

# Whitepaper: Capital Market Projects Brief



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# 1 Background of Anshinsoft

Anshinsoft has been implementing solutions for capital market back-office automation for the last 9 years in US, UK and Asia Pacific region. The solutions delivered include securities trading and settlement back office systems for security brokers, custodians and asset managers supporting multiple asset classes in multi-currency and multi-market setting. These solutions are based on Anshinsoft's proprietary implementation framework developed using the Java/Java EE standards. Many of these systems are running live and continue to be supported & maintained by Anshinsoft's off-shore support teams. The following list describes some of these solutions along with their functional scope and also the technology platforms used for implementation.

## 1.1 Broker & Custodian Back office system in Asia-Pacific

Custom designed and implemented a comprehensive 'Trading and Settlement Back Office System' for Nomura Securities. The system addresses the full life cycle of the trading, settlement and accounting processes and is seamlessly integrated with other back-office ERP systems for reporting / DSS purposes. The localized versions of this system were deployed in their Tokyo, Hong Kong and Singapore operations and have been in production for nearly five years. The major functional components covered by the system include:

- Trade capture, enrichment and management
- Settlement and Custody system
- General Ledger and Account management
- Position Management
- Nostro management
- Interfaces with external agencies like JASDEC, clearing corporations etc.
- Adapter components for interacting with legacy systems
- SWIFT message processing
- Reference data

Some of the salient features of the above system are

- Support of multiple asset classes and trade types through a common interface
- Support for multi-location, multi-geography operations
- Rule engine support for configuring customer / market specific rules
- Fully configurable access control of users / roles / permissions etc.
- Message based architecture ensuring Straight Through Processing with minimal manual intervention
- Rich dashboard for exception monitoring system

The solution has been developed on Java EE platform using message oriented middleware and relational databases. The loosely coupled, asynchronous message based architecture makes the solution enabled for seamless scaling of throughput and easier to

maintain & enhance over time. Java EE makes the solution standards compliant and hence adaptable towards future technology upgrades over the JVM. Oracle, the relational database used makes the solution secure and persistent.

As mentioned before, these systems are running live in Tokyo, Hong Kong and Singapore. Anshinsoft has also been providing the services for maintaining and enhancing these systems, since their deployment about five years ago, under renewable annual support contract.

## 1.2 Broker & Custodian Back office system in the U.S.

Custom designed and implemented an end-to-end Securities Trading Back Office System for a very large Security Broker and Custodian based in U.S. having global operations. Key features of the system include:

- Single system to manage for both brokerage and custody back-office
- Multi-enterprise support requiring segregation of data across different legal entities belonging to same enterprise
- Supports multiple markets, cross border trades and multi-currency settlement
- Support of different trade types including Cash Trade, When Issued, MBS, Repo & Reverse Repo, Banking Trade, Forex, Cash Wire
- Trade Matching and Trade Confirmation support
- Different Asset Classes including Equity, Fixed Income with support for dual listed securities
- Unified interface for capturing different trade and managing settlement lifecycles
- Tax calculation support
- Ability to integrate with existing middleware systems and infrastructure for interfacing with market intermediaries like DTC, NSCC, GSCC and BONY
- Corporate Actions Suite supporting Repo Tracking and Fail Tracking
- Support a broad range of US regulatory reporting needs

Besides providing the business components to support the wide spectrum of daily operations, the developed solution also addressed several limiting constraints of their existing legacy back-office system:

- Scalability – the new system was benchmarked to support 1.5 million trades per day within the stipulated back-office working hours
- Throughput - peak performance curve of up to 250 transactions per second was achieved with the new system
- Robust and fail-safe operation – the new system supports application integration with Oracle 10G RAC and Veritas managed fail-over for messaging middleware (ensuring 24X7 operation)
- Open standards, loosely coupled and message oriented architecture makes the new system much easier to integrate with other existing systems and adapt to proprietary data interchange protocols

- Centralized manageability due to fully web-enabled and thin client based deployment –(web browser based user interface)

The solution has been built as a fully Web-enabled application, on the industry standard Java EE platform, architected using message oriented middleware and state-of-the-art relational database technology. The system has been developed, tested, user-accepted and is ready for deployment (the actual deployment schedule has been postponed by the customer for various internal operational priorities).

