



**VENTURE**  
*Financial Systems Group, LTD.*

# **Implementing an Investment Accounting System Lessons from the Trenches**



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# Implementing an Investment Accounting System

## Lessons from the Trenches

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Few implementations can compare to that of an investment accounting system in terms of size, complexity, and potential risk. Have you been involved in an Investment Accounting System implementation as an accounting replacement project or at the heart of a Middle Office outsourcing solution? If so, you probably have some of your own stories to tell. Venture published its first *'Implementing an Investment Accounting System: Lessons from the Trenches'* article in 2004 after completing its 4<sup>th</sup> major accounting software evaluation and implementation. We realize that many of the lessons we learned back then, are those that we still employ today to myriad front, middle and back office engagements. We decided to update those collective lessons learned and practical guidelines that Venture employs and share them to help the next generation of investment accounting implementers ensure a successful project delivered on time and within budget.

As firms migrate from legacy platforms or to outsourcing models, or perhaps onboard clients to a new platform, charting the right course is more critical than ever. Once a decision has been made, optimizing the many tasks to be completed through to conversion and the impact of a new solution to business flows is challenging and requires a well thought out approach towards all aspects of the project with particular attention towards:

Project Management;  
Data Management;  
Conversion;  
Accounting Considerations;  
Re-engineering Trade Operations Workflows;  
Reporting; and,  
Testing, Training, & Rollout.

Venture FSG has devoted the last 22 years helping our clients successfully achieve their business and technology initiatives throughout the Investment Management Vertical front – back office. We work with our clients through Solution Evaluations, Proof of Concepts (POCs), Cost Estimates, Resource Requirements, Full Lifecycle through Conversion and Training. We've done this by developing true partnerships with clients by sharing goals, mitigating risk and avoiding potential pitfalls upfront; hiring people that have a high degree of business intelligence, true domain experts with business and technical backgrounds that have come from the asset management space; rolling up our sleeves and getting into the details, where the devil lives; and employing 'Lessons Learned'.

# Implementing an Investment Accounting System

## Lessons from the Trenches

Few system implementations can compare to the implementation of an investment accounting system in terms of size, complexity, and potential risk. Successful implementations will include plans to address the challenges and mitigate risks throughout the project lifecycle.

Challenges	Considerations
Project Management	Do not underestimate how large and complex an accounting system implementation can be and how important it is to employ experienced and disciplined project management that includes an effective risk assessment and sound contingency planning.
Data Management	Too often firms implementing a new accounting system underestimate the effort required to establish consistent core reference data. Conversion strategies need to carefully examine reference data requirements. They need to take into consideration the sources of reference data, how much historical data will need to be converted, and the amount of data cleansing that will need to be done during the conversion process. Establishment of firm-wide standards for consolidating, translating, validating and disseminating quality reference data can result in reduced operational cost and risk.
Conversion	Conversion strategy and process are critical components to a successful implementation. The ability to leverage automated conversion tools will help reduce risk and optimize resources – inclusive of conversion strategy, business requirements, through to testing, and conversion.
Accounting Considerations	Identify how new functionality may change accounting methods and be prepared to deal with those changes (e.g., coordinating with auditors, addressing price or yield issues on conversion date, booking lump sum catch-up accruals, etc.). Enhanced functionality to customize business rules to support new and complex security types, support complex and evolving fund structures, and address new accounting regulations and tax code changes, will require appropriate training.
Re-engineering Trade Operations Workflows	Any major system implementation must be accompanied by a review of current processes, careful refinement of workflow, quality processes, operating procedures, and even human resource practices. Implementation of a new accounting system will likely require redefining some business processes and getting people to work differently. Careful attention must be applied in order to successfully optimize the benefits of the new system.
Reporting	Most systems are delivered with a standard set of reports and the ability to create customized calculations, reports, and queries to meet specific client requirements. A gap analysis should be conducted to determine the system supplies all reports required by the business units out of the box. Analysis should include examining business and system processes to determine whether the new system, inclusive of all dependent processes, can generate, approve, and distribute report packages within the allotted window of time.
Testing, Training, & Rollout	A new accounting system cannot be deployed successfully without significant testing, training, and a thorough rollout plan. Testing, training, and performance tuning are obvious areas where, with additional time, more can always be accomplished to make an implementation go more smoothly. However, no matter the testing period, some issues will remain in a large application upon cutover. The only true test comes when hundreds of users begin stressing the system in production. The same observation holds true for training and tuning; there is no such thing as too much of either. A proper assessment of when enough has been accomplished to make the go-live decision is critical.

