

**SUNGARD**

SOLUTIONS FOR  
BROKERAGE & CLEARANCE

## THE BRIDGE ACROSS DATA SILOS:

Aggregating data  
to increase efficiency and  
improve the customer experience

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# TABLE OF CONTENTS

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## 1 Solving the problem of disparate financial systems

- The data management challenge
- Streamlining data management

## 2 Stream, SunGard's single source solution

- Consolidated data, continuous processing
- Key features and advantages for the global arena
- Centralized reference and pricing data
- Extending financial data to advanced, cross-asset applications
- Distribution for reporting and Web portals

## 5 Built for high performance and scalability

## 5 Real-world scenarios

- Global broker-dealer saves \$5m despite increased trade volumes
- Global, cross-asset margin and credit risk monitoring
- Activity, positions and balances viewed across global markets
- Trade financing, collateral management for repos, and real-time margin and credit risk
- Advantages for prime brokers

## 7 Conclusion

## SOLVING THE PROBLEM OF DISPARATE FINANCIAL SYSTEMS

The securities industry is facing a challenge of disparate financial applications. Over time, the financial services industry has grown by creating or enhancing new product offerings. To deal with these offerings, firms have acquired diverse legacy environments consisting of individual point solutions, multiple databases and reporting modules, and technology infrastructures targeted at specific asset classes, business segments or markets. This trend is accelerating, as different types of firms, from exchanges and clearing corporations to broker-dealers, Futures Commission Merchants (FCMs) and banks, combine.

With a growing number of specialized systems handling the trading and processing of an increasing array of products and the proliferation of inconsistent market and reference data, the complexity of integrating, reconciling and processing data is hindering firms' ability to make day-to-day business decisions. These fragmented environments have also become obstacles to meeting key challenges such as providing firm-wide profitability, risk and other critical decision support essentials; monitoring and reacting to operational and market conditions across asset classes; maintaining order in a complex technical infrastructure; and providing clients with consolidated views of their overall investments.

The lack of consolidated, up-to-the-minute information and the limitations of legacy environments have made it difficult to make sound business decisions in a timely manner. However, in a global environment with increasing trade volumes and shrinking lifecycles, this is no time for more delays.

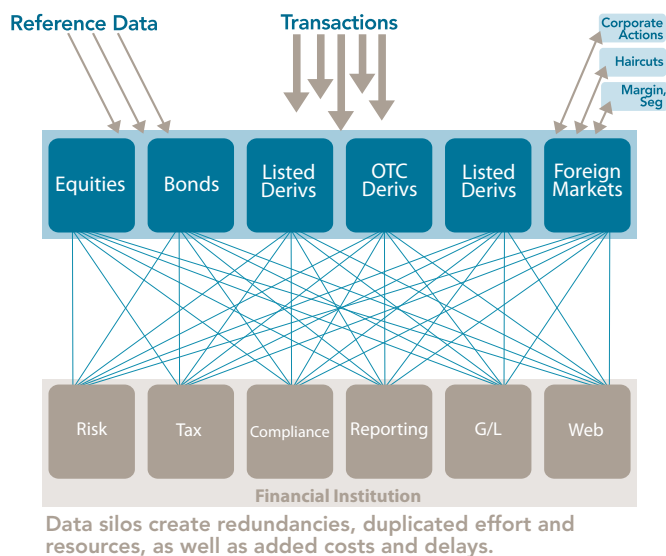
The answer to this challenge is data consolidation: a single solution that aggregates, normalizes, simplifies and delivers data from disparate systems into one repository of transactions, positions, accounts, market data, general ledger, reporting and more.

Consolidated data is the key to achieving straight-through processing and eliminating the duplication of data and processes and the resulting reconciliation. By aggregating and simplifying transactional and reference data, firms can become more agile and adaptable, even as new products, services and business lines add to volumes and complexity. At the same time, they can eliminate multiple points of failure. Most importantly, consolidation is achieved without reengineering processes, dramatically revising infrastructures, interrupting the normal course of business, or impacting clients.

### The data management challenge

Consider a common scenario: a firm using five different trading, execution or back-office systems will need to perform five times the number of calculations, corporate actions and general ledger postings.

