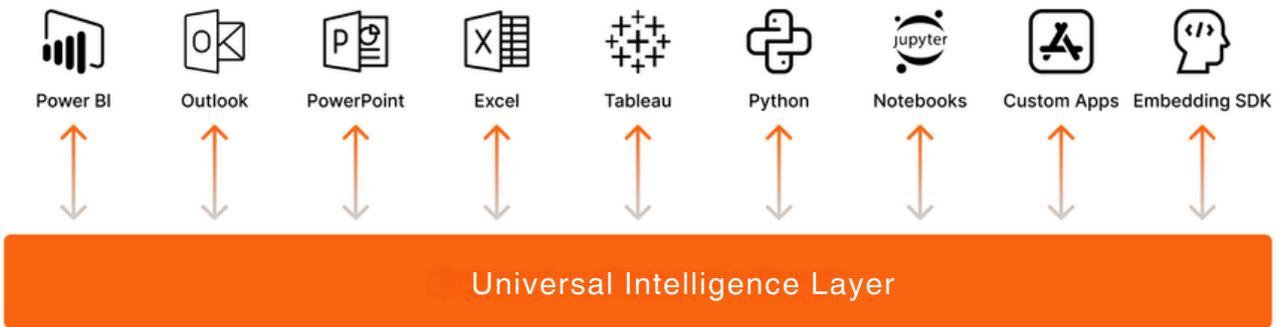
AI-Readiness

An effective solution must deliver semantically enriched, well-governed data that AI systems can readily consume and trust. It should automate modeling and semantic definition tasks while implementing robust protections that prevent sensitive information from being exposed to underlying large language models. By providing rich contextual metadata and consistent business definitions, the solution significantly improves AI accuracy and reliability, transforming generic AI into business-specific intelligence that understands your organization's unique data landscape. This foundation enables enterprises to deploy AI solutions that deliver accurate, compliant results across a wide range of AI initiatives.
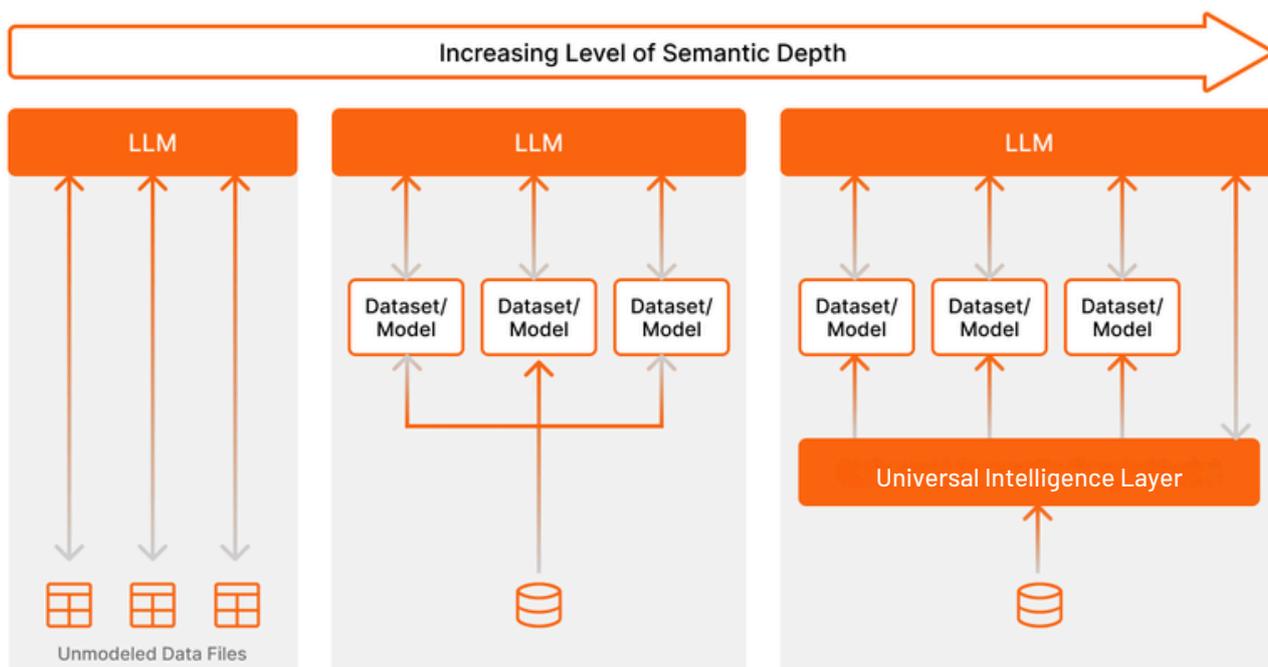
Self-Service Capabilities

