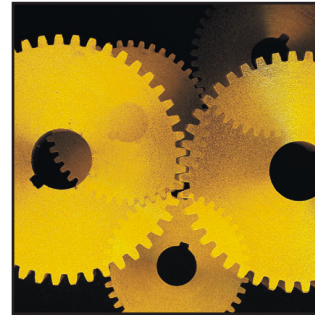
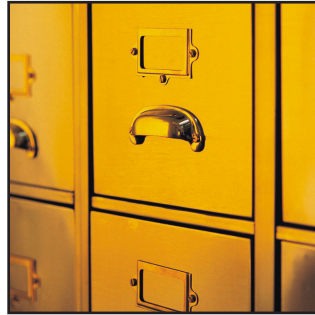


Contents



The Drive for Straight-Through Processing . . .3

- Introduction

Sun: The Practical Approach to STP4

- An interview with David Littlewood, Director of Worldwide Financial Services, Sun Microsystems, on Sun's eSolutions for STP.

Getting Your Arms Around STP6

- As Director of eSolutions Consulting in Sun Microsystems' Services business unit, Ed Schwarz oversees various teams positioned to meet the demands of several key STP pain points, head-on.

All Systems Go10

- Cost control is paramount on Wall Street, so why do STP projects still get the green light? We put the question to Salomon Smith Barney's Jim Leman.

Where STP Meets Reality: Sun's iForce Solution Centers14

- By providing state-of-the-art testing facilities for straight-through processing solutions, Sun Microsystems' iForce Solution Centers enable customers to 'try-before-they-buy' critical STP technology.

Best-of-Breed in a Time of Need for STP. . . .16

- Realizing that no single vendor possesses the resources to meet the industry's STP needs, Sun Microsystems created the iForce partner community as part of the eSolutions for STP initiative.

The Drive for Straight-Through Processing



In every discussion I have with other CEOs, whether they're in finance or manufacturing, retail or media, telecommunications or health care, the subject invariably returns to the one thing we all have fixed in our sights: the bottom line.

It's all about return on investment. The sooner the better.

And nowhere is the drumbeat of ROI louder than in financial services, particularly in capital markets, where securities firms face diminishing trade margins, falling volumes, and a host of new regulatory requirements.

For most capital markets executives, the answer to these challenges lies in a fundamental redesign of their business and technology systems to achieve straight-through processing. They know that STP, far from being confined to equity trading systems, affects all parts of their businesses.

Although the Securities Industry Association shelved the T+1 deadline following the tragic events of Sept. 11, 2001, STP remains as important as ever. Decision makers realize that replacing manual processes and linking systems together — systems that today operate as independent, often incompatible, silos — can reduce errors and cut costs. More than that, it can increase performance and improve customer service, the foundation of customer loyalty.

As I hear so often, STP is no longer thought of as the operation manager's headache, but as a critical boardroom issue.

One of Sun's first markets twenty years ago was the securities industry, so we have been working with business and technology executives on the issues of STP for years. To meet the STP needs of our capital markets customers, we recently launched our eSolutions for STP initiative. This initiative consolidates all of our STP-related business lines under a single umbrella, supported by a dedicated Sun Services STP consulting team and an extensive community of STP software vendors and integrators who are members of the Sun iForceSM program.

As part of this initiative, we have created reference architectures with short-term ROI for some of the most critical STP pain points — things such as exceptions management, VMU gateways, batch to real-time core processing, reference data, and trade compliance.

This twenty-page supplement provides an in-depth look at the eSolutions for STP initiative, including profiles of some key Sun iForce partners. We also explore the concepts driving STP development and examine some real-world examples to illustrate how STP is working today.

We also encourage you to come visit one of our iForce Solution Centers, where you can test drive our STP solutions for yourself. ●

➔ **By Scott McNealy, Chairman, President & CEO of Sun Microsystems**

Sun, Sun Microsystems, the Sun logo, Solaris, Java, Sun StorEdge, EJB, Sun Enterprise, Netra, iForce, Sun Developer Community, and the Network Is The Computer are trademarks or registered trademarks of Sun Microsystems, Inc. in the United States and other countries. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

Sun's Approach to Trade Lifecycle

Sun: The Practical Approach to STP

4

5



→ This diagram shows the internal systems in place at a sell-side firm in the context of other external links, and illustrates the major STP pain points that Sun Services is currently addressing with reference architecture solutions.

The large orange "pipe" connecting the blue rectangles in the "Sell Side" box is the Transaction Pipeline; the blue rectangles themselves are the Core Systems; together with Risk Management (which spans the Front and Middle office), these constitute the components of Internal STP. The surrounding boxes — "Buy Side", "Execution," and "Settlement" represent the targets for External STP, including the Buy Side and the Exchanges, ECNs, VMUs, Market Data providers, Market Services, etc.

An interview with David Littlewood, Director of Worldwide Financial Services, Sun Microsystems, on Sun's eSolutions for STP.



To meet the demands of the capital markets, Sun has been delivering solutions that automate and integrate all parts of the trading process for more than seven years.

During this time, extensive experience has been built up through numerous customer engagements, strategic partnerships with best-of-breed providers, and new product deployments, to the point today that Sun has the ability to deliver both specialized projects and long-term overall strategies — each delivering a demonstrable ROI.

The culmination of this experience has been the recently announced eSolutions for STP initiative. The initiative includes a dedicated Sun Services practice that designs critical STP-related solutions based upon the extensive community of Sun iForce partners who develop and deploy their products on Sun. In addition, the initiative provides customers with access to Sun iForce Solution Centers, which are unique test environments where they can test and implement the right STP solutions for their business needs.

"Today, virtually all of the companies that provide STP solutions offer them on the Sun infrastructure platform," said David Littlewood, Sun's Director of Worldwide Financial Services. "We've concentrated all of our STP-related resources to develop solutions that offer both short-term benefits, and a long-term vision to achieve STP."

With the goal of breaking down STP into

attainable pieces, Sun has dissected the trading lifecycle, and has structured its STP initiative to address each of the four critical areas that comprise the trading process.

