

Configuring Independent Price Verification (IPV) Workflows at a Leading German Commercial Bank

Independent price verification (IPV) is an increasingly important process requirement to support finance and risk functions across a wide range of financial institutions. The core IPV process demands that internal prices are verified against independent third party sources. In this paper we will be looking at how to configure workflows to meet the regulatory standards.

What are Independent Price Verification and Market Conformity Checks?

Basel II Prudent Valuation Guidance defines Independent Price Verification as “the process by which market prices or model inputs are regularly verified for accuracy. While daily marking-to-market may be performed by dealers, verification of market prices or model inputs should be performed by a unit independent of the dealing room, at least monthly (or, depending on the nature of the market/trading activity, more frequently)”.

Significant discrepancies between the internal and independent prices above a certain threshold then trigger an investigation. It is important to note that this threshold is typically set in relation to the exposure that a firm has to a given asset (or liability). That means as part of the price verification process, firms need to collect up to date information relating to exposures (delta, vega and cash positions).

Any ensuing price investigation typically requires a controller to research circumstances that might have legitimately caused the discrepancy (for example - a distressed sale in the market causing a temporary blip in the ‘independent source’). The independent nature of price verification refers to more than just the independence of the pricing source.

For example, under the EU’s Capital Requirements Regulation (CRR) it also refers to the individual in charge of the process, specifying that the verification process “shall be performed by a person or unit independent from persons or units that benefit from the trading book.”

In order to meet these requirements it is important that firms maintain strict role-based access control over the verification process, as well as process auditability and maker-checker controls to help safeguard and demonstrate compliance.

Market Conformity and Best Execution

Market Conformity Checks (MCC) are a requirement specific to German markets, but share similarities with best execution controls in other jurisdictions, as the goal is to ensure trades have been executed in line with prevailing marketing conditions.

This requires a wide range of data sources, validated for data quality and accuracy. It poses a particular challenge for illiquid or complex securities, in which case – e.g. there are no observable market prices – a trade would need to be validated against model valuations or a liquid benchmark.

The Challenges Faced at a German Commercial Bank

A leading German commercial bank was performing IPV and MCC checks using a combination of basic software and a paper-based system. The existing system was able to perform simple checks against market prices, but was inflexible and incapable of handling more complex assets. Automated tests had to be augmented by manual checks against data from vendor terminals or spreadsheet calculations, and audit of these checks was paper-based. The system was unwieldy and inefficient, making good governance a challenge for the bank.

The fundamental business requirement was to verify that the prices and valuations produced by the bank’s front office corresponded with available market data. This applied both to the price at which trades are executed (MCC) and end-of-day valuations of positions (IPV):

- The Risk Control team performs a daily check of end-of-day parameters (e.g. security prices, rates, correlations, volatilities) declared by the bank’s front office against independent market data. This is the independent price verification (IPV) check.
- The team also performs a daily check of trade parameters against independent market data for the market conformity check (MCC).

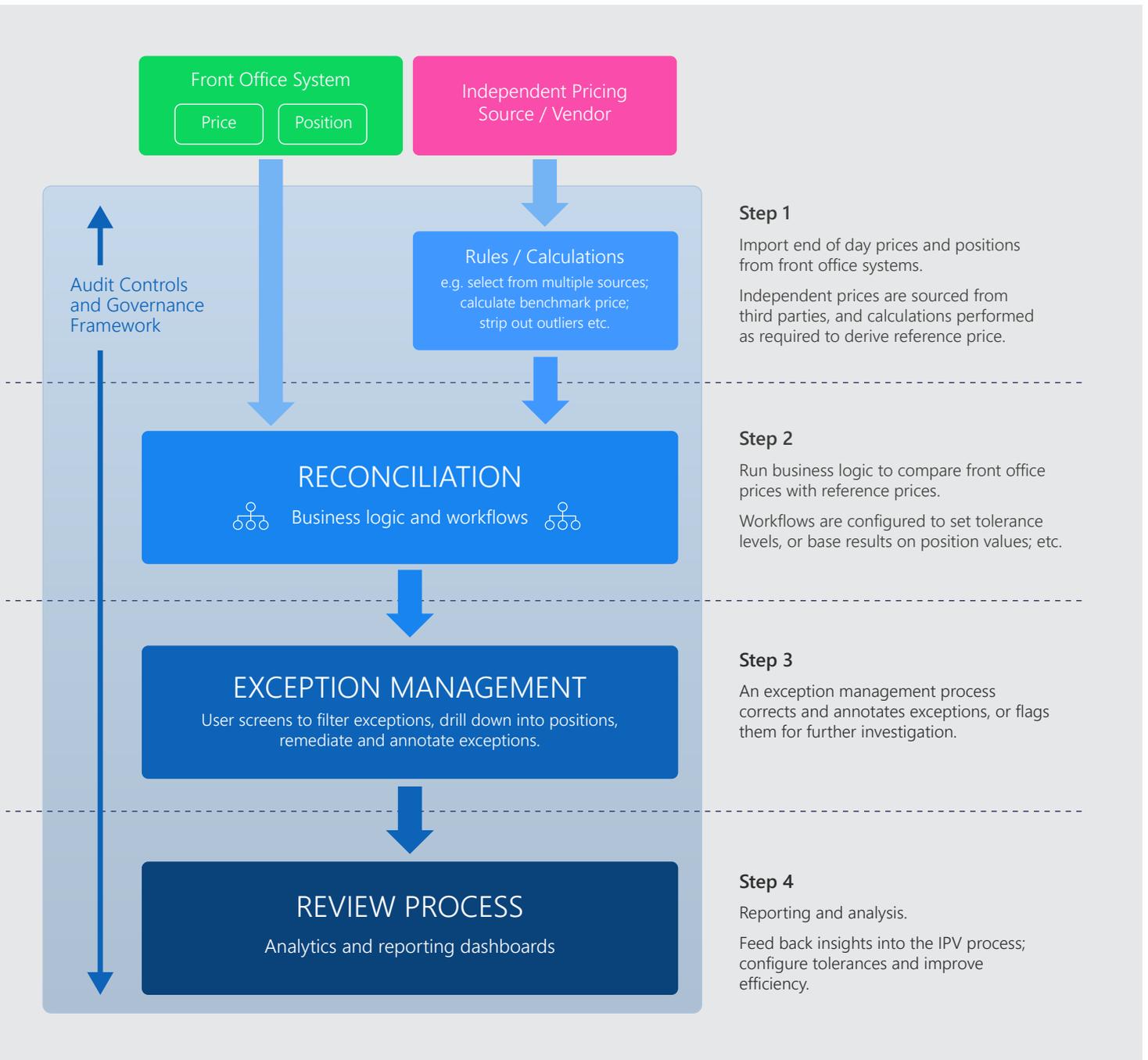
Underlying the business requirements are the risk management requirements set out by the German Federal Financial Supervisory Authority (BaFin), as well as the audit requirements of the German and European central banks. To comply with their regulatory obligations the bank needed to improve the efficiency of their IPV process, as well as implement full audit and governance controls to demonstrate the validity and independence of the reconciliation.