Empowering business users through self-service analytics is critical for modern organizations. The solution should facilitate increased accessibility to data and provide intuitive interfaces and leveraging the tools users already utilize regularly, integrating with a wide array of popular applications and platforms. Features such as AI-powered modeling and natural language querying streamline complex tasks, making insight generation more accessible for users with varied levels of data expertise, thereby fostering collaborative environments directly within their preferred tools.

Power BI | Outlook | PowerPoint | Excel | Tableau | Python | Notebooks | Custom Apps | Embedding SDK

Universal Intelligence Layer

Portability

The universal intelligence layer must maintain the ability to transfer business logic, security protocols, and configurations across various environments effortlessly. This capability ensures that as organizations adopt new applications, migrate to different cloud providers, or adjust business models, they can retain their established business rules and security measures without the need for costly and time-consuming adaptations.

Cost Optimization

An effective solution should deliver substantial cost savings through improved operational efficiencies and a diminished reliance on extensive additional data infrastructures. Key strategies include minimizing ETL processes by enabling direct queries across data sources, optimizing overall query costs through in-memory processing, and avoiding vendor lock-in to capitalize on cost arbitrage opportunities among diverse databases and cloud providers.

Why Choose a Robust Universal Intelligence Layer

Adopting a robust Universal Intelligence Layer, like Strategy Mosaic, provides key benefits that address common challenges faced by organizations today. Here's why it's a strategic investment for analytics leaders:

Streamlined Data Management and Standardization

By utilizing a unified solution, a Universal Intelligence Layer simplifies the data ecosystem. It reduces the dependency on siloed data warehouses, enabling leveraging existing business logic across various departments. This approach maximizes value and consistency, allowing data teams to focus on delivering insights rather than managing disparate data sources.

Agility in Adapting to Technological Changes

The design of the Universal Intelligence Layer decouples business logic and security from specific data storage technologies. This flexibility allows organizations to respond quickly to market shifts, switch between cloud providers, or integrate new data sources without extensive re-architecting costs. Such agility prevents vendor lock-in and preserves your strategic investments in data infrastructure.

Accelerate Insight Generation

With AI-driven capabilities, a Universal Intelligence Layer significantly reduces the time required for data modeling and preparation—from weeks to mere minutes. This rapid process enables analytics teams to deliver timely, actionable insights to business leaders, fostering a culture of informed decision-making and innovation.

Comprehensive and Consistent Governance

Centralizing security and governance through the Universal Intelligence Layer ensures that data security is maintained across all access points. This consistency reduces the risk of vulnerabilities arising from disparate security measures, aligning with compliance requirements and protecting sensitive information effectively.

Enhanced AI and Machine Learning Enablement

The Universal Intelligence Layer provides clean, context-rich data that empowers AI/ML initiatives. By ensuring that data is semantically rich and well-governed, organizations can leverage advanced analytics capabilities that provide more accurate and relevant results. This positions businesses to take full advantage of AI-driven insights.

Cost Efficiency and Lower Total Cost of Ownership

Investing in a robust Universal Intelligence Layer significantly reduces operational costs through enhanced efficiencies. With less reliance on traditional infrastructures, organizations can decrease their ETL processes, optimize query costs, and make better use of in-memory processing. Moreover, the solution's flexibility guards against vendor lock-in, enabling organizations to capitalize on cost-effective data strategies.

