WorkSample1

Market Data Solution

What is a Market Data Solution in the Finance Industry?

Market Data Solutions are tools that help financial institutions manage and organize important market information, such as prices of stocks, bonds, and other financial instruments. These solutions ensure the data is accurate, consistent, and reliable, user-friendly UI, helping companies follow regulations, reduce errors, and save time and costs.

Why Do We Need Market Data Solutions?

In today's world, accurate financial information is critical, but it's also easy to get wrong. Without a proper system, companies may face problems like:

- Duplicate or redundant data
- High costs of acquiring market data
- Inconsistent valuations
- Problems with audits or regulatory compliance

A centralized market data system ensures that financial institutions have clean, reliable data for pricing, risk calculations, and reporting. It helps prevent mistakes that could lead to operational or regulatory issues and allows companies to meet deadlines for valuations and reports.

Benefits of Market Data Solutions

- Accuracy: Provides reliable pricing and risk data.
- Efficiency: Saves time by reducing manual work and data errors.
- Scalability: Handles more trading activity and reporting requirements as business grows.
- Flexibility: Users can configure the system based on their needs.
- Better Decision-Making: Supports risk management and reporting with advanced analytics.

The solution collects prices of financial instruments, checks for accuracy, derives missing prices if needed, and resolves any discrepancies to ensure that the most reliable prices are always used.

Who Uses Market Data Solutions?

- Financial Institutions and companies that need to know the value and risks of their investments.
- Teams Involved in Finance Operations, such as:
    - Market Data Validation Teams
    - Risk Management Teams
    - Product Controllers
    - Traders
    - Settlement and Reporting Officers
- Downstream systems that rely on clean, accurate data for calculations and reporting.

2.1 Terminologies, Concepts, and Descriptions

1. Price/Rate

A key entity within Market data representing any non-static numerical value linked to a financial instrument.

- Golden Prices: Final validated set of prices used by financial, risk, and other systems.
- Types: Collected (from vendors) or Derived (calculated).

Characteristics:

- Date and Time Stamps:
    - PRC_TMS: Golden Value date (Effective Business Date)
    - EVALUATION_TO_TMS: Actual Business Date of the price
    - PROC_TMS: Input parameter for Golden Price workflows
    - ADJUST_TMS: Last adjustment timestamp (system time)
- Price Quote Method: Unit of quotation (e.g., % for bonds, currency for equities).
- Pricing Method: Market, matrix, or appraisal.

- Current Yield: ROI on debt instruments.
- Price Validity: UNVERIFIED → VALID/SUSPECT after validation.
- Price Type: Bid, Mid, Ask, Open, Close, Model, etc.
- Price Currency: ISO or user-defined currency.

2. Price Status

Indicates the state of a price for each subscriber:

- Valid: Passed all validation rules.
- Suspect: Price appears incorrect.
- Unverified: No validation run yet.
- Stale: Value unchanged for a specific period.
- Missing: Price not available.

3. Subscriber Management

- Subscriber Name: Identifies downstream systems.
- Subscriber Id (dwdf_oid): Used to search subscriber names in FT_T_DWDF table.
- Supports multi-client scenarios with unique validation rules per client.

4. Price Processing Workflows

- Collection: Import prices from vendors via adapters.
- Rolling: Manage prices with limited duration (auto/manual).
- Derivation: Calculate prices from other inputs (e.g., Golden Price).
- Validation: Automatic + manual checks to ensure accuracy.
- EOD (End of Day): Verify Golden Prices, mark day complete, trigger reporting.
- Reporting/Publishing: Distribute Golden Prices to downstream systems, users, or via extracts.

5. Price Definition

Defines all parameters that uniquely identify a price:

- Instrument (ISSUE)

- Collection
- Rolling
- Derivation
- Validation

6. Curves and Surfaces

- Matrix/Template: Collection of fields/values used to construct curves and surfaces.
- Curve & Surface: Group of price points represented graphically (for example, yield curves, volatility surfaces).

7. Workstation Screen Resolutions

- Recommended screen resolution for Workstation:
    - 1366 × 768
    - 1440 × 900
    - 1600 × 900

1. Time Series

1.1 What is TimeSeries

A **Time Series (TS)** represents a business data element whose value changes across defined periods in the past or future. It provides the system with the ability to store and retrieve the valid value of an attribute for a specific date or date range.

Business information such as **credit ratings, cash flows, or identifiers** often evolves over time, and maintaining this history as supplied by vendors is essential. By capturing these changes, MDS ensures that **historical, current, and future-effective data** are managed consistently. This enables accurate **time-based processing of business rules, calculations, and reporting**, while preserving a complete timeline of data evolution.

1.1.1 What's new?

1.2 Purpose

1.3 Pre-requisites

Ensure that the following checks are enabled:

- Check 1 <Technical pre-requisites>
- Check 2 <Technical pre-requisites>
- Check 3 <Technical pre-requisites>

Note: -----

1.4 Configurations

1.4.1 Types of TS Configurations

A TS configuration option is available to enable or apply time series instructions as defined in the XML.

Note: ---

Attributes	Description
OPTION1	description
OPTION2	description

1.4.2 XML File Configurations

The following is the sample XML file for Timeseries:

```
<?xml version="1.0" encoding="UTF-8"?>

<!DOCTYPE TSCong SYSTEM "TSFile.dtd">

<TSCong>

  <!-- ************This is Top level Config ************ -->

  <occurrence table="Table1">

    <option id="option1" msTypes="ABCDY">

    </option>

  </occurrence>

</TSCong>
```