

NEW · DATA BACK OFFICE

NXW DMS

Data Management System

One trusted source of market and reference data.

Downloaded once, cleaned once, checked once, and served to every CCPX platform.

I

Investment

CCPI · IMS, FUNDMS

R

Research

CCPR · datasets

S

Strategy

CCPS · back tests

E

Education

CCPE · VTP

The DMS sits upstream of **IMS**, **FUNDMS**, **INDOBS**, **VTP** and the **NXW Monitor**.

One version of **every** number

The CCPX apps are growing fast, and each one fetches and cleans its own data. The DMS turns that work into one shared, audited service.

TODAY

Every app does its own data work

- IMS, INDOBS, FUNDMS, VTP and the Monitor each download their own prices
- The same close can differ from one app to another
- Every fix has to be made several times
- No shared history of what was known on a given date

WITH THE DMS

One back office serves them all

- Each source is downloaded once, on a schedule
- Checked and cleaned by the same rules
- Kept point in time, so back tests have no look-ahead
- Every correction logged and approved

WHAT EACH PLATFORM GETS

CCPI · Investment

Daily prices, corporate actions and FX, ready for IMS to calculate the indexes and for FUNDMS to price fund NAVs.

I

CCPR · Research

Long clean datasets for Macro Vietnam, equity screening, credit spreads, FX models and ESG scores.

R

CCPS · Strategy

Point-in-time data for back tests and rankings (momentum, mean reversion, carry, value, low volatility), sentiment and prediction signals.

S

CCPE · Education

Ready-made teaching datasets (basics, technical analysis, portfolio risk, derivatives) and the market data behind VTP.

E

8

daily functions

10

core tables

3

storage zones

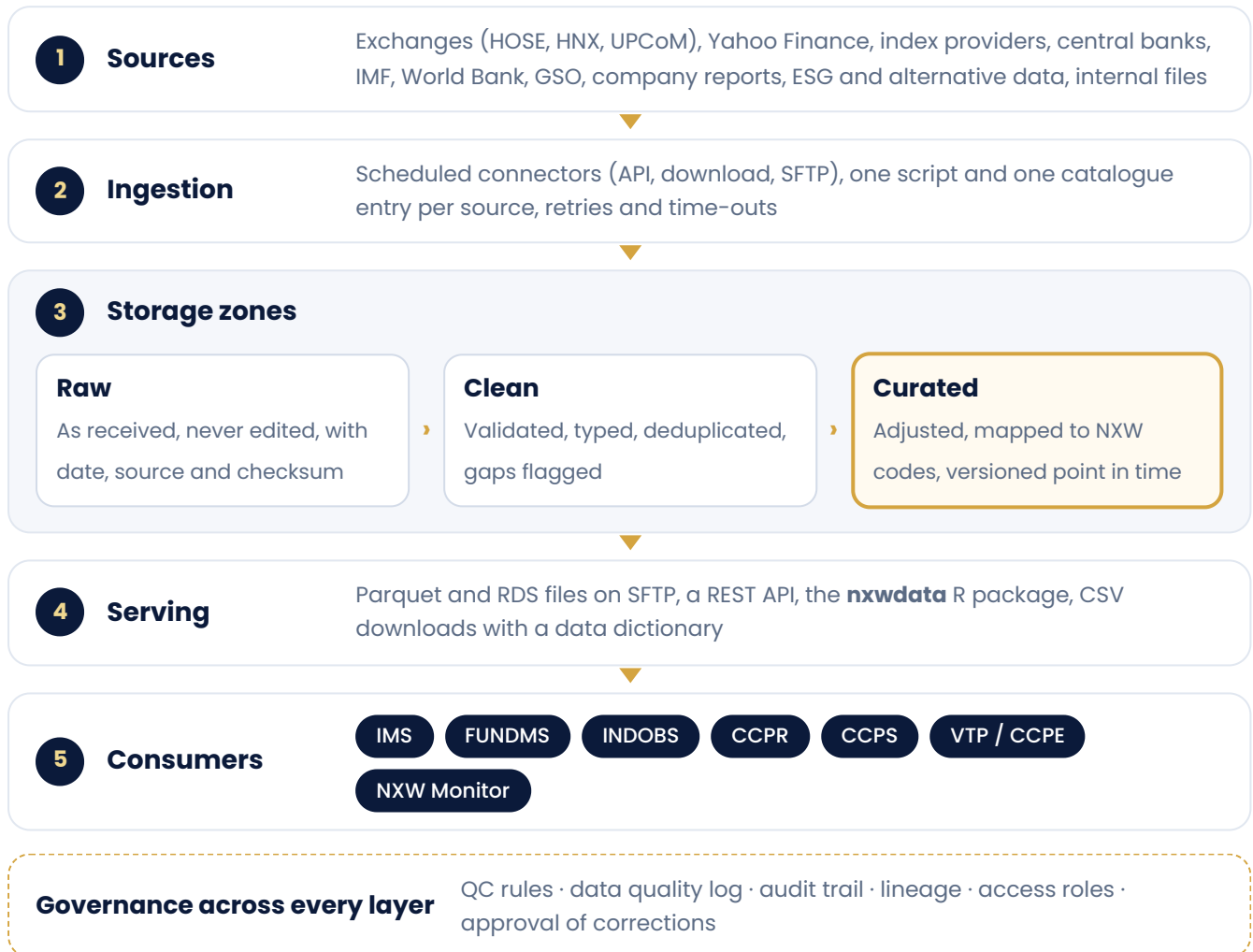
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connected apps