Complete Visibility and Unified Control

As enterprises accelerate AI adoption, understanding not just where data resides but how it's accessed by both people and machines is crucial. Mosaic is uniquely equipped to surface this essential end-to-end visibility, enabling organizations to monitor, audit, and control their data environment. This holistic oversight ensures compliance, manages risk, and builds trust in AI operations—capabilities beyond what traditional tools can offer.
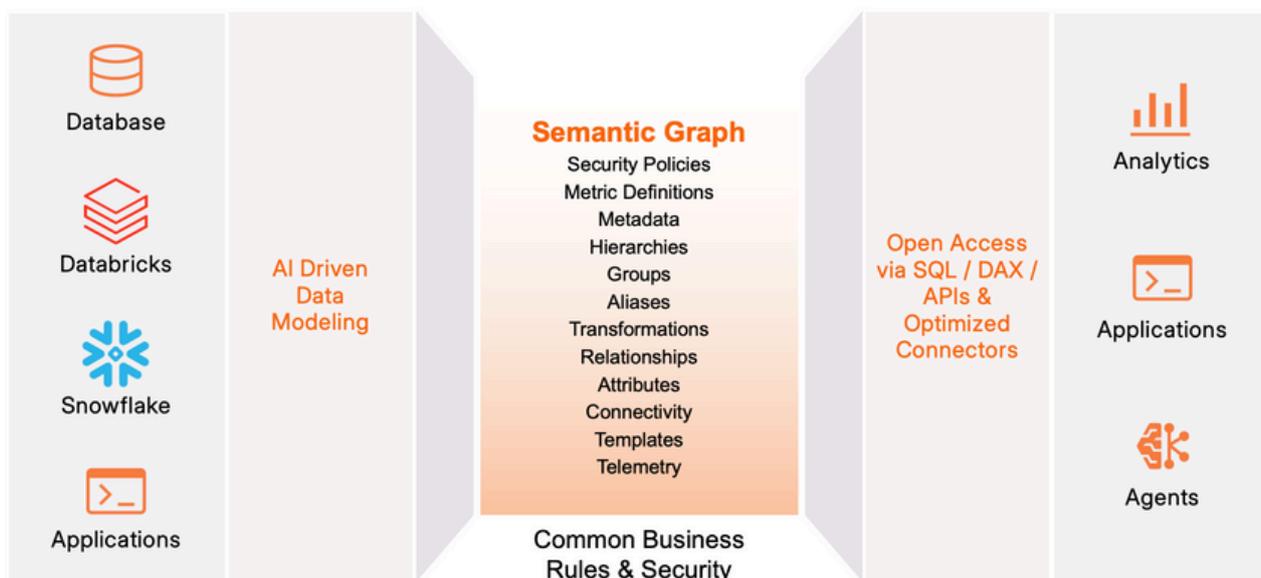
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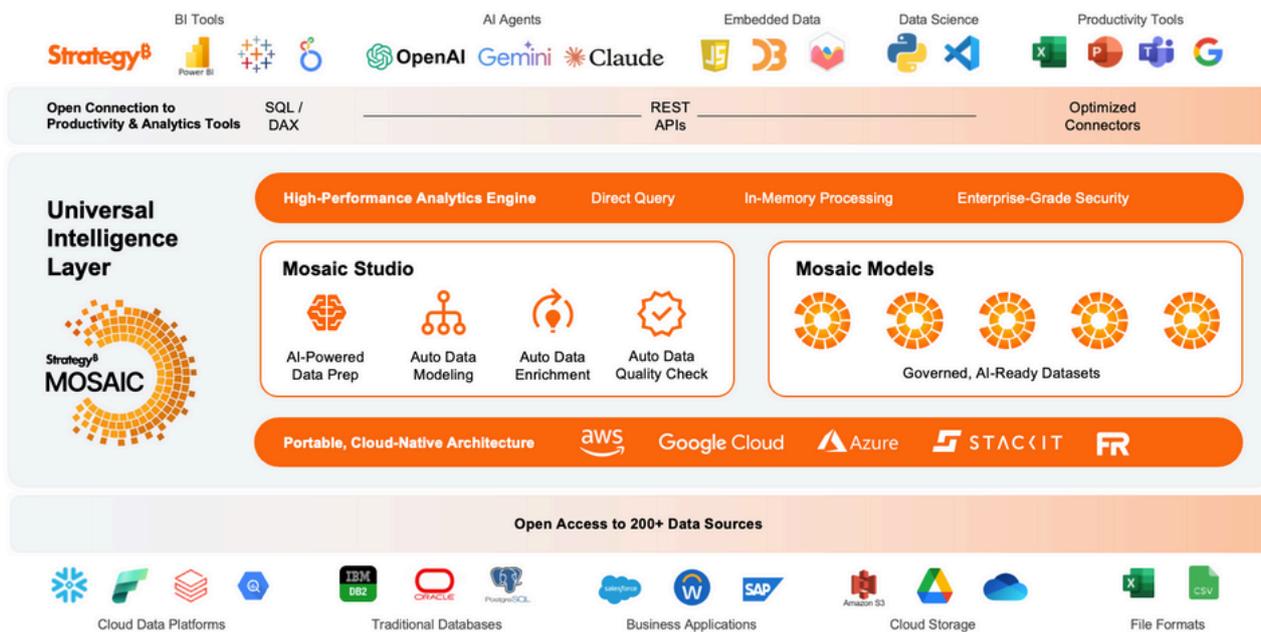
The Semantic Layer Architecture: Foundation for Universal Business Intelligence