Three of the areas, including transaction pipeline, core systems, and risk management, address aspects of STP that are internal to a securities company. The fourth area, market connectivity, focuses on minimizing the external hurdles to achieving STP.

"By being able to specifically target for improvement any link in the trading process, customers can execute on their long-term STP strategies through short-term projects with proven ROI," said Littlewood.

Below are the detailed descriptions of the four areas of the trading cycle with the specific pain points Sun is addressing with architecture reference solutions.

The Transaction Pipeline: Buy or sell-side firms and custodians need to transfer trade details between numerous in-house systems — front to middle to back office. The ideal is a single system with all functions internally connected and interoperating. As

"Today, virtually all of the companies that offer STP solutions offer them on the Sun platform."

this is where the trade actually originates, this is usually the first area Sun and its partners look to help customers streamline their systems. A particular pain point within the transaction pipeline is exceptions management.

Core Systems: Core systems are the central hubs that provide the necessary processing functionality for a capital markets firm. They represent the engines to which the transaction pipeline connects. Buy-side, sell-side and custodian firms are under pressure to adapt their existing core systems to changing requirements, reduce TCO, and ensure ongoing flexibility.

>> Continued on page 13

Getting Your Arms Around STP



>> As Director of eSolutions Consulting in Sun Microsystems' Sun Services business unit, Ed Schwarz oversees various teams positioned to meet the demands of several key STP pain points head-on.

Question: Why did Sun create a services practice dedicated to addressing STP-related projects?

Ed Schwarz: Sun assembled our STP services practice to meet the overwhelming demand in the securities industry for solutions that are cost effective, increase efficiency, and lower risk. These make up the business case for STP, which fundamentally is about doing securities transaction processing better, faster, cheaper. On the other hand, STP is a huge issue which needs

to be tackled one project at a time. With over seven years of working with customers developing STP solutions based on our open, scalable architecture, Sun simply has the architectural resources no one can match.

Q: What does this mean for the customer?

ES: Essentially, our services practice offers dedicated consulting expertise which brings together our technology, reference architectures, and our plat-

form of software and hardware. Our services are focused on leveraging and architecting Sun and partner technologies to achieve the critical service levels which financial firms require. Drawing upon years of interacting with customers, our consultants have the knowledge and



Ed Schwarz, Director of eSolutions Consulting in Sun Services

skills to attack key pain points at each phase of the trading cycle. We've developed reference architectures for each of these pain points to enable the customer to jump start solving the problem.

Q: What are the pain points?

ES: As we all know, no one company provides a solution for STP. STP is a goal. It consists of probably dozens, if not 100s, of projects to achieve a truly automated trade cycle. With considerable input from our customers, Sun has identified five key areas, or pain points. They are, in no particular order, exceptions management, reference data, core processing, trade compliance, and VMU (Virtual Matching Utilities) gateways. These are the top five areas today that our customers have identified as the best areas to focus on that will provide a short term ROI while laying the groundwork for the longer term goal of STP.

Q: How did Sun identify these particular STP pain points?

ES: By speaking and working with customers, not only before and during implementation, but after the rollout, we gain invaluable insight into everything that can, and will, go wrong or right. At Sun,

we call this the "voice of the customer," and we've been listening. Also, we have worked extensively with strategic partners, we learn what it is that makes them the best-of-breed providers that they are.

Q: How do the five STP pain points relate to the four trade lifecycle focus areas?

ES: The trading process can essentially be divided into four broad technology areas, from initiation all the way through settlement (see chart on following page). Within these areas exist the five STP pain points that Sun believes customers absolutely have to address head-on. These are the ones that will provide ROI in the short term.

Q: What if a securities firm doesn't address these pain points?

ES: Well, as every company is different, they're going to have varying degrees of stress at each of these pain points. But what we've found is that companies will need to address each of these issues at some point in time to attain the overall goal of STP.

Q: So are there other pain points?

ES: We've put in a lot of work with our customers identifying these five pain points, but it's ongoing work that is part of our overall strategy. We're confident we've addressed the key pain points today, but we'll expand our practice accordingly to meet new challenges.

Q: Let's take a look at some of these pain points. Describe exceptions management.

ES: Surprisingly, many firms today still rely on a manual process to monitor, investigate, and reconcile trade exceptions.

Sun's Take on the STP Challenge

	Sun STP Focus Areas	Sun Services' STP pain points (Reference Architecture Solutions)
Internal STP	Transaction Pipeline	• Exceptions Management
	Core Systems	• Reference Data • Core Processing
	Risk Management	• Trade Compliance
External STP	Market Connectivity	• VMU Gateways

Sun partners with ISVs — Pacemetrics and Connexive, for example — to provide both tools and processes needed to streamline the handling of trade exceptions, including auto-correction of exceptions and reduced duplication of effort. The analytics used provide timely identification of key risks and trade exceptions. The result is a lower cost per trade, a faster settlement time, and earlier risk identification.

Q: How about reference data?

ES: A recent Reuters study showed that 79% of respondents agree that inconsistent, inaccurate, and incomplete reference data add time and cost to the trading process. Sun's iForce partners, Asset Control and Access International, among others, provide flexible, consistent, and unified reference data solutions that generate fewer trade exceptions, produce greater efficiency at a lower cost per transaction, and reduce the risk of compliance violations.

Q: What about core processing? Aren't these systems already in place and working?

ES: The traditional back-office systems used by many firms are tied to heavy batch processes embedded in proprietary technology. Because these

batch processes occur sequentially, they add cost, time, and risk, representing a major barrier to implementing STP solutions. Sun's iForce partners — for example SunGard — offer real-time, open-component based core processing solutions that provide greater operational efficiency and confidence, reduce overall risk, enable faster settlement time, and provide greater flexibility. For organizations which feel that they cannot rearchitect these systems over the short run, Sun can show terrific gains in speed, flexibility, and overall reduced total cost of ownership by migrating those systems to our platform.

Q: Trade compliance?

ES: Lower trade risk and cost can be achieved by identifying potential trades up front that do not comply with regulatory requirements, portfolio charter guidelines, or best practices. This area requires advancing the data capture as far forward into the front office as possible, and then coupling advanced analytics with event notification and management to achieve a real-time, responsive risk management infrastructure. Sun iForce partners, like Algorithmics and Reuters, leverage the Sun platform for this mission-critical business need.