# Implementing an Investment Accounting System

## Lessons from the Trenches

**Project Management** - Do not underestimate how large and complex an investment accounting system implementation can be and how important it is to employ experienced and disciplined project management that includes an effective risk assessment and sound contingency planning.

Challenges	Considerations
Project Structure & Scope	<ul style="list-style-type: none"> <li>• Ensure before the project begins that you have defined staffing requirements for the project.</li> <li>• The team should be dedicated core staff that stay on from testing through production to ensure continuity.</li> <li>• You will require a strong Project Manager with the finesse to navigate your internal organization as well as the vendor organization.</li> <li>• The project team must also include staff with strong knowledge of the firm's accounting practices, as well as staff knowledgeable of system integration requirements, staff experienced with any new technologies to be introduced with the system, and staff who can introduce new workflow and process infrastructure.</li> <li>• Institute a formal review and approval process to manage scope creep and containment.</li> </ul>
Plan, Timeline & Budget	<ul style="list-style-type: none"> <li>• Establish and sign off on a comprehensive implementation Project Plan that includes specific and realistic milestones.</li> <li>• The plan should outline all the steps needed to complete the migration, including training and testing plans.</li> </ul>
Risk Management	<ul style="list-style-type: none"> <li>• Identify potential risks and plan for their occurrence.</li> <li>• Regularly monitor your risk list and execute your contingency plan as necessary.</li> <li>• Implement change control procedures in order to ensure that the introduction of system and workflow process changes are as transparent as possible.</li> <li>• Changes should be appropriately authorized and approved, thoroughly tested, sufficiently documented, and implemented at an appropriate time.</li> </ul>
Communication Standards	<ul style="list-style-type: none"> <li>• Regularly and proactively communicate project status, issues, and successes. A coordinated communication plan is a good way to reinforce project goals, timelines, benefits, and constraints.</li> <li>• Implement a process for tracking issues, leveraging any existing in-house defect tracking system if available.</li> <li>• Implement procedures that require that complete information be tracked for each issue such that developers can understand the problem, get an idea of its severity, and reproduce it if necessary.</li> <li>• Define what constitutes critical vs. non-critical issues and prioritize issues. Regularly review the status and resolution of issues with the vendor and your end users.</li> </ul>
Service Level Agreements (SLA)	<ul style="list-style-type: none"> <li>• Establish a process to regularly assess the status of vendor deliverables and manage vendor deliverables as a potential project risk.</li> <li>• Ensure the vendor focuses on critical issues of quality and supportability of the current version as well as the bells and whistles of future versions.</li> <li>• Clearly articulate project assumptions and constraints to ensure that the expectations of business sponsors, end users, operations staff, and even the vendor are aligned.</li> </ul>

## Implementing an Investment Accounting System Lessons from the Trenches

**Data Management** – Too often firms implementing a new investment accounting system underestimate the effort required to establish consistent core reference data. Conversion strategies need to carefully examine reference data requirements. Strategies need to take into consideration the sources of reference data, how much historical data will need to be converted, and the amount of data cleansing that will need to be done. Establishment of firm-wide standards for consolidating, translating, validating and disseminating quality reference data can result in reduced operational cost and risk.