Strategy Mosaic features a rich semantic layer that goes beyond basic data models to provide a comprehensive, business-friendly understanding of an organization's data.

- **What makes a true semantic layer vs. basic data models:** Unlike basic data catalogs or data virtualization tools that primarily expose databases as another database or simply catalog underlying tables, Strategy Mosaic allows analysts and architects to define consistent business definitions and a security model within its layer. It transforms technical data connectivity into business-friendly objects and definitions. While some vendors have semantic layers, these are often not universal, being tied to specific databases or applications. Strategy Mosaic, in contrast, aims to be a universal intelligence layer, decoupling business semantics and security from the underlying data storage.

- **Business-friendly objects and definitions:** The semantic layer provides consistent business definitions and metrics across various data sources. This allows business users to perform sophisticated analytics without needing to understand the complexity of the underlying data. It encapsulates critical measures like Revenue and Profit, supports non-aggregable measures like Inventory and Headcount, and includes sophisticated definitions for key business entities.

- **How Mosaic handles relationships and hierarchies:** Mosaic's AI engine automatically creates relationships between data tables and generates hierarchies based on the information schema, saving valuable time and effort.

- **Metrics definitions and calculation engine:** Metrics are automatically created with aggregation functions already applied. Mosaic also enables the creation of metrics using natural language prompts. Its powerful in-memory calculation engine allows cross-data source calculations and ensures consistent calculations across all connected data sources, even when data is distributed. This engine ensures that regardless of the tool used (Tableau, Excel, or AI via SQL), the same trustworthy answer is provided for metrics like "revenue" or "inventory".

- **Metadata management capabilities:** Mosaic models include metadata, such as column descriptions automatically generated using AI, which helps accelerate use by AI applications. Data catalogs, on the other hand, primarily catalog existing metadata and lineage but do not define semantic models.

AI for Data Experts: Expedite Workflows with Mosaic Studio

Strategy Mosaic Studio is an advanced AI-orchestrated modeling environment architected to programmatically accelerate semantic layer development through a microservices-based design pattern.

- **AI Service architecture:** Mosaic Studio implements a microservices-based design pattern with dedicated AI, Modeling, Data, and Compute services working in concert. The AI Service executes LLM-based modeling operations via parameterized APIs, implements multi-step reasoning chains, and dynamically generates contextual prompts for model optimization.

- **Advanced modeling automation capabilities:** The platform conducts comprehensive analysis of source metadata and sample datasets through automated statistical profiling. This intelligence identifies entities, determines semantics, maps relationships, and defines business metrics—enabling rapid deployment of production-ready semantic models. Results include 87% faster time-to-first model and 10x throughput improvement compared to traditional methodologies.

- **Data relationship detection system:** Mosaic Studio uncovers data relationships by analyzing metadata patterns, identifying key connections, and evaluating column semantics. The system assigns confidence scores to potential relationships, automatically implementing high-confidence connections while flagging others for human review, with validation against live data to ensure accuracy.