Works with IMS, does not replace it. The DMS hands IMS clean prices and corporate actions; IMS keeps what it already does well: index rules, calculation and dissemination.

Data flows **one way**, from source to platform

Raw files are kept exactly as downloaded, so every cleaned or adjusted number can be traced back and rebuilt. Only the Curated zone is published.



Data model: ten core tables

All keyed by the NXW instrument code and a date. Every row carries its source, load time and validity period, which makes the data point in time.

INSTRUMENT ISIN, ticker, asset class, exchange, sector	ID_MAP Vendor codes, valid from and to	PRICE_EOD OHLC, volume, raw and adjusted close	PRICE_INTRADAY Price and volume (later phase)	CORP_ACTION Type, ratio, dates, adjustment factor
SHARES Outstanding, free float, foreign limit	FX Rate by pair and date	INDEX_EXT Levels and constituents by provider	FUNDAMENTAL Statements by period and item	MACRO Series, unit, country, release date

Plus two control tables: **SOURCE** (feed catalogue, owner, schedule, last run) and **DQ_LOG** (every check, correction and approval).

Eight functions, every day

They run in this order and each one is logged, so any number can be traced back to the file it came from.

1 Download Scheduled connectors fetch each source; the file is stored untouched with date, source and checksum.	2 Validate Format, completeness and range checks. A failed file is quarantined, an alert is sent, yesterday's good data stays live.
3 Clean Common dates, decimals, currencies and units; duplicates removed; gaps flagged, never silently filled.	4 Map identifiers One NXW code per instrument, linked to ISIN, ticker, exchange and vendor codes.
5 Adjust Corporate actions build adjusted and total-return series; raw prices are kept beside them.	6 Enrich Returns, FX conversion, market cap, free-float cap, sector, country and asset class.
7 Version and publish Curated tables saved point in time, then published as files and through the API.	8 Monitor A dashboard of every source and table: last update, open issues, corrections waiting for approval.

Inputs

Source	Data	Frequency	Main users
HOSE, HNX, UPCoM	Prices, volumes, shares outstanding, free float	Daily	IMS, FUNDMS, CCPR
Yahoo Finance and APIs	Global equities, ETFs, indexes, futures, FX, crypto	Daily	INDOBS, VTP, CCPS
Announcements	Dividends, splits, rights issues, mergers, delistings	Event	IMS, FUNDMS
Index providers	Levels, constituents, classifications	Daily, quarterly	INDOBS, CCPR
Central banks, IMF, WB, GSO	Rates, inflation, GDP, money supply	Monthly, quarterly	CCPR, CCPS
Company reports	Financial statements, ratios	Quarterly	CCPR, CCPS
ESG and alternative	ESG scores, women CEO lists, sentiment, news	Monthly, daily	CCPR, CCPS
Internal	Fund transactions, VTP markets, corrections	Event	FUNDMS, VTP, CCPE

OUTPUTS

Same tables, **every consumer**

Only the format and the delivery change. Apps never write to the curated layer, except through a logged correction.