Challenges	Considerations
Reference Data Requirements	<ul style="list-style-type: none"> <li>• Work backwards from required reports and calculations to identify required data, data sources, and timing.</li> <li>• Identify data that is required to support new functionality but is not currently tracked or easy to get to.</li> <li>• Each data vendor should be evaluated to determine if it provides the best data to meet the needs of the firm. A data vendor should not necessarily be chosen just because it is currently being utilized by another system in the firm.</li> <li>• Data should be leveraged as much as possible across the organization to maximize business efficiencies and minimize costs.</li> </ul>
Data Mappings	<ul style="list-style-type: none"> <li>• Prepare specifications and data mappings for each interface to reference data, leveraging data vendors as much as possible to provide data definitions for each field, as well as sample data for currently held securities.</li> </ul>
Data Scrubbing	<ul style="list-style-type: none"> <li>• Plan for the need to be prepared while closely examining existing reference data in preparation for the new system, you may potentially discover anomalies in historical information, requiring that data be cleaned up and improved as part of the conversion process. New and changed data should be tested against validation rules and only distributed to downstream systems once it passes all validation edits. Failed edit checks should be reviewed and scrubbed by a business/data analyst.</li> <li>• Avoid creating duplicate records or updating the wrong record by clearly defining the matching criteria for inserting a new record and updating an existing record (e.g., cash securities, dually listed securities, issuers, etc.).</li> <li>• Data scrubbing logic should include an effective date and/or system date so that corrected vendor data will update the relevant master record.</li> </ul>
Security Master	<ul style="list-style-type: none"> <li>• Consider segmenting the scope of the project by asset type such as domestic equities, foreign equities, corporate bonds, government bonds, municipal bonds, mortgages and derivatives.</li> </ul>
Portfolio/Account Setup	<ul style="list-style-type: none"> <li>• If the new accounting system supports a better portfolio/account structure, determine how best to leverage that structure to allow for proper client reporting as early as possible.</li> <li>• Determine which business units will be responsible for supplying the required account reference data and make sure each business unit buys into this strategy.</li> </ul>
Prices, Exchange Rates, & Corporate Actions	<ul style="list-style-type: none"> <li>• Prices and foreign exchange rates typically are loaded after the security reference data is successfully loaded. Does your system require that prices and exchange rates be loaded prior to conversion of accounting data?</li> <li>• Ensure that processes are established to detect missing or incorrect security price information, price tolerance failure, and missing corporate actions, all of which can cause pricing errors.</li> </ul>

## Implementing an Investment Accounting System Lessons from the Trenches

**Conversion** – Conversion strategy and process are critical components to a successful implementation. The ability to leverage automated conversion tools will help reduce risk and optimize resources.