- **ETL-free data preparation:** The preparation engine proactively identifies and addresses quality issues, including missing values, inconsistent formatting (such as trailing/leading spaces), duplicate entries, and normalization problems—all without requiring traditional ETL processes.

Built for AI Applications: Semantic Richness for AI

Strategy Mosaic is designed with AI at its core, both to accelerate model building and to power the next generation of AI applications by providing rich semantic context and trusted data.
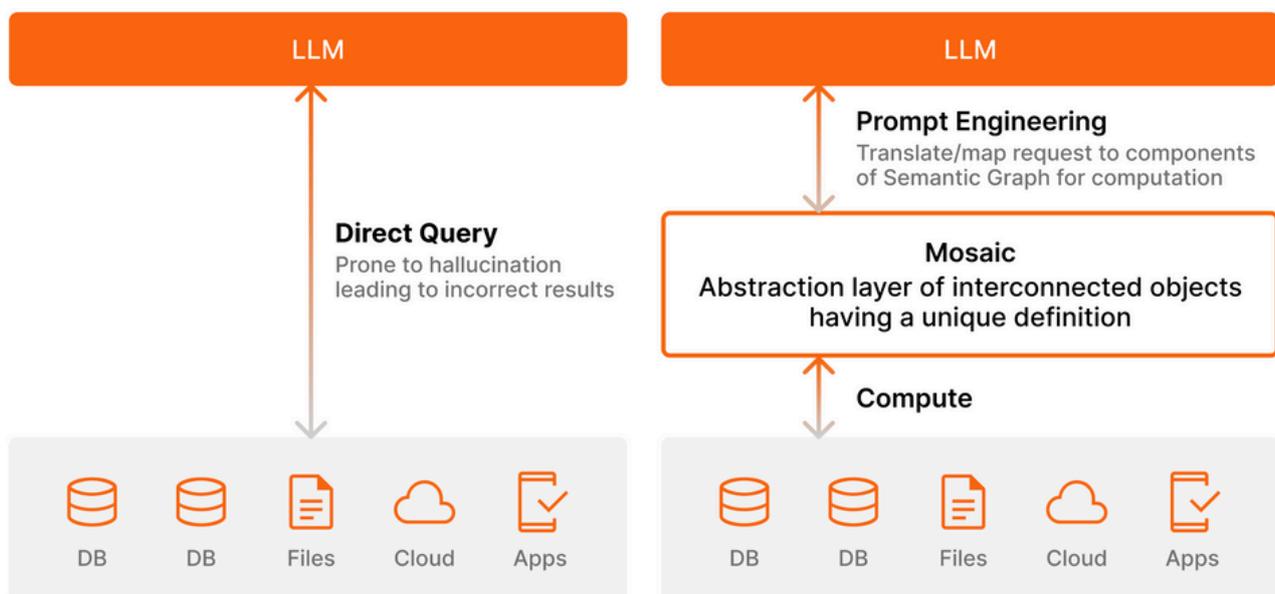
- **Semantic layer architecture for AI reliability:** Mosaic implements a universal intelligence layer that serves as an abstraction layer of interconnected objects with unique definitions. This architecture provides structured knowledge representation that significantly reduces hallucination risks common in direct LLM-to-database queries. The system's universal intellayer creates a computational framework that enforces business rule consistency across all AI interactions.

- **Secure metadata utilization for AI-powered features:** Mosaic's secure architecture protects sensitive data from exposure to LLMS by only sharing metadata, object names, data types, and minimal sample data, never your full dataset. This limited information powers AI features like auto-generated attributes, modeling suggestions, advanced metrics (Auto Metric), and logical views (Auto SQL) while maintaining data privacy. The platform exposes semantic models through standard interfaces (SQL, REST, Python) with robust governance controls preventing unauthorized access during AI processing.

- **Enterprise-grade AI data governance:** Mosaic's architecture implements comprehensive data quality controls essential for reliable AI consumption, including automated metadata enrichment, relationship validation, and semantic consistency enforcement. The platform provides built-in lineage tracking for AI-generated insights, enabling full auditability of how AI systems derive their conclusions.

Multi-Cloud Architecture: Agility and Portability

Strategy Mosaic provides agility and portability through its multi-cloud architecture, ensuring flexibility and cost optimization for enterprises.