These five systems also feed the firm's risk management systems with five separate interfaces and sets of processing for each piece of data. With numerous potential points of failure in the process, the risk of business and service interruption increases with every passing day.



This situation is all too familiar to many financial services institutions. Such siloed processing environments result in redundant processes, duplicated vendor contracts and multiple data operations teams. In addition, data quality becomes a serious issue with incomplete and/or incorrect data, as well as availability problems, resulting in a lack of transparency.

## Streamlining data management

Today more than ever, firms need a way to bridge data across traditionally distinct business lines to:

- Provide more timely and accurate risk analysis and access to information
- Simplify integration and eliminate redundant processes
- Show holistic views of accounts
- Give clients consolidated account information via statements and online access
- Provide business flexibility and the ability to trade 24/7
- Utilize operational data for advanced, cross-asset applications

From a reference data perspective, firms need:

- Better control and utilization of data through centralization and cross referencing
- Streamlined processes and the elimination of redundancies
- Increased transparency
- Quicker time-to-market for new products
- Increased operational efficiency through automation

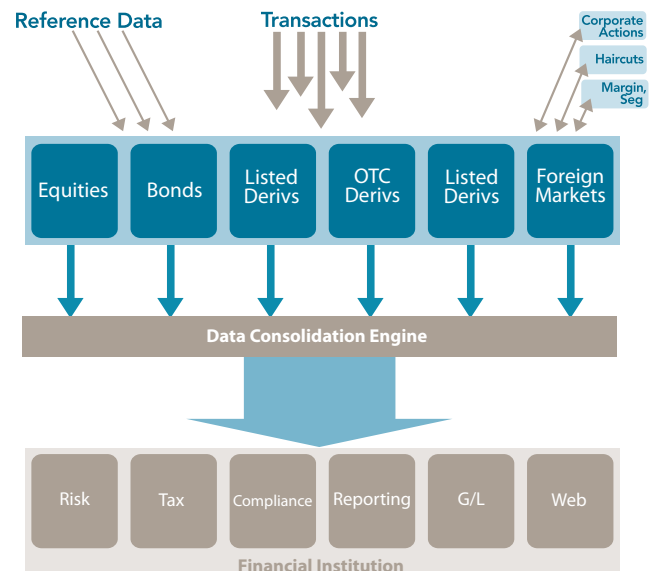
SunGard's Stream solution achieves this level of consolidation on a global scale by leveraging the strengths of its proven solutions for reference data, trading, books and records processing, clearance and settlement, data consolidation and decision support. Stream unifies the complete front- to back-office processing of the trade lifecycle, from trade entry to firm-wide decision support.

## STREAM, SUNGARD'S SINGLE SOURCE SOLUTION

### Consolidated data, continuous processing

SunGard provides a solution for continuous transaction posting and position management, the creation of normalized data repositories for multiple financial systems, and the delivery of data to the end user. Complementing any financial system, this central transactional database delivers a simpler, faster and more scalable environment that is real-time, continuously available and designed for high volumes. Processing the complete spectrum of trading activity at the firm, entity or account level, it gives firms the ability to capitalize on holistic views of accounts, generate more timely and accurate risk analysis, and access information 24/7.

At the center is StreamCore, a central, n-tiered On-Line Transaction Processing (OLTP) engine built upon a relational database model using leading technologies. This engine is designed to process the existing array of products currently handled in SunGard's Phase3, GMI and InTrader clearing systems, or any proprietary or non-SunGard system available in the industry.



The StreamCore transactional database provides firms with a central data resource for more streamlined front-to-back processing.

StreamCore provides a central transactional data repository from any number or combination of back-office, trading or execution applications the firm is using, whether they are proprietary systems developed in-house or installed or outsourced vendor systems.

The solution processes the complete spectrum of trading activity at the firm, entity or account level and spans traditionally distinct business lines, including equities, fixed income, derivatives, and FX. In addition, SunGard facilitates the processing of new instruments without requiring data model re-engineering and with minimal impact on development as product characteristics evolve.