Challenges	Considerations
Single or Multiple System Conversion	<ul style="list-style-type: none"> <li>• Conversion from a single system is clearly more manageable than converting from multiple disparate systems, including the migration of any manual or offline processes.</li> <li>• When converting from multiple systems, standardize conversion procedures as much as possible and carefully define a phased migration strategy to easily isolate the cause and source of problems.</li> </ul>
Automated/Manual/Hybrid Conversion	<ul style="list-style-type: none"> <li>• Are vendor tools available? If so, experiment with vendor conversion utilities to explore their features and file formats supported (fixed width, CSV, Excel, Tab Delimited, other) and determine whether they require tweaking to meet specific conversion requirements.</li> <li>• Moving thousands of records to a new environment is a major milestone, and the procedures must be extensively tested before the actual conversion process begins.</li> <li>• Determine how easy it is to re-convert if problems are encountered during the testing phase. A significant benefit of early data conversion testing is the opportunity to demonstrate new system features using actual historical data to broader audiences as part of the training and communication cycles.</li> </ul>
History	<ul style="list-style-type: none"> <li>• How much history is required, and available, to migrate?</li> <li>• Work with business users and systems teams to determine historical data requirements and migration limitations, if any.</li> </ul>
Period-Ends	<ul style="list-style-type: none"> <li>• When will each fund convert to the new system?</li> <li>• When establishing conversion dates for each portfolio, consider fiscal year-end reporting.</li> <li>• Conversion efforts will differ whether converting within a fiscal year, collecting data from multiple investment accounting systems or converting on a fiscal year-end and closing off the year on the old accounting system(s).</li> </ul>
Reference Data	<ul style="list-style-type: none"> <li>• Conversion of accounting data will assume that reference data (e.g., security master, portfolio master, etc.) is correctly stored in the applicable database tables prior to converting the accounting history.</li> <li>• Ensuring the integrity and completeness of all reference data prior to conversion will ensure the project is more efficient.</li> </ul>
Tax Lots, Average Cost Lots, Short Positions	<ul style="list-style-type: none"> <li>• Will tax lots be converted or summary holdings utilized?</li> <li>• Are there any special considerations for converting average cost lots?</li> <li>• Do quantity and cost fields for short positions need to be in absolute value format as opposed to negative amounts?</li> </ul>
Settled & Unsettled Trades	<ul style="list-style-type: none"> <li>• Settled and unsettled trades may need to be converted separately in order to properly establish a receivable/payable for the unsettled trades in the new system.</li> </ul>
Income Receivables	<ul style="list-style-type: none"> <li>• Be sure to understand the new system's requirements for converting open income receivables (e.g., dividends, coupons, paydowns, etc.).</li> <li>• Can the system set up open receivables independent of the trade lots converted?</li> <li>• Can open interest amounts be converted at either the lot level or position level?</li> </ul>
Cash & Ledger Balances	<ul style="list-style-type: none"> <li>• What are the new system requirements for converting cash and ledger balances?</li> <li>• Can/should ledger processing be enabled during conversion?</li> </ul>
Corporate Actions	<ul style="list-style-type: none"> <li>• Are there specific system requirements to ensure that corporate actions are converted properly and not double posted post-conversion?</li> </ul>
Reconciliation	<ul style="list-style-type: none"> <li>• Reconcile all converted data (e.g., units, cash, income, market values, etc.) to your prior books of record.</li> <li>• Note and review exceptions and, to the extent reasonably feasible, correct them prior to moving into production mode with the new system.</li> <li>• Wherever possible, employ automated reconciliation tools – vendor provided, other commercially available reconciliation tools, or in-house proprietary reconciliation tools. Set agreed upon tolerances.</li> </ul>

## Implementing an Investment Accounting System Lessons from the Trenches

**Accounting Considerations** – Identify how new functionality may change accounting methods and be prepared to deal with those changes (e.g., coordinating with auditors, addressing price or yield issues on conversion date, booking lump sum catch-up accruals, etc.). Enhanced functionality that allows customization of business rules to support new and complex security types, support complex and evolving fund structures, and address new accounting regulations and tax code changes, will require appropriate training.

Challenges	Considerations
Accounting Basis	<ul style="list-style-type: none"> <li>Does the new system support multiple accounting bases to enable storing transactions using different sets of accounting books and establish a default basis for each portfolio/account?</li> </ul>
Accounting Periods	<ul style="list-style-type: none"> <li>Are there specific considerations for establishing accounting periods?</li> <li>Can accounting periods be established to meet client-specific reporting requirements?</li> </ul>
Exception Processing	<ul style="list-style-type: none"> <li>Define and implement standard procedures for quickly and easily reviewing and editing exceptions with minimal manual intervention, and resubmitting the corrections back to the investment accounting system, which should back out and reprocess the trades and transactions automatically.</li> </ul>
Derivatives Processing	<ul style="list-style-type: none"> <li>Analyze available support for derivatives versus the current system and, where applicable, establish standard operational procedures for processing derivatives on the new system, including workflow changes.</li> </ul>
Data Retention	<ul style="list-style-type: none"> <li>What data needs to be retained and for how long?</li> <li>Work with auditors to determine data retention requirements and fully document and understand system requirements for archiving (and retrieving) data.</li> </ul>
Legal & Regulatory Requirements	<ul style="list-style-type: none"> <li>If the new system does not support applicable legal and regulatory requirements, such as Schedule D and Non-USD Tax Reporting out of the box, leverage resources, internal and/or external, who are knowledgeable in the specifics of the data and procedures required to produce complete and accurate reports.</li> </ul>
Methodology Differences	<ul style="list-style-type: none"> <li>Document client “methodology” differences. Client accounting practices across multiple asset classes may differ from the service provider’s accounting practices resulting in cost, income, or market value breaks. Work with client to gain acceptance and sign-off of these differences to minimize false breaks in conversion reconciliation process.</li> </ul>