- **Deployment options across cloud providers:** Mosaic is designed to run on any cloud, including AWS, Azure, GCP, and others like StackIT. This provides complete cloud openness and portability at the cloud level.

- **Migration capabilities between environments:** By decoupling business semantics and security from the data storage, Mosaic allows customers to move between database vendors or cloud providers without the costly and time-consuming process of rebuilding downstream applications or remodeling the semantic layer. This offers significant agility and future-proofs data strategy.

- **Hybrid cloud support:** Mosaic works across both on-premises and various cloud environments.

- **Performance optimization by cloud platform:** While Mosaic runs on any cloud, its in-memory engine and query acceleration capabilities optimize performance when working across multiple data sources, rather than optimizing for specific cloud platforms. It enhances query speeds, especially when querying older or slower underlying databases.

- **Cost management across cloud environments:** Mosaic helps manage and reduce egress charges from cloud databases by leveraging data live or cached, minimizing the number of times data is fetched from the source. It provides "cost arbitrage" by allowing movement between cheaper database vendors and using different data systems optimized for specific scenarios.

# Universal Data Connectivity and Performance Optimization

Strategy Mosaic offers extensive data connectivity to unify diverse data sources, coupled with performance optimization and data freshness capabilities.
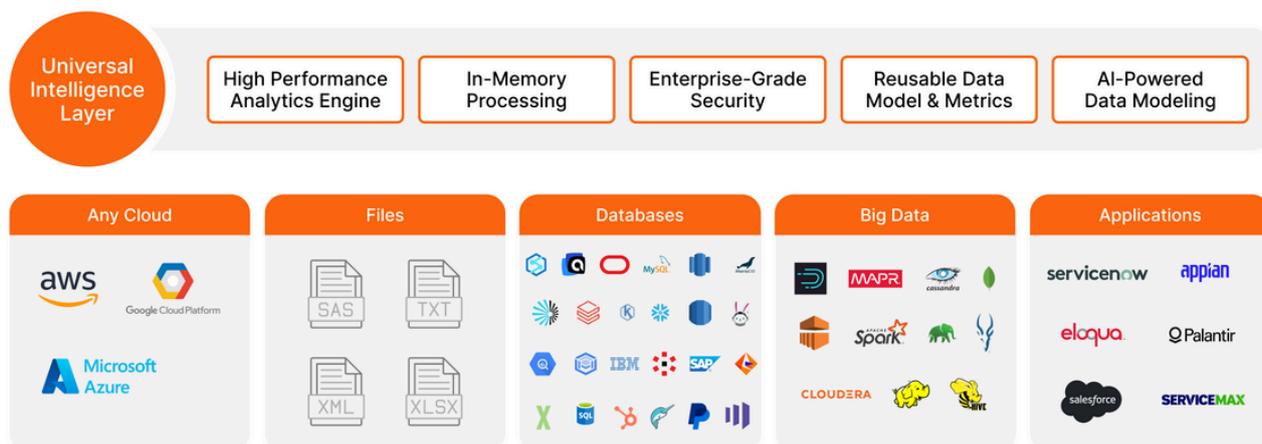
- **Comprehensive data source access:** Through its Universal Access Service, Mosaic exposes data from over 200+ underlying data sources as unified, semantically enriched tables. This allows users to seamlessly query across cloud databases, on-premises systems, files, and applications without needing to understand the technical complexities of each source system. The platform's intelligent query routing ensures optimal performance regardless of where the source data resides.

- **Universal Access Service architecture:** Mosaic implements a multi-tier connectivity framework with a Universal Access Service that provides abstraction layers for parsing, analysis, planning, and optimization of queries. The system's query compiler transforms incoming requests through multi-phase optimization before distributing execution across data sources, with intelligent compute placement decisions based on source capabilities.

- **Hybrid execution model:** Mosaic employs a sophisticated hybrid execution engine capable of dynamically determining optimal query execution strategies between direct passthrough and in-memory processing. The system maintains a distributed metadata repository of source capabilities to inform intelligent routing decisions, enabling cross-source joins without data duplication or centralization.