Q: And lastly, how do you navigate problems with VMU gateways?

ES: Looking into the future, we will see increasing use of network hosted services — VMUs are just the beginning. In order to reduce the risk of redundant connectivity and integration projects, Sun recommends that firms use a unified approach to connect to networks.

Sun solves this challenge by integrating its advanced vision for distributed Web services, in depth knowledge in PKI-based security, and domain partners, ensuring that connectivity is a strategic decision as opposed to a tactical response. Sun iForce partners, such as Financial Fusion and B2B ITS, draw together business functions and industry standards from FIX to 15022 and SWIFT to the VMUs to facilitate efficient trade messaging. This incurs less development, infrastructure, operational, and connectivity costs; provides a high level of reusability and flexibility when connecting to VMUs, and improves counter-party communication.

Q: So, why is Sun better positioned to help firms take the steps to achieving STP than your competition?

ES: Sun has been a thought-leader in the capital markets since the early 80s, and developing STP-related solutions for more than seven years. Having worked directly with customers and partners to

identify these STP pain points, Sun has the expertise in architecture development that no one else has. And, no other company has the Java technology platform and IP networking expertise that Sun has to help you attain ROI on these smaller projects with the bigger architecture picture in mind.

LIFFE With Sun and STP

In the late 1990s the London International Financial Futures and Options Exchange (LIFFE) lost its single biggest source of income: trading in the German Government "Bund". The exchange's customers moved all their business in the Bund from the trading floor at LIFFE to the Deutsche TerminBörse, which could, through its screen-based trading platform, offer London-based customers remote access to its market at lower cost.

Today, with the help of Sun Microsystems and its iForce partners, LIFFE has transformed itself from an open-outcry to the largest electronic trading exchange in the world — currently trading 216 million contracts worth £154 trillion.

Within only twelve months slated for development, LIFFE required an electronic platform that was fast and supported highly flexible trading, while also providing a high level of integration for the front, middle, and back office operations of its members, thereby reducing their cost and risk exposure. Using Sun's Solaris Operating Environment on Sun hardware, the exchange developed LIFFE CONNECT, its powerful electronic trading platform launched last year.

"LIFFE CONNECT has been a big success; it has increased global access to the LIFFE market and we have already exported it to other trading centers," said Allan Mycroft, Director of Global Service Delivery, LIFFE. "We're already looking forward to working with Sun to prepare the exchange for running the next generation infrastructure." ©

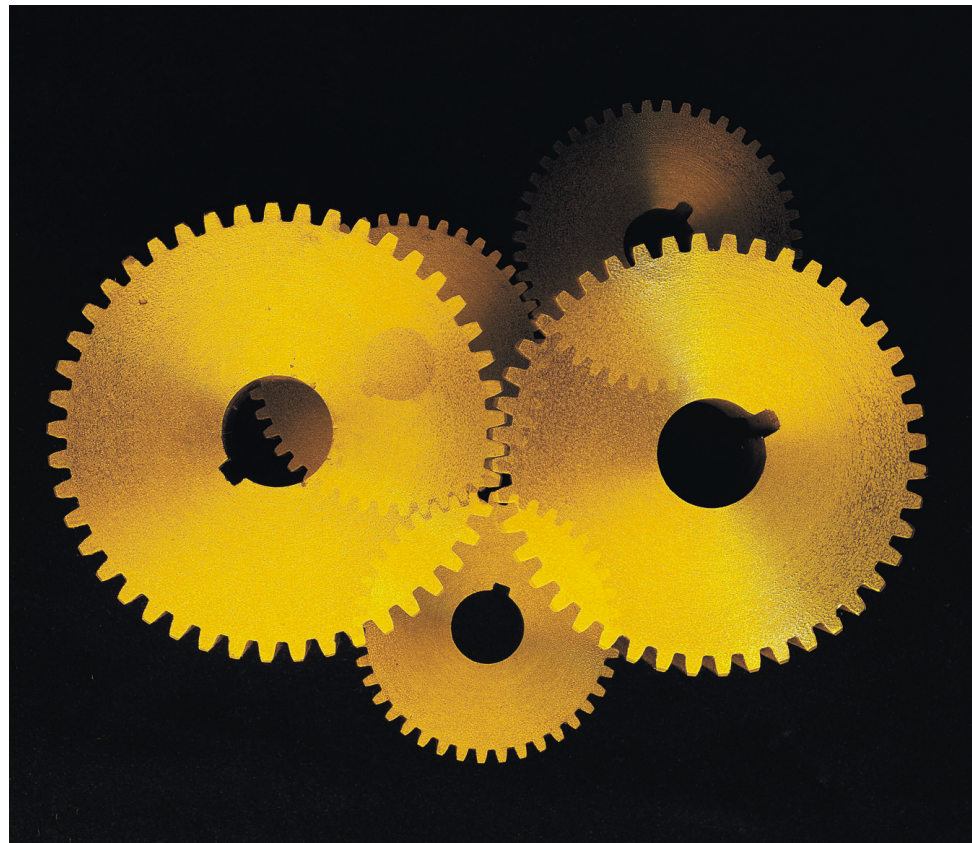
Q: How does a company engage with Sun to begin working on solving these pain points?

ES: Call me at **212.558.9033**, or email stpsolutions@sun.com to set up a meeting.

Or, go to: www.sun.com/finance for further information. ©

All Systems Go

>> Cost control is paramount on Wall Street, so why do STP projects still get the green light? We put the question to Salomon Smith Barney's Managing Director Jim Leman

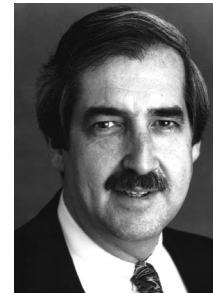


The SIA's decision to put T+1 on hold left many people worrying that the industry's straight-through processing efforts might stall. But not Salomon Smith Barney's Jim Leman.