## Implementing an Investment Accounting System Lessons from the Trenches

**Re-engineering Trade Operations Workflows** – Any major system implementation must be accompanied by a review of current processes, careful refinement of workflow, quality processes, operating procedures, and even human resource practices. Implementation of a new investment accounting system will likely require redefining some business processes and getting people to work differently. Careful attention must be applied in order to successfully optimize the benefits of the new system.

Challenges	Considerations
Process Flows, Procedures, & Documentation	<ul style="list-style-type: none"> <li>• Document current process flows and operational procedures for a complete picture of the current interactions of data, upstream and downstream systems, and people against which a future operating model can be developed.</li> <li>• Assess current requirements as well as future requirements, focusing not only on improving current operations, but also defining where business and technical operations need to be to remain competitive in the future (e.g., batch cycles may need to be replaced with intraday updates).</li> </ul>
Exceptions Management	<ul style="list-style-type: none"> <li>• Exceptions management is a critical component to realizing STP. Leverage all opportunities to eliminate manual exception processing, and establish an automated environment based on flexible content, quality, and integrity checks.</li> </ul>
Integration	<ul style="list-style-type: none"> <li>• Critical to the success of a new accounting system are carefully designed interfaces that follow industry standards as much as possible – interfaces from the trading system(s) to the accounting system; interfaces to/from the pricing system; interfaces to cash management, performance and attribution, client reporting, custody and more.</li> <li>• Seamless interfaces to and from all upstream and downstream systems are essential to firm-wide operational efficiency and internal and external STP.</li> <li>• Identify all inbound and outbound feeds, and coordinate and estimate integration efforts with recipient systems or feeding system vendors.</li> </ul>



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**Reporting** – Most systems are delivered with a standard set of reports and the ability to create customized calculations, reports, and queries to meet specific client requirements. A gap analysis should be conducted to determine the system supplies all reports required by the business units out of the box. Analysis should include examining business and system processes to determine whether the new system, inclusive of all dependent processes, can generate, approve, and distribute report packages within the service level agreements.

Challenges	Considerations
Reporting Packages	<ul style="list-style-type: none"> <li>• Should the existing report packages be delivered or should report packages be enhanced to take advantage of functionality supported by the new system providing clients with more complex, enhanced, and customized reports?</li> <li>• Can third party query and reporting tools be leveraged or is reporting functionality in the new system limited to the vendor's proprietary reporting tool? If the latter, you will need to identify resources – internal or outside consultants – with the requisite skill set to specify and develop required reports.</li> </ul>
Report Distribution	<ul style="list-style-type: none"> <li>• What are the distribution needs of the business?</li> <li>• Do reports need to be sent via email, web, ftp, etc.?</li> <li>• What scheduling requirements need to be considered?</li> <li>• Do clients with extremely tight timeframes within which report packages must be produced, approved, and distributed, require evaluation of alternative client reporting solutions?</li> </ul>
Report Management	<ul style="list-style-type: none"> <li>• Specify security levels (e.g., by business group) that define permissions to create and modify reports and report components.</li> <li>• Consider establishing a standard naming convention for reports and report components to streamline maintenance of the reports library.</li> </ul>

## Implementing an Investment Accounting System Lessons from the Trenches

**Testing, Training, & Rollout** – A new investment accounting system cannot be deployed successfully without significant testing, training, and a thorough rollout plan. Testing, training, and performance tuning are obvious areas where, with additional time, more can always be accomplished to make an implementation go more smoothly. However, no matter the testing period, some issues will remain in a large application upon cutover. The only true test comes when hundreds of users begin stressing the system in production. The same observation holds true for training and tuning; there is no such thing as too much of either. A proper assessment of when enough has been accomplished to make the go-live decision is critical.