- **Intelligent caching subsystem:** The platform implements a multi-level caching architecture with semantic-aware data partitioning. Cached datasets are exposed as tables with version control, implementing intelligent temporal coherency protocols and delta-based refresh mechanisms. The caching subsystem features configurable freshness policies with time-based, event-based, and hybrid invalidation strategies to balance performance with data currency requirements.

- **Query optimization and acceleration:** The query acceleration engine employs a cost-based optimizer that considers data distribution statistics, network latency, and source performance characteristics. It implements advanced techniques including predicate pushdown, join reordering, aggregation pushdown, and materialized view matching. The system's intelligent query decomposition enables sub-second response times by strategically offloading expensive operations from underlying data warehouses, with adaptive execution plans that respond to runtime conditions.

Universal Semantic Layer

Strategy Mosaic provides a universal semantic layer that gives access to trusted data, allowing users to leverage it anywhere across various tools and applications through open standards.
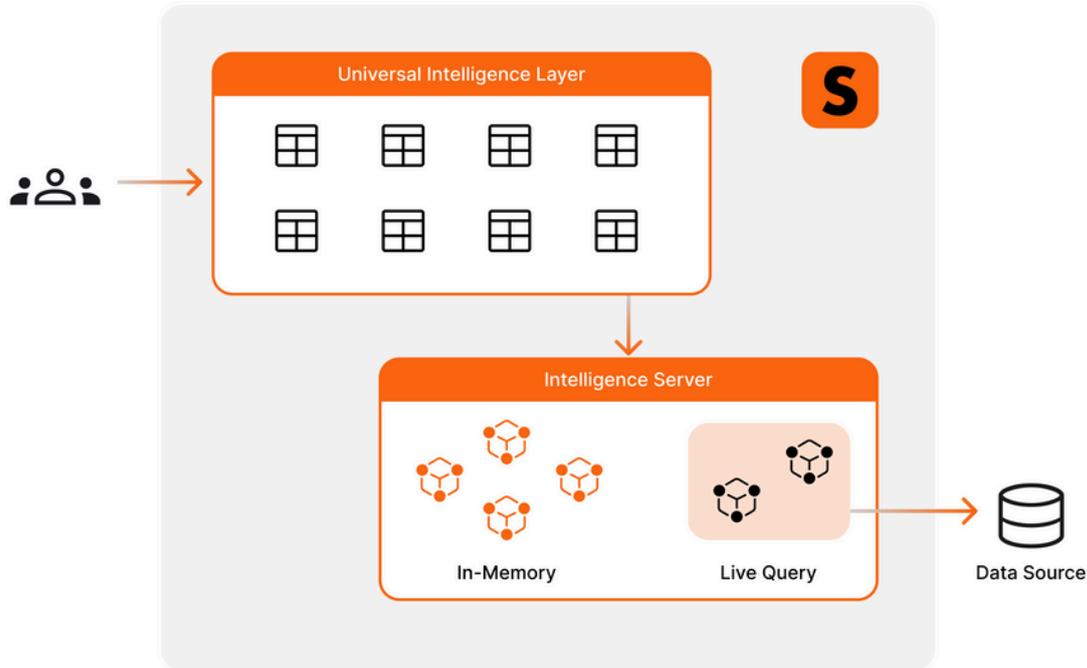
- **Universal semantic layer architecture:** Mosaic implements a dedicated access layer with specialized protocols for different client types. The service includes parsing/analysis and planning/optimization components that translate client-specific query formats into Mosaic's internal representation, ensuring consistent data delivery across all access methods while leveraging the semantic model's business definitions.

- **Standards-based connectivity protocols:** The platform enables client connectivity through industry-standard interfaces including SQL (JDBC/ODBC), DAX (XMLA), REST APIs, and Python interfaces. This standards-first approach ensures maximum compatibility with existing BI tools and custom applications without requiring proprietary drivers.

- **BI tool integration capabilities:** Mosaic provides optimized connectors for leading analytics platforms, with dedicated support for Tableau (via JDBC with SQL optimization), Power BI (via DAX query processing), Excel, and Google Sheets. Each connector implements tool-specific optimizations to maximize performance and compatibility with the tool's native query capabilities.

