



Michigan Department of Treasury, Bureau of Investments Chooses QED Investment Accounting and Portfolio Management System

CASE SUMMARY

Client Profile:

The Michigan Bureau of Investments manages \$52 billion in assets that are held as 13 separate pools of assets. The assets were held in four retirement plans based upon annually adjusted percentages.

Objective:

The Bureau wanted to implement a mutual fund or pooling concept and transition to a dynamic environment of daily NAV calculations, investments, and cash allocations. The Bureau also needed an updated, comprehensive investment accounting and portfolio management system to streamline their daily operations and workflow.

Solution:

QED Financial Systems, Inc. provided the Michigan Bureau of Investments with a real-time portfolio management and investment accounting system that provides complete front-to-back office functionality. Key system features include:

- Fixed Income, Equity, and Futures Coverage
- Multi-Currency Processing
- Fund Accounting and Cash Management
- Position and Trade Evaluations
- Reconciliation and Settlement
- DTCC Confirmation/Affirmation
- User Collaboration and Data Sharing
- Performance Measurement and Analysis
- Third-Party Import/Export Conduits
- Management Reporting and Client Statement Creation
- Operator-Friendly Interface

Overview

The State of Michigan, Department of Treasury, Bureau of Investments manages \$52 billion in assets that are held as 13 separate strategies or pools of assets. The assets were originally held in four retirement plans based upon annually adjusted percentages. The Bureau's objective was to implement a mutual fund or pooling concept that would allow the State to take advantage of the simplicity of mutual fund processing, while transitioning to a dynamic environment of daily NAV calculations, investments, and cash allocations. Concurrently, the State needed to satisfy the detailed allocation of accounting entries to their general ledger based upon current ownership percentages and needed to determine performance measurement results by strategies and by the four retirement plans. To satisfy accounting and regulatory requirements, the Bureau manually allocated each strategy's transaction to the four retirement plans based upon their percentage of ownership.

QED Solution

The Michigan Bureau of Investments' need for a comprehensive investment accounting and portfolio management system led them to QED Financial Systems, Inc. Due to QED's diverse capabilities and industry experience, the Bureau selected QED as their vendor of choice in September 2001. QED provided the Bureau with a complete, easy-to-use system that satisfied the Bureau's technical and business requirements. QED completely installed the system by April 2002.

The table below outlines the Bureau's specific requirements and explains the ways in which QED satisfied them.

Requirement	Solution
Pooled Accounting for Four Retirement Plans	QED utilized its existing common fund functionality, which allowed the four retirement plans the ability to jointly share in the pooled strategies. Once implemented, the four plans held unit investments in each of the 13 investment strategies, greatly simplifying the previous process of allocating each transaction into the four retirement plans. A variable rate NAV is calculated daily for valuation purposes and is also used to determine the number of units either received or surrendered as the plans contribute and withdrawal funds.

System Implementation:

QED's highly skilled project management and implementation professionals ensured timely and successful installation. As a full turnkey service provider, QED managed the implementation process from initial needs assessments through hardware and software installation, data migration, and user training.

User Benefits:

State-of-the-art graphical user interface screens promote a user-friendly environment. Menu-driven and blotter-based screens provide real-time access to all data stored within the system. As data changes occur within the network, users' screens are immediately and automatically updated to reflect the changes.

Users can customize the manner in which information is displayed on each screen, and user-defined data filters allow users to limit the information that is displayed. Each user can create his or her own customized screen displays and data filters, and the screens can be shared with other users.

Business Benefits:

The Bureau realized flexibility in real-time, user-friendly, fast, and interactive workflow collaboration, query processing, verification, and accounting. System downtime is virtually non-existent because all data is updated in real time. By eliminating the need for time-consuming, operator-intensive procedures, information is now available 24 hours a day, seven days a week, 365 days a year.

Using the pooled concept, the overhead of allocating each investment transaction to all four plans was eliminated. Additionally, the investment reconciliation process was simplified, as there is no longer a need to consolidate the holdings across the plans in order to reconcile with the custodian.

Daily Interface to the General Ledger

QED designed the general ledger interface to journalize transaction activity and portfolio valuation. The journal process was designed as a two-pass process. The first pass prepares journal entries at the strategy level, which allows reconciliation of the detail portion of the journal entry with the detailed investment data in QED. Knowing the Bureau's requirement for entries at the individual plan level, another pass of the journals is performed in order to allocate them back to each of the four plans.

The common fund unit investments became the basis for the breakout. Each of the four plans held unit investments in the 13 strategies. For example, a plans unit investment in strategy 1, in relation to the total units outstanding for strategy 1, became the percentage allocation. This percentage would be applied to the entry, and the appropriate chart of account codes was applied. This allocated entry represented the details for the daily general ledger extract.