Leman first recognized the importance of STP back in the late 1980s when he helped outline the requirements for what was to become Salomon Smith Barney's global electronic order management system. Today, as Managing

Director of electronic equities trading, he is responsible for connectivity with the firm's buy-side clients, and well placed to confirm that "the STP project" is alive and well.

T+1 put a stake in the ground, he says. It made people take STP seriously, but the initiative was somewhat misconceived: "You can have STP without T+1, but you can't have T+1 without STP. The way to do it is to have STP first, then move



Jim Leman,
Managing Director of
Electronic Equities Trading,
Salomon Smith Barney

towards shorter settlement cycles."

But STP is about much more than reducing the time it takes to settle a trade, Leman argues. In today's tough economic climate, with cost control

the top priority, STP spells greater efficiency — and that is the only way brokerage firms can remain competitive in the face of continuing pressure on commissions. "Large brokerage firms have got to pursue STP in every way they can from their largest to their smallest customers," he says. "A botched trade of 100 shares can take up just as much clerical time as a 25,000-share trade: your small customers can cost you as much money as your large customers in that respect."

Sell-side firms like Salomon Smith Barney have made good progress with STP — in their front office and operations areas, at least — but there are other players in the game. The next step is to extend the sphere of automation to include their buy-side clients, and that's now happening, thanks to the spread of the FIX protocol. "We have upwards of 1,000 cus-

tomers connected to us electronically across over 20 proprietary systems and 20-25 order management systems that reach us across 12 different networks," says Leman.

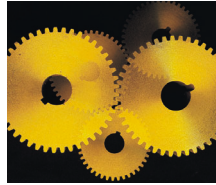
"FIX has been embraced by the largest money managers. The task now is to enfranchise the next layer of firms, be they private banks in Switzerland or asset managers in Japan. These guys don't have the budgets, so there need to be

more cost-effective solutions to enable that connectivity to happen. I think over the next two years we will see products that will provide a cost-effective way for even the smallest money manag-

er or hedge fund to begin controlling their business electronically."

FIX has emerged as a key enabler of STP, but what of the virtual matching utilities? Are Omgeo, GSTPA, and other VMUs part of the STP picture as well? Leman is convinced they are. "We suffer from the fact that, while there are protocols in certain areas, we don't have a totally integrated standard from the beginning of the trading process to the end. There are the ISO standards in the post-execution space, and SWIFT is moving towards an XML standard that will be good for a wide range of products."

"You can have STP without T+1, but you can't have T+1 without STP. The way to do it is to have STP first, then move towards shorter settlement cycles."



"If the messaging standards were strong enough, for a certain class of customer, the VMUs might be redundant. But until we have those standards, a VMU provides a way for different parties to interact with one another around a trade."

If FIX and the VMUs are STP's technical enablers, the dynamics of the business are driving the process further. As lower commissions force brokers to become more cost-efficient, those firms can use

Since brokers have to spend money to connect to those customers, the trick is to turn the investment to advantage with the rest of their customer base, delivering the highest possible levels of service, sometimes inducing customers to embrace a level of technology that they can benefit from, but may not have thought of themselves."

For their part, custodian banks have a role to play in the STP game by offering incentives to customers. "They may have to switch to a different pricing model that

The Costs of Not Investing in STP

For those still sitting on the fence, not investing in STP technology can be costly. According to SWIFT, the industry-owned cooperative that supplies secure messaging services and interface software, the lack of STP across the securities industry costs the industry upwards of \$12 billion annually. This comes from the need to manually intervene as the record of a trade passes between systems.

The estimated costs of various types of failures include:

- 59% of instructions need repair and query \$ 6 cost of repair
- 10% of confirmations result in mismatches \$16 cost of mismatch
- 15% of transactions fail to settle on time \$50+ cost of solving settlement failures

According to these statistics from SWIFT, a failed trade can cost as much as \$72 to process — a hefty loss relative to today's commissions of \$10-20.

For more information, refer to Omgeo's white paper at: www.omgeo.com/docs/omgeo_evolve.pdf

that efficiency to renegotiate relationships and promote STP among their clients, Leman argues. "Our customers would like to pay less commission; they want to have more control over their orders and to do what they call low-touch and no-touch business. We have to adjust our expense base to coincide with the kind of trading customers want to do."

"The big investment managers who can afford to spend more on technology generally demand the highest levels of service.

says, if you are efficient, it is going to cost you less — but if you are inefficient, it is going to cost you more," Leman says. Brokers can use similar tactics to renegotiate commissions, but in both cases, firms will need to evolve and refine their management information systems to understand how their pricing model applies to individual customers.

So where does Leman predict that STP will be by mid-2005, the point at which T+1 was due to slot in? "I think we will see progress towards STP, in that a

much larger base of customers will be connected," says Leman. "We will have fine-tuned management information systems in place at brokers and also their customers. There will be much more dialogue and a growth in the

relative importance of customer service efficiency in the post-execution space in terms of money managers deciding where their commissions are spent. And you will see a laser-like delivery of

exceptions, because everybody will be seeking to resolve problems quickly."

But ultimately, says Leman, all sides must play their part. "No man or woman is an island and you need equally competitively tuned systems to do trading. If investment managers want to get the best commission rates it will depend on how efficiently they process their business. Buy-side customers will need to be more STP-oriented to live up to their part of the deal." ●

"A botched trade of 100 shares can take up just as much clerical time as a 25,000-share trade: your small customers can cost you as much money as your large customers in that respect."

>> Continued from page 5

Working with Sun and its partners, customers can replace their core systems by either buying a complete package, building one from components, or keeping the old system but integrating new functionality. The key pain points for core systems solutions are moving from batch to real-time core processing and having consistent reference data.

Risk Management: Lower trade risk and cost savings can be achieved by up front identification of potential trades that do not comply with regulatory requirements, portfolio charter guidelines, or best practices. Trade compliance is a specific pain point in risk management.

Market Connectivity: The capital markets environment will become increasingly communication-based and network-centric. Sun provides essential access to IP networks and processing intelligence on imported and exported messages at the firm's boundary, and across the trade cycle as it moves from

front to middle to back office. A particular pain point within market connectivity is VMU (Virtual Matching Utilities) gateways.