Consumer	What it receives	Format and delivery
IMS (CCPI)	Clean and adjusted prices, corporate actions with factors, shares and free float, FX	Daily RDS or Parquet on SFTP before the run, plus API
FUNDMS (CCPI)	Prices and FX for NAV, corporate actions for holdings	Daily file and API
INDOBS	External index levels, constituents, classifications, ranking inputs	Daily and monthly files
CCPR research	Full histories and research datasets	Parquet extracts, SQL view, CSV with data dictionary
CCPS strategies	Point-in-time panels, returns, factor, sentiment and prediction inputs	Parquet panels by date, API
VTP and CCPE	Daily and intraday market files, teaching datasets	VTP_MARKETS files, CSV packs per course
NXW Monitor, website	Status, last values and charts	Small JSON or RDS summaries
Data team	Quality report, issues, corrections to approve	DMS dashboard and a daily email

Quality control and audit trail

A blocking failure keeps yesterday's good data in use; a warning publishes the data with a flag.

Check	Example rule	Level
Completeness	All listed HOSE tickers have a close today	Blocking
Freshness	The file date equals the expected trading date	Blocking
Range	Move beyond the limit (7% HOSE, 10% HNX, 15% UPCoM) with no corporate action	Warning
Consistency	High is at least open, close and low; volume not negative	Blocking
Cross-source	Close differs by more than 0.5% between two sources	Warning
Identifiers	A new ticker with no NXW code	Blocking

Audit trail

Raw files are never edited. Every check and correction goes to DQ_LOG with user, time and reason; a correction is live only after a second person approves it. Any table can be rebuilt as it stood on a past date.

Built on the **stack we already run**

R first

Connectors and checks in R (httr2, data.table, arrow, DBI, validate); Python only where needed.

Storage

Parquet by table and date, queried with DuckDB; PostgreSQL for codes, sources and the quality log.

Scheduling

One job per source on a Linux server, then the daily build once every source is in.

Serving

IFRC SFTP folder, a plumber API, and the nxwdata R package used by every app.

Monitoring

A Shiny dashboard published like the other NXW apps, plus a daily email.

Code

One Git repository, a folder per connector, tests on every check.

Roadmap

PHASE 1

Foundation

Vietnam prices, corporate actions, shares and FX; NXW codes; the three zones; core checks.

Done when IMS reads all its inputs from the DMS

PHASE 2

Ecosystem

Global data, external indexes, macro series; the nxwdata package; the dashboard.

Done when FUNDMS, INDOBS and VTP drop their own downloads

PHASE 3

Research

Fundamentals, ESG and alternative data, point-in-time panels, data dictionary.

Done when CCPR and CCPS back tests run on DMS panels

PHASE 4

Scale

Intraday prices, paid feeds where needed, access roles, external data products.

Done when selected datasets are offered to clients

First steps

- 1 List every download each app does today, with its source and schedule.
- 2 Agree the NXW instrument code and build INSTRUMENT and ID_MAP for Vietnam.
- 3 Move the VTP Yahoo script and the IMS price load into DMS connectors.
- 4 Write the core checks and the DQ_LOG.
- 5 Switch IMS to the Curated zone, then the other apps one by one.

NXW DMS

Clean data in. Confident decisions out.

The data back office behind Investment, Research, Strategy and Education across the CCPX ecosystem.

Trusted

Every number checked, logged and traceable to its source file.

Shared

One set of curated tables for IMS, FUNDMS, INDOBS, VTP and research.

Point in time

History as it was known, for honest back tests and audits.

Talk to the NXW data team



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