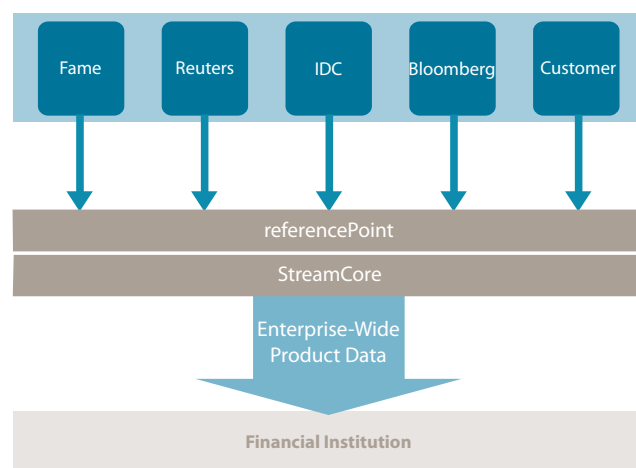
### **Key features and advantages for the global environment**

SunGard supports the globalization of trading and the expansion of trading hours as windows of downtime for batch processing cycles continue to shrink until they eventually disappear. Built for global processing, the Stream single source solution also includes integrated global trade cycle sequencing that:

- Creates user transparency across different local markets
- Supports a broad base of transactions and financial instruments, allowing for the consolidation of multiple vendor and/or proprietary systems
- Reduces migration/conversion risk by operating in conjunction with existing legacy systems while providing a phased path for retiring legacy systems down the road
- Features simple, as-of processing and historical corrections
- Simplifies the addition of new products and processes, giving firms the flexibility to capitalize on new opportunities as they arise
- Helps to reduce costs in data center resources and the maintenance of numerous operational data stores
- Interoperates easily with existing infrastructures
- Features high performance processing, currently benchmarked at more than 1 million transactions per hour

### **Centralized reference and pricing data**

Reference and pricing data are critical components for clearance and settlement applications, and for helping firms address their evolving data management needs. These applications require access to timely and accurate security reference and pricing data from multiple sources. Yet in today's climate of tightening regulatory pressure, financial organizations are faced with managing ever-increasing volumes of reference data across their enterprises. Reconciling independent data silos spread across different business lines and managing the consolidation of multiple feeds delivered in disparate formats add to this challenge.



Like its customers, SunGard handles a large number of instruments involving an increasingly diverse range of asset types. In addition, regulatory and industry changes are driving both new content requirements for applications as well as new operational requirements around the management of that content.

By creating a centralized data utility, SunGard is laying the foundation to better service firms' demand for higher quality data and flexibility to meet regulatory and new business requirements. The centralized data utility standardizes the processing of data across SunGard's solution portfolio. In this model, SunGard's referencePoint and StreamCore solutions act as the keystones to the centralized operational data store and allow content from data sources to be validated and cross-referenced (see diagram, page 3).

SunGard's referencePoint is a component-based solution that is designed to solve the problems associated with the collection, management and distribution of reference and market data across an enterprise. referencePoint acquires data from a range of sources, including third-party data vendors, internal SunGard sources and customer sources of data. The data is then normalized and validated through the application of rules and a thorough exception review and resolution process. From there, the data is cross-referenced, matched and assigned a unique SunGard identifier. The data can be enriched to meet the needs of specific users before it is distributed to users and applications.

With reference and pricing data managed and distributed from one utility, firms have a unique opportunity to reduce cost, risk and time to market while improving their focus on core competencies and business strategy.

### ***Extending data to advanced, cross-asset applications***

At the heart of SunGard's central database is its ability to support a wide range of financial instruments and transactions. Providing high performance processing, it leverages event management workflow and Web-based user interfaces to deliver consolidated data to advanced, cross-asset applications.

Around the database are discreet components that extend the engine's capabilities to provide specific application functions. These functions may be solutions firms are already using, or they may be SunGard's Margin Advisor or Report Writer solutions, which are designed to maximize the advantages of consolidated operational data.