Allocation and Accounting of Cash

The Bureau's requirement to track cash was well suited for QED's parallel cash accounting feature, which allows the user to establish a cash asset for the purpose of automatically tracking investment cash activity. As investment activity is posted, there is a corresponding, automatic offset to the cash account. For example, a purchase of a bond will cause not only an increase in assets, but also a decrease in cash. The balances remaining in these cash accounts necessitated the need for an automatic cash sweep to the short-term fund (discussed below).

Automatic Cash Sweep

Each day, investment activity would either generate or utilize net cash, leaving a balance within the cash account of each of the strategies and plans. Each day, the uninvested cash balances are automatically invested in a short-term fund. Again, utilizing our common fund processing, an automatic contribution transaction would be performed at each of the 13 strategies to the extent that the cash account had a positive balance. Conversely, withdrawals would be performed to cover negative balances. The effect would be to zero out the cash account, leaving the strategy/plan with increased or decreased unit investments in the short-term fund. An automated safeguard was developed to restrict a strategy or plan from withdrawing more than its unit investment in the short-term fund. The short-term fund was set up as a dollar fixed pool, which established a direct dollar-for-unit relationship.

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Accounting for Common Short-Term Funds

In order to effectively manage the short-term pool, the Bureau needed an automated process to consolidate cash daily, while taking into consideration the individual liquidity needs for each of the strategies and retirement plans. This processing was accomplished via the use of QED's common fund accounting. The same process was used as in the plan's investment in the pooled strategies, with the difference being the short-term fund represented a dollar fixed pool (rather than a variable NAV) given the short-term nature of the fund. Cash was consolidated utilizing a custom process, which swept cash from the strategies and plans to the short-term pool. The automated process is described in detail below.

Automated Reconciliation: Cash, Transactions and Positions

QED customized and developed interfaces from the Bureau's custodian, State Street Bank, for position and transactions. These two files are made available and sent via FTP to the Bureau's server by approximately 12:00 a.m. Several individuals are responsible for running both the position and transaction pair-offs. These pair-offs allow the Bureau to identify reconciling items within seconds, eliminating the need to tick and tie. This method of quickly identifying reconciling items was critical to the ability to calculate a daily NAV and feed the trading systems updated position by 9:00 a.m. each morning. In addition, this feature allows the user to set tolerances to help narrow reconciling items to only those that would have either a significant impact on the traders or on the calculation of the NAV.

The Bureau also wanted to utilize State Street Bank as their security-pricing source. As a result, an interface was developed to extract the current market price from the State Street position file and download it into QED for reporting and reconciliation purposes.

Automation of Trade Input from Front-End Trading Platform

The Bureau's goal was to attain full automation and near elimination of manual input, further highlighted by the need for a custom trading system interface to Macgregor's Predator trading platform. Two interfaces were required. The first would update the positions within the trading system, daily from QED, while the other would update QED for trades that had been executed during the day. A scripted process automatically picks up the Macgregor trade file and posts it to QED. As part of the posting process, two files are created—one representing the transaction that posted, and one representing those that did not post (if any) as a result of failing to pass QED's extensive transaction process and relational edit checks.

As mentioned previously, QED also produces a daily position file. This file contains portfolio holdings, market value, cash positions, and other descriptive data. The daily position file is run only upon completion of the daily account close.

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Limited Partnerships

The Bureau has significant limited partnership investments and needed the specific accounting to record return of capital, financial statement adjustments, and expenses associated with these investments. These three limited partnership transactions were custom developed to correctly handle the numerous dual entry transactions associated with limited partnerships.

Equity Swaps Investment Program

Customized reports were developed to link the individual pieces of the swap transactions or deal. Each deal needed to be viewed in and of itself for purposes of assessing hedge effectiveness as well as performance. Reports were designed to report transactions and positions on a deal-by-deal basis and also by counter party.

Performance Measurement for Strategies and Plans

QED utilized its existing performance measurement functionality to produce daily performance returns for each of the strategies. Performance was also required at the plan level and was calculated using the NAV previously calculated during the daily reconciliation process. Performance is calculated daily, producing true time weighted performance results in compliance with the Association for Investment Management and Research (AIMR).

About QED

Founded in 1987, QED Financial Systems, Inc. is the premier provider of portfolio management and investment accounting systems to institutional investment firms, pension funds, investment advisors, state treasuries, and other buy-side firms. We take pride in delivering one complete solution, rather than individual components of a system.

QED employs a technically strong and qualified team of professionals who specifically support the needs and requirements of their clients. Our extensive experience in the financial field allows us to leverage and deploy our diverse resources to offer our clients the best solutions, services, and support in the industry.

Currently used to manage more than \$1 trillion in assets, QED's innovative software solutions have gained wide acceptance within the financial community. Our expansive client list, coupled with our industry knowledge and experience, substantiate that QED solutions are *Quod Erat Demonstrandum*—that which have been proven.

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