In each of the four areas of the trade lifecycle above, there exist particular challenges that are so complex that Sun has dedicated experienced resources to specifically address them. Ed Schwarz, Director of the eSolutions Consulting group, describes in the article on pages 6-9 what the concept of a pain point is, and why Sun has devoted extensive resources to addressing it.

"As everyone knows, STP is a complex challenge," said Littlewood. "Our eSolutions for STP initiative will be able to help our customers simplify this complexity by focusing hardware and software platform products — Solaris™, Java™ technology platform, XML, Sun™ ONE, the architectural expertise of the Sun Services group with the domain knowledge and experience of our iForce Community to provide STP solutions that customers can implement today." ●

Where STP Meets Reality: Sun's iForce Solution Centers

Sun Microsystems consolidated its extensive STP development operations into a single initiative earlier this year: eSolutions for STP. This initiative not only encompasses a large community of best-of-breed solutions providers (Sun's iForce partners) and a dedicated services STP practice, but importantly

includes the Sun iForce Solution Centers — state-of-the-art facilities where Sun's customers' solutions are actually conceived, deployed, and tested before they are purchased.

includes the Sun iForce Solution Centers — state-of-the-art facilities where Sun's customers' solutions are actually conceived, deployed, and tested before they are purchased.

includes the Sun iForce Solution Centers — state-of-the-art facilities where Sun's customers' solutions are actually conceived, deployed, and tested before they are purchased.

includes the Sun iForce Solution Centers — state-of-the-art facilities where Sun's customers' solutions are actually conceived, deployed, and tested before they are purchased.

includes the Sun iForce Solution Centers — state-of-the-art facilities where Sun's customers' solutions are actually conceived, deployed, and tested before they are purchased.

includes the Sun iForce Solution Centers — state-of-the-art facilities where Sun's customers' solutions are actually conceived, deployed, and tested before they are purchased.

includes the Sun iForce Solution Centers — state-of-the-art facilities where Sun's customers' solutions are actually conceived, deployed, and tested before they are purchased.

includes the Sun iForce Solution Centers — state-of-the-art facilities where Sun's customers' solutions are actually conceived, deployed, and tested before they are purchased.

includes the Sun iForce Solution Centers — state-of-the-art facilities where Sun's customers' solutions are actually conceived, deployed, and tested before they are purchased.

includes the Sun iForce Solution Centers — state-of-the-art facilities where Sun's customers' solutions are actually conceived, deployed, and tested before they are purchased.



Customers discussing a proof-of-concept based on Sun ONE architecture in the iForce Solution Center in Sun's Executive Briefing Center, Menlo Park, California

"We prototype a business solution that matches a customer's unique business needs," said Nancy Fuller, Group Manager, Sun's Worldwide iForce Partner Marketing. "The purpose is to determine the proper combination and specific product versions of systems, software, and services needed for a solution, and to ensure that the proposed solution is viable."

grators, and top-caliber software vendors — all in one place at one time, all focused on the customer's individual needs and requirements.

"Currently, there are 14 Sun iForce Solution Centers located around the world, six additional competency centers that each focus on a single independent software vendor, and over 50 iForce partner centers, which are oper-

Sun Provides the STP Support Needed by Omgeo's Trade Management Solution

Searching for a way to increase the interoperability of all trading partners linked to users of its suite of Intelligent Trade Management Solutions, Omgeo officials turned to Sun Microsystems because of its unique performance abilities.

Providing interoperability between trading partners is a crucial element to Omgeo's "any trade, any time, any place" strategy. It is this functionality, enabling seamless connectivity among investment managers, broker/dealers, and custodians that is essential for achieving straight-through processing. So, after forming specific criteria and reviewing all potential candidates, Omgeo tapped Sun.

What drew the attention of Gary Foster, Omgeo's Chief Technology Officer, was Sun's high-performance, high-availability clustered computing platform supported by open computing standards. "Omgeo provides a global trade management solution (enabling) STP that is mission-critical 24x7, therefore, it was very important for us to find a technology partner that could ensure our solution would be the most reliable and readily available to our clients and the industry," Foster said.

After benchmark testing, Omgeo chose the Sun Enterprise server family with the Solaris Operating Environment for its ITM production system, business resumption system (disaster backup site), security server, and Web server systems.

"By using Sun's leading technology we are confident that our clients and the industry will have the opportunity to utilize a trade management solution that is highly reliable and available throughout the entire post-trade environment," said Foster. ●

This approach, said Fuller, is designed to enable customers to test, tune, revise, and refine complete STP solutions in real time, with real life situations.

Reducing risk, implementation timeframes, and costs for customers, Sun's iForce Solution Centers leverage the combined expertise of Sun's engineers and consultants, world-class systems inte-

ated by a variety of iForce partners, including systems integrators, channel development providers, and system providers," said Fuller.

To learn more about Sun's iForce Solution Centers, visit www.sun.com/iForce. To learn about some of the Sun iForce partners who are providing STP solutions, refer to the partner descriptions included in this report. ●

Best-of-Breed in a Time of Need for STP

Realizing that no single vendor possesses the resources to meet the industry's STP needs, Sun Microsystems created the iForce partner community as part of the eSolutions for STP initiative.

Separately, each iForce partner represents an industry leading best-of-breed technology provider, focused on improving the multitude of processes necessary to achieve STP. Combined, they form an unprecedented community, bringing together some of the best

minds in straight-through processing technology, working with Sun to deliver true seamless trading capabilities.

To better grasp the value of Sun's iForce partner program, you need to evaluate the sum of its parts. On the following pages, you will find detailed descriptions of some of the many leading STP technology providers that have joined the Sun iForce partner community this year. All providers are also part of the Sun Developer CommunitySM program.

REFERENCE DATA PARTNERS:

Asset Control Systems Inc.

One Rockefeller Plaza, Suite 1420
New York, NY 10020
Phone: 212.445.1076
Fax: 212.265.6402
www.asset-control.com

Asset Control Systems' data integration platform provides centralized data management, with infinite reach — a critical combination to achieving STP.

Asset Control facilitates consistency of data at every juncture of the trading process. By dramatically enhancing the quality of data, Asset Control not only minimizes operational risk, but creates the ideal foundation for Straight-Through Exception Processing (STEP), placing STP that much more within reach.