### ***Real-time margin and credit monitoring***

In order to mitigate risk, more firms are demanding tools that provide real-time margin, cross-collateralization and credit monitoring across products. Margin Advisor computes, measures and monitors a wide variety of requirements and exposures in support of a firm's credit and risk aversion policies and procedures. The system helps firms manage risk and monitor their clients' leverage in fast-moving markets, highlight critical activity as it occurs, reduce human error and perform modeling scenarios.

In addition, Margin Advisor produces strategy- and risk-based credit and margin calculations for both European and U.S. financial institutions, providing firms with the ability to handle combined futures and options margin treatment within the same securities account. It supports U.S. Reg T and portfolio margin requirements simultaneously, providing a fully integrated credit monitoring and management solution that goes beyond risk-based haircut calculations to comply with portfolio margin rules. The system also supports multi-currency cross-margining of futures with index options in a risk-based, global environment.

### ***Data distribution for reporting and Web portals***

#### ***Consolidated reporting***

SunGard provides Report Writer, a standards-based solution for accessing and reporting on data from multiple back-office systems. Using integrated real-time and historical data contained in Stream, Report Writer provides users with the ability to design, modify and run a variety of reports on their own without the need for development or IT assistance.

### *Broker desktops and portals*

The ability to apply a common interface to a range of applications and users is also a key challenge to bridging the gaps between disparate applications. To answer this challenge, SunGard offers the flexibility of utilizing any Web portal or application programming interface (API) via Web Services.

SunGard also provides a common interface for multiple back-office systems and efficient information delivery to end users, allowing firms to access and manage operations from a single vantage point. With its rich suite of front-office systems, SunGard is well-equipped to provide turnkey, Web-based broker desktops and client access portals that tap the consolidated operational data stored in StreamCore.

## BUILT FOR HIGH PERFORMANCE AND SCALABILITY

StreamCore was developed using J2EE design patterns and currently leverages the WebLogic application server, Oracle database tools, and Sun Microsystems and HP Integrity servers.

StreamCore is proven to process large volumes of transactional data. A recently executed benchmark on a server containing 2 dual-core CPUs processed in excess of 1.1 million transactions per hour. Recent conversions of new customers have yielded in excess of 3 million transactions per hour in production environments.

In general, these results are largely attributed to the scalability that is architected into the application. Due to the fact that StreamCore leverages parallel processing designs and has the ability to scale across multiple CPUs and systems, it can attain very high levels of scalability and transaction throughput.

## REAL-WORLD SCENARIOS

Any financial services institution with multiple trading desks or financial systems can benefit from Stream. Here are real-life examples of how several SunGard customers have used or are planning to leverage Stream and other tools.

### ***Global broker-dealer saves \$5m despite increased trade volumes***

In multi-market, multi-product broker-dealer organizations, the ability to support multiple business lines in a flexible, holistic manner is crucial to doing business effectively and achieving bottom-line results.

One such organization has proven that various asset classes, traditionally treated as separate silos, can be merged into a single function by combining clearance and settlement functions. With a consolidated view of position, balance and trading activity across products, the firm achieved an effortless, aggregated assessment of customer activity and streamlined margin and credit risk processing as well as compliance reporting.

The firm uses SunGard solutions to deliver real-time status updates on domestic and international trades, immediately provide European and Asian branches with real-time exceptions across multiple time zones, allow for ad hoc queries on desktops and deliver trade and settlement data via a Web portal.

Using SunGard, the firm provides its hedge fund managers, correspondents and other affiliates with the ability to monitor and manage trades from execution through settlement using the same integrated view of activity, providing real-time processing of trade match and settlement status updates from Omgeo, DTCC, S.W.I.F.T., Euroclear and CREST.

In addition to providing customers with secure, real-time access to data via the Web, the firm's custom Web portal also provides online trade entry for done-away trades and supported FTP file uploads/downloads in order to book trades.

The firm was able to significantly reduce operational risk because its European headquarters and other branches throughout the world could see the status of trades continuously. Because StreamCore serves as its central operational data store, the firm is able to extend the use of that data for other applications, such as Margin Advisor. Margin Advisor provides the firm with the ability to continuously monitor, in real time, changes in positions, valuations and account activity; automate the resolution of margin calls; and assess credit exposures intraday.