### 1.3 Asset Management Back Office System in UK

Implementing the back office system for the buy-side business of a large asset management firm in UK, and is providing the required services for migration from and replacement of their existing back office platform. The new system will interact with a number of external third party systems, currently in operation within the firm and will handle the complete trade lifecycle for various asset classes: track their settlements (completion and failure), make necessary journal postings, manage account balance and process corporate actions, etc. The system is designed to support multiple fund accounts belonging to fund managers across different offices around the globe. Some of the salient features of the system are:

- Single Integrated Back Office system for worldwide operations
- Support for buy-side business of the firm in Structured Exchange Traded Derivative securities
- Integration of the back-office system with Charles River front office system

### 1.4 Fund Management System

Development and continuing enhancement of a short term fund management system for a large financial institution in South East Asia. The main areas covered under the implementation are:

- Transaction Management
- Position Management
- Decision Support
- Bulk handling of Commercial Paper and Certificate of Depository

### 1.5 Miscellaneous Consulting Engagements

Apart from implementing large scale, custom developed back-office systems for broker, custodian and asset management companies, Anshinsoft also has a proven track record of executing several consulting engagements in the Capital Market domain, in areas such as requirement analysis and solution road map recommendations for broker back office operations and compliance reporting.

### 1.5.1 Back Office System Evaluation for VNDS, Vietnam

VNDS is one of the one of the largest brokerage houses in Vietnam, head-quartered in Hanoi. VNDS have an integrated back and front office that caters to their current requirements. However, with exponential growth of business, they wanted to assess if their existing system would be able to meet their future requirements and also to analyze their future business requirements (including the establishment of an Asset Management subsidiary) for recommending them an IT solution roadmap.

A short term study was conducted in Hanoi by a senior team from Anshinsoft, in collaboration with their management team and the users. In the evaluation report, Anshinsoft proposed a solution roadmap and a series of recommendations addressing the following areas:

- How to stabilize and enhance the existing systems and operational infrastructure to support current operational growth of the firm
- How a new integrated STP enabled back-office system will enable them to achieve the much demanded business efficiency, deal with volume growth and make them ready to support their business road-map in an increasingly complex and dynamic capital market environment in the Far East.

### 1.5.2 Business Process Study for Visor Capital, Kazakhstan

Visor Capital is one of the largest brokerage houses in Kazakhstan, head-quartered in Almaty. Visor Capital currently manages its entire process flow through a mostly manual process and wants to take steps towards automating their entire back office operations by implementing a system that would seamlessly handle increased trade volumes which is already becoming an area of concern.

A detailed study was conducted covering the existing business process of Visor Capital, KASE market practices and their existing systems. Accordingly a solution roadmap, along with a comprehensive migration plan, was proposed to support the following major functional requirements of the firm going forward:

- T+0 Settlement
- Support all KASE (Only Stock Exchange in Kazakhstan) traded security types and other foreign exchanges
- Reference data including Securities, Account and Customer
- Manage post-trade lifecycle of a KASE trade
- Billing and Invoicing
- ADR/GDR Conversion
- Financing
- Corporate Action
- Overdraft
- Regulatory Reporting

### 1.5.3 SEBI Compliance Reporting Requirement Analysis for UBS, HK

Anshinsoft made a detailed study of the business process related to compliance reporting to SEBI (The regulator for Indian capital market) and recommended how UBS Hong Kong

can overcome major constraints (manual intervention, missing client information, missing company names) and streamline the process. An onsite study was conducted with the purpose of arriving at a tactical short term solution to overcome the existing constraints.

Emphasis was given on making recommendations to modify the existing systems, in order to achieve the following objectives:

- Maximize the level of automation in the report generation process
- Identify whether more reliable alternative systems exist to capture source data
- Streamline the workflow including the exception capturing and dealing process

## 1.6 Short Term Fund Management for NAM-UK

Anshinsoft helped Nomura Asset Management (NAM), UK to enhance their existing application for Short Term Fund Management (STFM). The enhancements were based on futuristic business functionalities for trade and portfolio management of Short Term Funds (like commercial papers, treasury bills etc.), increasing manageability of the system with less manpower, enhancing performance and improving the user interface. The enhanced STFM application is also better (and real time) integrated with their core front and back office system. The business functionalities of STFM that were enhanced by Anshinsoft are:

- Position Management
- Transaction management
- Decision support
- Input/output process

## 1.7 Reporting Solution for Goldman Sachs, NY

Anshinsoft implemented an enterprise scale, fully web-enabled reporting system for Goldman Sachs Asset Management (GSAM) to complement their risk modeling and forecasting of equity fund portfolios functions. The system was implemented using Anshinsoft's Java based reporting engine (Repro) and deployed on GSAM's proprietary Portfolio Analysis and Construction Environment (PACE) platform - their risk and return attribution system that is used to forecast risks across the spectrum of equities managed by GSAM. Some of the example reports are: Exposure Attribution, Stock Attribution Analysis, Variance Analysis, Risk Liquidity, Portfolio Exposures, etc. This environment uses different mathematical models to monitor, analyze and predict risk, such as Tracking Error, Barra, etc. The reporting system incorporates more than 50 unique reports which are generated by several hundred clients resulting in thousands of reports being generated each day. The reports are accessible over secured web portal with appropriate access control and can be generated on demand in real time or pre-generated through scheduled nightly batch processes. The system has been in production for more than five years and Anshinsoft still continues to provide maintenance, report enhancement and technical support to GSAM using an off-shore based service model.