By using object-oriented principles, and fully embracing the Java platform, Asset Control provides a plug-and-play solution that is unparalleled in performance and functionality, supporting analytical applications with cleansed securities-related data.

Specifically, the Asset Control data integration platform gathers security master, corporate actions, counter-party, issuer, and market data from multiple data vendors and internal sources; organizes, consolidates, and cleanses the data in real-time; pre-formulates or enriches the data for research for calculation-heavy applications such as arbitrage or risk management; delivers the data to all applications and special-purpose data-stores; gives a new lease on life to legacy systems by linking them to a consistent, centralized data service; and is thoroughly scalable. ●

Access International Financial Services Inc.

99 Park Avenue, 8th Floor
New York, NY 10016
Phone: 212.293.2230
Fax: 212.293.2231
www.access-stp.com

A comprehensive and accurate security master database system, such as Access International Financial Services' Global Transaction Processing System, is a crucial component for achieving STP.

Back-office applications rely on accurate and timely data to drive the automated processing, settlement, and reporting of securities transactions — functions that cannot be completed without effective capabilities in this area. With the Global Product Suite, global data can be consolidated and managed through a single corporate database, ensuring timely and accurate product data, resulting in reduced costs associated with bad and duplicate data, and operational errors.

Originally developed at a leading international investment bank, the Global Product Suite equips a single corporation with a wide standard database for global product information, while supporting a real-time, multi-currency, multi-entity global back-office system.

The Global Product Suite is composed of three real-time integrated application components (Product Master, Product Classification, and Firm Price Management), and supports a wide array of international instruments, with a design that makes it simple to add additional product types. ●

Financial Technologies International Inc.

22 Cortlandt Street
New York, NY 10007
Phone: 212.798.7100
Fax: 212.798.7238
www.ftisoft.com

Financial Technologies International's integrated family of StreetEnterprise applications is enabling organizations to streamline cross-functional business processes, eliminate islands of automation, and seamlessly integrate enterprise-wide and mission critical data in real-time, making it a leading Financial Enterprise Software (FES).

The integrated family of StreetEnterprise rules-based applications — StreetReference, StreetBooks and StreetActions — provide flexible, event-driven applications for data standards, real-time transaction and market data consolidation, and operational accounting efficiencies for the financial services industry with applicability across key industry segments, including capital markets, asset management, retail sales, and trust and custody.

The key concept behind FTI's success is knowing that the only sure way to manage funding and risk is to consolidate all current and anticipated positions and cash in real-time, and integrate the results with accurate market and counter-party data.

In today's financial services marketplace, it's not enough to connect processes and translate data, you have to facilitate STP. As a leader in Financial Enterprise Software, FTI sets the standard for efficiency and functionality helping customers reduce operational costs and risks. ●

VMU GATEWAY PARTNERS:

Mercator Software Inc.

45 Danbury Road
Wilton, CT 06897
Phone: 203.761.8600
Fax: 203.762.9677
www.mercator.com

The Mercator Integration Broker suite of products provides the world-class application integration capabilities companies need to link complex and diverse technology, such as Electronic Data Interchange (EDI), legacy applications, messaging systems, data warehouses, and call centers with newer technologies such as Web applications and Extensible Markup Language (XML) for STP.

Features include a native-messaging system that snaps into most existing infrastructures, enhanced security features, business process management, and support for standards.

Meanwhile, Mercator Global Securities Solutions for GSTPA has been selected by eight of the 12 GSTPA participants that chose a vendor solution for integrating and managing the transaction flow between in-house systems and the Transaction Flow Manager (TFM) via SWIFTNet. Among the features and benefits of the system are its natural extensibility to Omgeo, SWIFT, ISO 15022, XML, SWIFT Standards and FIX. ●

SunGard Business Integration

560 Lexington Avenue, 11th Floor
New York, NY 10020
Phone: 212.977.7366
Fax: 212.977.7399
www.integration.sungard.com

SunGard Business Integration provides comprehensive integration solutions for financial services, and leverages Sun Microsystems' Solaris Operating Environment for scalability and high performance.

SunGard Business Integration's MINT Knowledge family of solutions enables institutions to seamlessly integrate disparate business processes and their supporting applications, delivering highly-automated and robust straight-through processing and workflow management.

Built to leverage emerging technology standards such as Java and XML, functionality includes: MINT Knowledge Broker, for secure messaging between disparate internal and external systems; MINT Knowledge Broker, for monitoring and managing these connections, providing full audit trails and

automated event scheduling; MINT Knowledge Manager, providing an advanced user interface, allowing an organization to bridge the gap between proprietary, industry, and vendor data standards; and MINT Knowledge Master, enabling users to model and implement a complete process using a visual interface. SunGard is a Sun Global Alliance partner. ●

Tata Consulting Services Inc.

11th Floor, Air India Building
Nariman Point
Mumbai - 400 021, India
Phone: 91.22.202.4827
Fax: 91.22.204.0711
www.tcs.com

TCS provides a fully scalable middleware software product, FIG, that addresses the need for intelligent generic messaging solutions providing a single point of connectivity to all internal and external financial interfacing needs of an organization.

The message communication method, message format, and message mappings as well as the routing rules are definable through the user interface. FIG integrates a rule-based engine to facilitate these definitions. These rules can also be modified in real-time. Access to these functions is controlled via configurable user roles.

Specifically, the FIG Concentrator acts as a portal to any virtual matching utility (VMU) including the GSTPA's transaction flow manager, Omgeo's central trade manager and industry networks such as SWIFT. From the GSTPA perspective, FIG enables an institution to provide concentrator services to global custodians, broker/dealers, investment managers, accounting agents, and other interested parties. FIG also has workflow and exceptions management integrated into it. ●

HelioGraph Ltd.

Bakers Hall
7 Harp Lane
London EC3R 6DP
United Kingdom
Phone: 44.20.7621.5300
Fax: 44.20.7621.5301
www.heliograph-global.com

HelioGraph provides state-of-the-art solutions which offer a single platform for end-to-end STP, encompassing connectivity, messaging, workflow, and exceptions handling.

