



## CASE STUDY

# Trust Company of America Reduce Development Time and Costs on Complex Trading and Back-office Systems

### Industry

Financial Services

### Challenge

Reduce costs of maintaining complex data structures while launching a new application platform to meet constantly changing regulations.

### Results

- Reduced development time by 75 percent
- Saved \$500,000 annual outsourcing fee
- Ran 24x7 for 500 days with no scheduled downtime

### Products

- Rocket® U2 MultiValue Application Platform

### Application

- Trading and back office systems

## Company

Founded in 1972, Trust Company of America (TCA) is the largest independent Registered Investment Advisor (RIA) custodian in the United States, providing both trading technology and back office services. TCA has more than \$16B in assets under custody, making it one of the largest financial institutions in Colorado. The company offers fully integrated, real-time technology, state-of-the-art high-efficiency trading, specialized back-office support for advisors who sell through representatives, and a flexible, complete fee-management program.

## Challenge

TCA offers custodial services to a wide range of clients, from young families that have \$10,000 to invest in an IRA, to high net-worth individuals with hundreds of millions of dollars in assets. The company's strategy is to offer the same trading experience to all types of clients. Accordingly, TCA needed a system that could bundle trades from thousands of customers simultaneously, execute a single trade, and then break down and distribute the transactions back to the individual accounts all in real time.

The TCA core application platform includes what-if trading; complex algorithms that execute calculations to test a financial model using different assumptions and scenarios that change continuously, along with relevant regulations.

In addition, legislation now calls for custodial companies to provide accurate cost basis reporting on all trades and holdings. To meet this requirement, TCA must export every trade daily to a third-party company, then import updated information the next morning.

A typical relational database management system (RDBMS) would require eight or more indexed tables, and multiple nested joins, to implement what-if trading and provide the functionality TCA needed to satisfy its clients as well as regulators. Not only would this estimated solution be difficult to administer, it would also run into significant costs. Service provider estimates were approximately \$500,000 annually to set up and maintain, and proposals estimated at least two years to build.

## Solution

TCA selected Rocket largely because of its ability to model data in three dimensions—results that couldn't be achieved efficiently with a legacy RDMS.



“RIAs demand 24x7 performance,” stated James Capps, Chief Technology Officer at TCA. “We needed to be able to quickly implement critical applications. The Rocket® MultiValue Application Platform allows our developers to build, tear down, and recreate data structures, quickly and easily.” TCA has continued to evolve and modernize its core custodial and trading application with the Rocket MultiValue Application Platform, enabling investors and advisors to more effectively manage their books of business.

## Results

With the accelerated application development provided by Rocket MultiValue, TCA can build even the most complicated applications quickly and efficiently. Recognizing that an RDBMS wouldn't be able to handle the volume of change, TCA abandoned the idea of using it to address the legislative requirement for cost-based-reporting. TCA's Liberty application has millions of rows of data, and as the rows are processed, changes occur. In some cases, 200,000 or more rows of data could be discarded and replaced with new ones. Waiting for the RDBMS to perform was not an option.

Instead, the team successfully implemented the project using the MultiValue Application Platform, which has the flexibility and built-in ability to handle complex and changing data models. This approach enabled TCA to complete the project 75 percent faster, in six months instead of the two years projected by other service providers. TCA also eliminated the annual \$500,000 outsourcing fee, resulting in an extraordinary TCO. Perhaps best of all, the company was able to deliver more value to its RIAs through real-time reports.

The MultiValue Application Platform optimizes trading efficiencies for both small and large investors. The system relies on MultiValue technology's ability to handle changing data models, to bundle up thousands of individual transactions into a single trade. The trade is made by the application through a clearing house. The confirmation comes back through the system for all back-end sub-accounting of that trade, back to individual accounts. These applications run at optimal performance levels because the database structure is efficient and compact. While 10 percent of requests to the MultiValue application require some back-end processing, 90 percent elicit a response in less than one second, and 80 percent are answered in under 200 milliseconds.

When the trading is done and the markets close for the day, the MultiValue application continues running overnight, executing 3,000 processes at peak performance. Because its data structure is stable, reliable, and IT-efficient, the MultiValue Application Platform consumes less hardware and fewer network resources, and doesn't require scheduled downtime for clearing memory, cache, or logs as legacy RDBMS do. The ability to use system resources efficiently lets the TCA team keep the system up and running for 500 consecutive days when needed, providing continuous, optimal performance, and assuring a superior user experience.

As the MultiValue Application Platform evolves, TCA is finding new ways to build on its value proposition by investigating capabilities such as the use of Python and RESTful web services. These types of modern enhancements make it easier for TCA to hire new developers who are ready to hit the ground running—another positive development for the MultiValue system, TCA's advisors, and their clients.


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James Capps  
CTO

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