

Enterprise Data Management in the State Street AlphaSM Data Platform

High quality, consistent and timely data forms the foundation of sound investment management. Alpha Data Platform (ADP) provides extensive Enterprise Data Management (EDM) capabilities that help investment firms manage and master the data required to inform their portfolio construction, risk, trading and compliance processes.

Purpose built for investment data, EDM is a cloud native, domain agnostic solution that includes sourcing and integration, curation and validation, data mastering and gold copy creation, and data lineage. EDM helps end users establish trust in mission critical data and provides a scalable, resilient solution for data operations teams.

Firms may also choose to outsource their data management needs by leveraging Alpha Data Services (ADS). ADS provides a global, follow the sun, operating model employing a dedicated global team of analysts to support multi-region start of day requirements by applying standard and client-specific operational control checks to uncover and remediate data issues.



Internally Manufactured Data

- Cash and positions
- Exposures
- Performance and attribution
- Open orders and completed trades



Externally Acquired Data

- Market and evaluated pricing
- Benchmark and index data
- Corporate Actions
- Security reference data
- Custodial data



Data Sourcing and Integration

Investment managers consume data from multiple sources, both internal and external, delivered in a number of formats, including files, FIX/SWIFT messages and XML.

EDM provides a number of capabilities for ingesting external data, including extract, transform and load (ETL) processes, and data sharing enabled by the Snowflake Data Cloud. Internally manufactured data is captured in ADP directly or via APIs. EDM was built with flexibility in mind, enabling firms to easily onboard new data sources and file/message formats.



Curation and Validation

EDM performs data normalization to help ensure the integrity of ingested data and reduce data redundancy. Once normalized, data is subjected to a rigorous validation process leveraging pre-defined rules, tolerances and thresholds that clients can customize and expand as needed. These rules generate actionable warnings and alerts based on data validation checks including:

- Detecting missing or stale prices
- Identifying price and value threshold violations
- Detecting missing required fields
- Flagging changes in security identifiers, issuer, country, currency, ratings and classifications

Exception based workflows enable operations teams to focus resources on the most critical issues.



Domain-Agnostic Master Data Management

ADP is built on a domain-agnostic model that enables master data management across any domain, including securities, counterparties, performance and investment products. Designed with extensibility in mind, ADP master data management enables operations teams to add custom tables as needed to support new asset classes, entities and securities.

The ADP security master covers a broad range of asset classes across multiple geographies and jurisdictions. To support the full depth and breadth of data required by complex fixed income and derivative instruments, the security master manages core security reference data for over 300 security types, and supports storage and comparison of multiple reference, analytics, and pricing suppliers and sources.

ADP maintains mappings for over 1000 data elements. For example, the security master supports over 120 types of bonds globally. Each bond type requires mapping hundreds of fields for accurate calculation of accrued interest, analytics and risk metrics. While some of these fields are consistent across bond types (i.e., coupon rate), others vary (day basis, calculation model) and need to be mapped individually.



Golden Copy Creation and Promotion

Investment firms rely on data from multiple sources, both internal and external. Security records can be stored independently by data source and blended to generate multiple gold copies that serve a diverse range of front and middle office end users, including portfolio ideation and construction, risk analysis, and performance and attribution.

Sophisticated security resolution is designed to ensure that security records from different sources are aligned based on CUSIP, SEDOL, ISIN, or other relevant identifiers and supporting fields such as exchange and country. Both the incoming data sources and the resulting gold copy can be validated to highlight real or potential data issues that may require attention. The gold copy is then promoted to the ADP security master. EDM enables “four-eyes” approvals that helps reduce the risk of releasing erroneous data and establishes a detailed audit trail documenting the creation, promotion and distribution of each gold copy release.



Data Lineage

ADP maintains rigorous and detailed lineage for every data element stored in the warehouse, tracking its lifecycle from creation to consumption. This provides investment professionals with context to help ensure appropriate data usage, and establishes trust that data is accurate, consistent and complete. Lineage answers a number of questions:

- What purpose does the data serve, and what information does it provide?
- When was the data acquired or created?
- How has it been transformed?

Data operations teams can also benefit by tracking data usage patterns, eliminating potential duplication between different data suppliers and establishing an audit trail for potential regulatory inquiries.



Data Delivery

Once the ADP security master has been populated with valid data, data can be distributed to downstream risk, performance, portfolio management and trading systems. This helps ensure that all front- and middle-office systems are sharing “a single version of the truth”. EDM helps ensure data is delivered to the right consumer, whether human or system, at the right time and in the right format.

Charles River Development, A State Street Company

Investment firms, asset owners, wealth managers, hedge funds and insurers in more than 30 countries rely on Charles River's front and middle office investment management platform to manage nearly US\$48 Trillion in assets. Together with State Street's middle and back office capabilities, Charles River's cloud-deployed software technology forms the foundation of State Street AlphaSM. The Charles River Investment Management Solution (Charles River IMS) is designed to automate and simplify the institutional investment process across asset classes, from portfolio management and risk analytics through trading and post-trade settlement, with integrated compliance and managed data throughout. Charles River's growing partner ecosystem enables clients to seamlessly access external data and analytics, applications and liquidity venues that support the demands of their product and asset class mix. Headquartered in Burlington, Massachusetts, we serve clients globally with more than 1,250 employees in 11 regional offices. (Statistics as of Q4 2022)

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