- **Developer API framework:** For custom applications and advanced integrations, Mosaic offers comprehensive RESTful APIs with JSON response formatting, Python SDKs with data frame integration, and language-specific client libraries. These APIs support authentication, pagination, and compression to handle production application requirements.

Centralized Enterprise Security

Strategy Mosaic centralizes and consistently enforces enterprise-grade security and governance across all data access points, ensuring trust and compliance.

- **Centralized security model:** Strategy Mosaic centralizes its security model within the Universal Intelligence Layer, ensuring consistent enforcement across all data access points. This eliminates the need to replicate security configurations across disparate data platforms.

- **Row-level and object-level security:** Mosaic provides granular security controls, including Security Filters (Row level security) and Object Level Access Control (ACLs). Users can define sophisticated security filters to control access based on country, region, or product.

- **Authentication methods and integration:** It supports granular user privileges, user groups and role-oriented management, and flexible authentication methods.

- **Audit logging and compliance features:** Mosaic supports governance, including policies, for supporting compliance and regulatory standards. It provides consistent policy enforcement.

- **Data masking and privacy controls:** Mosaic helps drastic reduction in PII exposure or data breach risk by consistently applying security rules. It ensures sensitive data is protected and not exposed.

- **Protecting sensitive data from LLMs:** Mosaic's design prevents the exposure of sensitive information to underlying Large Language Models (LLMs) while still enabling access to governed enterprise data. It ensures that AI only sees and works with the information it's supposed to see.

Fully Managed Cloud Service and Simplified Deployment

Mosaic delivers enterprise-grade capabilities with consumer-grade simplicity through its fully managed cloud service.

- **Fully managed service:** Available through Strategy Cloud without customer-side installation or configuration.

- **Native cloud integration:** Runs natively within the Strategy Cloud architecture, leveraging built-in security, scalability, and high availability features.

- **Instant accessibility:** Once provisioned, Mosaic is immediately accessible as both a modeling workspace and universal semantic query endpoint.

- **Zero infrastructure overhead:** Customers begin using Mosaic for modeling, AI-assisted metric generation, and federated analytics without additional infrastructure or container management.

Next Steps

To learn more:

- **Schedule a Discovery Session:** Meet with our solution architects to analyze your current data landscape and identify key opportunity areas

- **Watch a Demo**: See Strategy Mosaic in action as it seamlessly connects to various data sources, leverages AI-powered modeling, and integrates with your favorite BI tools

- **Read the Documentation:** Dive into the technical specifics of implementation and integration.

FAQ

Q: How long does it typically take to implement Strategy Mosaic?

A: Implementation timelines vary based on complexity, but many customers see initial value within weeks. Our AI-powered modeling tools accelerate implementation by up to 10x compared to traditional semantic layer solutions.

Q: How does Strategy Mosaic handle existing data models and business logic?

A: Strategy Mosaic can import existing data models and business logic from various sources, preserving your investment while providing enhanced capabilities and cross-platform consistency.

Q: What level of technical expertise is required to use Strategy Mosaic?

A: While data experts can leverage advanced capabilities, business users need minimal technical training. The AI-assisted modeling and natural language interfaces make it accessible to a wide range of users.

Q: How does Strategy Mosaic's pricing model work?

A: Unlike many cloud data platforms that charge based on data volume or processing time, Strategy Mosaic offers predictable pricing based on licenses.

Q: Can we continue using our preferred BI tools with Strategy Mosaic?

A: Yes. Strategy Mosaic is designed for universal access through standard interfaces like SQL, REST, and Python APIs, with optimized connectors for popular tools like Tableau and Power BI.

Q: How does Strategy Mosaic protect sensitive data?

A: Strategy Mosaic provides centralized security controls including row-level security, object-level access control, and data masking capabilities that are consistently enforced across all access points.

Q: How does Strategy Mosaic compare to data mesh or data fabric approaches?

A: Strategy Mosaic acts as a complement to existing data infrastructure, serving as a unifying layer rather than a monolithic replacement. It delivers many of the benefits sought after by data fabric and data mesh initiatives—such as consistent, governed, and easily accessible data—through its unique approach focused on AI-powered semantic consistency, robust security, and vendor neutrality.

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