Building Automated and Auditable Workflows

Working in partnership with the bank's internal project team, Xenomorph provided the Risk Control department with a flexible solution that handles the requirements of multiple business teams with responsibility for over sixty product groups. Approximately 50,000 checks are performed each day.

Workflows and end-user screens were configured according to the bank's internal specification to enable the Risk Control team to easily manage the day-to-day running of the IPV and MCC checks.

Every morning, between 3:00am and 6:00am, data arrives from the front office accounting and risk systems. The automated solution on-boards this data, then requests relevant market data from multiple vendors as required. The market data requirements vary greatly by product type and the type of check being performed. For example, a simple JPY corporate bond trade might require a 1 hour window of tick quotes from a specific list of contributors, from which we can build a picture of the market conditions at the time of the trade. For an OTC interest rate derivative transaction we need to check the trade parameters against the end-of-day valuation, and for this we need market data (interest rate curve and currency rates) both at the trade time and at the end-of-day.



Having gathered the market data, we calculate a reference value against which the “value under test” is checked. In some cases there are multiple reference values, e.g. margin and NPV checks, spread checks, issue price vs. market price etc.

In the simplest cases the check is simply a comparison of the front office price against a market quote, using an absolute or relative tolerance. More sophisticated tests derive a reference price from a defined list of perhaps 20-30 contributors, with the tolerance parameter automatically adjusted for market spreads. In some cases, mathematical pricing models are used to derive the reference price. For some products, the P&L impact of a price difference forms the basis of a test rather than a straightforward tolerance. There can also be multiple tests defined for a single product, with the results combined to provide an overall pass/fail.

Other checks may not use market data but act as checks on data held in other internal systems e.g. comparing reference values to confirm they haven’t changed unexpectedly.

The check itself uses a configurable (and in some cases, dynamic) tolerance. IPV and MCC parameters are marked as “OK” (within tolerance), “Outlier” (outside tolerance) or “Missing” (more data needed).

A web-based user interface presents end-to-end process transparency and enables the business users to investigate outliers with supporting ad-hoc market data requests or, if deemed necessary, the attachment of pertinent documents. The interface for each product group maximizes transparency and usability through the use of configurable charts and tables. The interface also gives the users complete control over each test calculation via business rules and parameters, with critical functions protected by maker-checker change control.

Audit, Controls and Governance

Existing reporting capability was enhanced to provide analysis features that enable users to periodically review and control the tolerances used for each check. Using historical processed results, users can see graphically the impact of changes to tolerances and fine-tune the process to balance efficiency with control.

The system provides full auditability of each calculation, check and user input, as well as recording process changes (rule and parameter changes). Full data lineage is recorded for the end-to-end process and a granular permissioning model and maker-checker controls support the governance framework for the solution, ensuring independence of the reconciliation process and an audit trail for compliance.

If you would like to learn more about the processes discussed in this case study please contact Xenomorph and one of our consultants will be able to discuss your business requirements.

Xenomorph provides trusted data management solutions to many of the world's leading financial institutions. The company has more than two decades' experience managing large volumes of complex data and analytics. Over that time, we have consistently reinvested in our technology, culminating in our latest generation enterprise data management platform.

Our software is built to be future-proof. With our rules-based single-stack architecture, flexible data model, easily configurable workflow engine and integrated feature updates, the Xenomorph data management platform empowers you to address any future requirements. It can be operated by business users without any prior programming expertise, which means it offers a truly agile and cost effective solution to address evolving business, regulatory and technology trends. The platform also excels at managing and validating model-derived data, thereby enabling firms to address their model risk management challenges by making sure inputs and outputs of business critical models are always validated and kept in sync.

For more information on our company, our clients, services and solutions, please see www.xenomorph.com.