HelioGraph's components plug into heterogeneous computing environments to perform complex business rules, construct intricate financial messages, reformat messages generated by other systems, and intelligently route messages throughout the enterprise. The use of component technology in con-

junction with highly flexible business rule scripting allows organizations to modify their message workflow quickly and to easily match changes in business procedures.

All HelioGraph products incorporate its core integration technology, the SWIFT Ready Gold accredited, Message Broker, with its component-based, data field dictionary architecture.

Comprehensive message libraries for all of the leading standards such as SWIFT, Omgeo, and FIX are included to automate and accelerate message handling. These libraries contain all current message formats, and are updated regularly to reflect the introduction of new messages that interface with other financial systems.

HelioGraph's STP platform, Helio TradeFlow, connects to VMUs from GSTPA and Omgeo as well as offers local trade matching, sophisticated exceptions handling, and dynamic SSI management. TradeFlow will therefore process any transaction, regardless of instrument type or whether the trade is matched locally or by a VMU. As such, TradeFlow offers its users the enormous advantage of consolidated control over all of their transactions. ●

Financial Fusion, Inc.

561 Virginia Road, Building Six
Concord, MA 01742
Phone: 978.287.1975
Fax: 978.287.2315
www.financialfusion.com

Financial Fusion's solutions provide processing for transaction-intensive trading organizations such as securities and investment firms, ECNs, and network providers. The technology supports SWIFTNet, FIX, SWIFT, GSTPA, Omgeo, and proprietary protocols.

Financial Fusion Server allows institutions to seamlessly connect with the virtual matching utilities like GSTPA and Omgeo. TradeForce for GSTPA and TradeForce for Omgeo allow for message repair, message tracking, message enrichment, and matching. Utilizing the same enterprise-class server, financial institutions are able to leverage their existing infrastructure to connect cross-border matching utilities.

Financial Fusion TradeForce GlobalFIX provides for unlimited FIX connectivity with flexible editions for clustering and high-availability deployment. TradeForce GlobalFIX provides the unrivaled ability to modify FIX message formats, enabling support for all FIX message specifications 4.0, 4.1, 4.2, and 4.3. It also includes Financial Fusion Message Broker for FIX message customization and extensibility, an embedded enter-

prise Java technology application server, and database along with extensive APIs for application integration.

On the sell side, GlobalFIX (which runs in both application server and EAI environments) allows users to deploy a point solution to address FIX messaging needs without the cost of operating a comprehensive new infrastructure. ●

Dovetail Systems Inc.

130 Clinton Road
Fairfield, NJ 07004
Phone: 973.882.9922
fax : 973.882.9822
www.dovetailsys.com

Dovetail's Unison system automates the post-trade through settlement process for any broker/dealer, investment manager, or custodian. VMUs — a new industry initiative led by the GSTPA and Omgeo — have established models for the standard exchange of messages to register, confirm, and resolve a trade among all the institutions involved in its settlement. Unison automates this process entirely, insulating the back-office systems of broker/dealers, investment managers, and custodians from the changes demanded by this new process.

Whether an institution is functioning as a single entity or as many different operational units, Unison offers a seamlessly integrated, centrally managed solution for multiple VMUs. The Dovetail product is designed to deal with pre-trade methods such as FIX, and it works with existing trade matching services in the market today.

Unison is designed and built upon industry standard "best practice" message switching capabilities: transactional queuing, guaranteed delivery, multi-message business transaction state management, and content-based routing. Unison is 100% Pure Java and uses EJB™, allowing it to run on a wide range of platforms. The user interface is a standard Web browser. ●

B2B Information Technology Services

76 Cannon Street
London EC4N 6NN
United Kingdom
Phone: 44.207.236.6891
Fax: 44.207.236.6764
www.btobits.com

Sun Microsystems and B2B ITS have joined forces to offer the industry's first cost-efficient, high performance FIX (Financial Information eXchange) Appliance. This complete hardware/software solution is designed to integrate with any order management system in the processing of trades from order to settle-

ment. The solution enhances electronic trading efficiencies and minimizes losses from manual efforts and errors. The FIX Appliance aims to commoditize the market for FIX connectivity by providing a fully supported solution (including all upgrades to the software and protocol) over the next three years for less than the software licence fee of any competitor.

Recent test results released by B2B ITS and Sun revealed that the B2B ITS FIX Antenna V12 running only entry-level Sun hardware provides the highest performance of any commercially available FIX engine. Specifically, the benchmark results show that FIX Antenna V12 processes and logs more than 10,000 messages per second and can maintain up to 200 sessions when running on a low-end Linux box.

B2B ITS has also developed FIX Centre, a comprehensive suite of FIX-related products, tools, and services. The suite complements the FIX Antenna range of FIX Engines, and enables financial services organizations to consolidate order flow from clients over a FIX connection, enhancing efficiency without requiring heavy investments in additional systems. This can enable organizations to achieve STP, while at the same time minimize costs. The suite includes: FACTS (FIX Antenna Certification and Testing Service), a service which allows broker/dealers to test the FIX capabilities of clients rigorously and automatically, using a Web-based interface, and requiring no FIX expertise on the client side.

This service has been implemented at several sell-side firms including Schroder Salomon Smith Barney. DART (Dynamic Auto Regression Testing) is a tool which tests the buy side's own implementation against all of the requirements of the FIX Protocol. B2B ITS has also developed a VECN (Virtual Electronic Trading Network) allowing clients to test against it and to use it for training purposes. Versions of both FACTS and the VECN will be available to clients for the FIX Appliance. ●

TRADE COMPLIANCE PARTNERS:

Algorithmics Inc.

185 Spadina Avenue
Toronto, Ontario
Canada, M5T 2C6
Phone: 416.217.1500
Fax: 416.971.6100
www.algorithmics.com

Founded in 1998, Algorithmics provides an advanced, market proven, enterprise-wide risk management solution. By integrating different risk functions with a single, unified, scalable architecture, Algorithmics helps financial institutions reduce costs, improve

the quality of risk information, meet regulatory requirements, and allocate capital more efficiently. Currently, Algorithmics provides enterprise-wide solutions across the banking and trading books to an extensive client base including global banks, asset management firms, insurance companies, pension funds, central banks, exchanges, regulators, corporations, utilities, and brokerage firms. Senior management, traders, risk managers, and IT specialists all benefit from Algorithmics' advanced risk analysis and decision support.