Challenges	Considerations
Plan	<ul style="list-style-type: none"> <li>• Develop a comprehensive test plan to validate the acceptability of the accounting system.</li> <li>• Test plans should document both expected results and exceptions/error handling.</li> </ul>
Pilot	<ul style="list-style-type: none"> <li>• When possible, negotiate a trial period or a prototype demonstration using client data in as realistic a setting as possible. Executing a pilot or POC test will help to document functionality gaps in the target system.</li> </ul>
Scale Testing	<ul style="list-style-type: none"> <li>• To ensure coverage for business and product growth, test the system's ability to scale to support increased volumes and handle the stress of a large number of concurrent users.</li> <li>• Testing should simulate volumes and numbers of concurrent users for a typical processing day as well as peak processing periods.</li> </ul>
String Testing	<ul style="list-style-type: none"> <li>• Relates to specific functional testing and test cases.</li> </ul>
Regression	<ul style="list-style-type: none"> <li>• Bug fixes should be re-tested to ensure that the problems have been specifically resolved.</li> <li>• Be sure to include baseline functional checks that can be executed in a minimal amount of time to ensure that changes do not adversely impact existing functionality.</li> </ul>
Integration/UAT	<ul style="list-style-type: none"> <li>• Prior to moving into parallel, perform final testing of the overall system over some period of time to ensure that it meets end-user acceptance criteria, including response times.</li> <li>• Make sure that any required service level agreements have been reviewed and accepted by all parties.</li> </ul>
Parallel	<ul style="list-style-type: none"> <li>• Once the new system is set up, plan for a certain amount of time in parallel operation with both databases operational to ensure normal operations continue smoothly under the new architecture and to familiarize everyone with the new system.</li> <li>• Identify a team to perform the parallel (typically it takes twice as many people during this timeframe).</li> <li>• During the initial stages of the parallel, legacy system(s) should act as the primary system, with all accounting activity duplicated on the new system.</li> <li>• Institute a daily reconciliation procedure to ensure that daily data is identical on both systems.</li> <li>• The actual period of parallel operation will vary, depending on firm specific requirements. In most cases, it should include at least one month-end date, so that testing includes normal month-end processing.</li> </ul>
Production Cutover	<ul style="list-style-type: none"> <li>• Establish a plan to transition from parallel to production, making sure that sufficient resources are available to ensure a smooth transition and that the cutover schedule does not conflict with any critical period-end processing to minimize operational risk.</li> </ul>

## About Venture

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Venture is focused on the delivery of business and technology solutions to the investment industry.

A boutique consulting firm with over 20 years of delivering successful projects, Venture staff have 15-20+ years of in-depth investment accounting experience in operations and system projects.

- Projects include software evaluations, cost estimates and funding requests, proof of concept execution, strategy documentation for conversions, architecture and operations model designs, performance and stress testing, business workflows, system flows and lifecycle deliverables through to testing and implementation
- In depth knowledge of the Investment Management Process from Pre-Trade Analysis through Settlement across a wide range of Investment Products
- Full project lifecycle experience including business analysis, business process modeling, solution evaluations, system integration, testing, conversion and implementation, and enhancements to existing systems
- Extensive expertise in investment accounting systems and securities and transaction processing from an end-user and technical perspective
- Venture has performed numerous investment accounting conversions and implementations as a stand alone solution or as part of a platform to support an outsourcing model for large, complex institutions across complex fund structures
  - Venture has deep expertise in developing, testing, and implementing ETLs for converting and supporting client assets on various accounting platforms
  - Venture has extensive experience in developing and implementing strategic and core functional enhancements across multiple accounting platforms
  - Venture has led the way in the development of tools to automate conversion and reconciliation, reduce risk, and optimize resources – inclusive of conversion strategy, business requirements, through to testing, and conversion

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