Running all books and records on a single platform enabled the firm to eliminate the licensing and service costs associated with multiple back-office processing vendors, as well as a correspondent clearer. The firm has saved well over \$5 million in annual clearing fees and IT costs and reduced headcount by 23%, despite a 1000% trade volume increase since the same year.

#### ***Global, cross-asset margin and credit risk monitoring***

A large global financial services firm that runs SunGard's GMI for options processing and SunGard's Phase3 for equities processing uses Stream to consolidate and normalize data from both systems into a central data engine. By pairing options with equities, the firm is able to monitor margin exposures across both instruments more effectively, thereby helping to mitigate risk.

#### ***Activity, positions and balances viewed across global markets***

A global institutional broker-dealer using Phase3 for international securities processing wanted to view activity, positions and balances in aggregate across all markets and drill down on opportunities in specific markets. Using StreamCore for central operational data, the firm can view activity across all markets in any language or format and use Report Writer for consolidated reporting. Through a Web portal, it is also able to give users, trading desks and other groups flexibility in how information is viewed on-screen.

#### ***Trade financing, collateral management for repos, and real-time margin and credit risk***

A global broker-dealer uses a vendor system to process its futures business and a proprietary in-house interest rate swap system. By using Stream, the firm is able to build upon new functionality for repos and add cross-margining capabilities. In addition to using Phase3 to perform the traditional margin function (calculating intraday and end-of-day margin on equities and margin accounts), the firm plans to feed finance trades and derivatives products into Margin Advisor to track collateral management. This not only will help the firm improve its traditional margin processing with real-time capabilities, but it will also be able to extend functionality to more non-traditional areas to help monitor and control risk.

The common thread in each of these user scenarios is the power of aggregated data and the need for flexibility to solve the problem of disparate systems and create a simplified environment that supports innovative applications. By bringing together data silos, firms can perform cross-margining, view activity across markets and leverage the combined data for a virtually limitless array of uses and advantages.

### *Advantages for prime brokers*

SunGard also can help prime brokers obtain cost savings, better manage risk, expand their markets and perform cross-product valuation while extending enhanced services to hedge fund clients. Potential savings for prime brokers can be realized by consolidating data sent to statement vendors or other applications within the prime broker's technology infrastructure, such as margin, risk management and trading systems. Stream can also offer the prime broker a more effective way of managing risk with the ability to see combined exposure while also supporting strategies to expand into new markets and attract more business.

## CONCLUSION

Technology is vital to helping bring information together to achieve holistic views. Aggregating data from multiple sources into a single, continuously available data store gives firms the ability to process instruments on one platform and capitalize on consolidated views of accounts, more timely and accurate risk analysis and access to information, and the ability to trade 24/7.

Through SunGard's centralized data technologies, financial institutions involved in equities and fixed income trading, futures and options, repos and swaps, managed investment portfolio and safekeeping—and many other activities—can more easily bridge the gaps between products and business lines.

Only SunGard has answered the challenges of achieving the consolidation of financial systems on a global scale. Complementing any financial system, SunGard delivers a simpler, faster and more scalable environment that is real-time, continuously available, and designed for high-volume processing.

However, it does not stop with consolidated data. Stream helps to maximize all that aggregated data can offer with advanced cross-asset applications that are designed to efficiently utilize the data, such as real-time margin and credit monitoring, consolidated reporting and online services for clients.

Financial services institutions can finally embrace the power of consolidated, real-time data to reduce the cost, risk and manual effort that continues to plague the securities industry. The firms that centralize their core data will be in the best position to evolve their businesses in line with new client demands and growth opportunities.

[www.sungard.com/streamcore](http://www.sungard.com/streamcore)

### **About SunGard**

With annual revenue of \$5 billion, SunGard is a global leader in software and processing solutions for financial services, higher education and the public sector. SunGard also helps information-dependent enterprises of all types to ensure the continuity of their business.

SunGard serves more than 25,000 customers in more than 50 countries, including the world's 50 largest financial services companies. Visit SunGard at [www.sungard.com](http://www.sungard.com).

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