Algorithmics' Algo Suite is the first and only scalable enterprise suite of risk management solutions to measure and manage market, credit, asset liability, and operational risk consistently across the banking and trading books. By linking disparate forms of exposure across multiple business lines, portfolios, and products, Algo Suite provides consistent, verifiable measurement of an institution's risk across the entire enterprise. ●

CORE PROCESSING PARTNERS:

SunGard Securities Processing

32 Crosby Drive
Bedford, MA 01730
Phone: 781.275.7444
Fax: 781.275.7411
www.securities.sungard.com

SunGard Securities Processing provides real-time, Web-enabled solutions for clearance and settlement, accounting, portfolio management, and operational workflow tools used by broker/dealers, and banks worldwide in an ASP environment. Together, Sun and SunGard offer secure, reliable, and highly-available solutions for the financial services industry based on the Sun ONE architecture.

SunGard's STN Settlements, StreamBridge, and StreamEvents solutions are designed to enhance operations workflow, increase productivity, and reduce the cost and risk related to the clearance and settlement process. STN Settlements and StreamBridge help firms consolidate and control real-time interface messages from banks, clearing entities, depositories, and internal systems in one centralized, browser-based system. StreamEvents is a Web-based event management system designed to facilitate faster resolution of exceptions by streamlining many of the manual, paper-intensive functions of operations and prioritizing user workloads. SunGard is a Sun Global Alliance partner. ●

Wilco Systems Inc. (an ADP company)

17 State Street, 8th Floor
New York, NY 10004
Phone: 212.589.2000
Fax: 212.589.2001
www.wilco-int.com

The Wilco Gloss system is an integrated, real-time system for trade processing, books and records, settlement, and accounting for an extensive range of instruments for international markets. The Gloss system comprises a number of advanced modules that offer specialist business support.

Utilizing the Solaris Operating Environment and Java technology, the Gloss platform provides total automation for international trade processing, clearing, settlement, and accounting activities in a real-time, multi-currency environment. Gloss automates every aspect of a trade's processing cycle from deal capture to reporting, clearance, and eventual settlement. The Gloss architecture is flexible and open, allowing you to adapt quickly and easily to new instruments and business initiatives.

The Gloss system's proactive exceptions handling and workflow management capabilities are proven to reduce operational risk and minimize exposure to processing delays. ●

EXCEPTIONS MANAGEMENT PARTNERS:

PaceMetrics

40 Broad Street
New York, NY 10004
Phone: 212.504.0233
Fax: 212.504.0300
www.pacemetrics.com

Originally developed under the cross-border trading GSTPA initiative, PaceMetrics offers two Java technology-based suites of applications critical to achieving unimpeded STP: PaceMaker, which offers real-time exceptions management, monitoring the progress of a trade from initiation to settlement; and PaceManager, a trade-processing hub for managing settlement and operational risk.

PaceMaker monitors the flow of a trade through every step of its lifecycle, enabling staff to identify overdue events and avert errors immediately. PaceMaker automatically raises the quality of service to clients, whether those clients are external organizations or internal departments. The system also paves the way for a new generation of services, underpinned by operational excellence.

PaceManager builds on the emerging 'third-generation middlewar' of Business Process Management and provides the finan-

cial services sector features necessary to make Business Process Management work in the STP context. PaceManager provides levels of service based on trades entering the processing infrastructure. This in turn provides a cleaner settlement environment and where error conditions exist, these exceptions will be reported and managed to their resolution in sufficient time to dramatically increase STP rates and simultaneously reduce settlement failures. ●

Connexive

3150 Brunswick Pike
Lawrenceville, NY 08648
Phone: 888.627.5250
Fax: 609.671.0815
www.connexive.com

Connexive delivers new technology for advanced management of trade processing. The flagship product, Connexive Enterprise, enables automation of the very complex trading/settlement processes. Connexive offers software for real-time trade process tracking and exceptions management. Connexive solutions deliver projects faster, at less cost, and streamline operations while reducing risk. Sun Microsystems and Connexive recently announced a record breaking 52,000 transactions/second for Connexive's GSTPA Engine (translating to multiple billions of transactions per day) in a recent financial performance test. Running on the UltraSPARC II based Sun Enterprise 6500 server and Sun StorEdge disk array, Connexive surpassed its nearest competitor's messaging rate established in 2000. The performance and scalability demonstrated by this performance test illustrates the ability to complete trades in 24 hours. Enterprise-class performance is a pressing need for large firms, who seek to provide bulge bracket services to their clients.

Connexive demonstrated immense linear scalability on the Sun Enterprise servers and Sun StorEdge disk arrays in a major STP performance test. The tests were performed in a realistic scenario where multiple applications were connected to a central GSTPA engine. Connexive was able to achieve such a high level of sustained throughput due to its quality of service (QoS) architecture that is the backbone of all of its financial engines. ●

Dovetail Systems Inc.

130 Clinton Road
Fairfield, NJ 07004
Phone: 973.882.9922
fax : 973.882.9822
www.dovetailsys.com

Dovetail Systems applications (Unison/Envoy) provide extensive alarms and alerts facilities to facilitate trade exceptions management. Alarms are diagnostic messages that alert the User/System Operator to some event that has occurred. Warnings can include audible and visual alerts, activation of pagers, and automatically dialed phone calls. Alerts can be automatically sent to the financial institution's (central) monitoring facilities. The applications define three categories of alarm messages: informational (conveying information only); warnings (to draw attention to some aspect of a message or system event); and errors (signal that a problem has occurred).

Envoy, the Dovetail payments system provides exceptions management facilities throughout the application. The system provides exceptions processing for incoming items that require repair or other supervisory action, FX rates exceptions, regulatory exceptions, risk management exceptions, network-level risk control exceptions. In addition, the "learned routes" facility increases STP rates through automated operator activity monitoring. The system allows for the designation of multiple exceptions processing stages. ●

AD