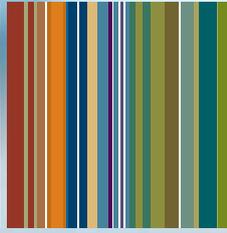


SUNGARD®

VALDI FOR DERIVATIVES TRADING

High performance trading solutions for global markets



SUNGARD'S VALDI: SOLUTIONS FOR DERIVATIVES TRADING

New contracts and markets continue to emerge in an extremely dynamic landscape, creating opportunities but also raising challenges for connectivity and trading interfaces.

Traders on electronic markets face enormous challenges in maintaining and growing their profitability. The drive for greater efficiency is inevitably relentless in a highly competitive environment, where commissions and margins are under constant pressure. At the same time, there are many demands for greater transparency and compliance with changing market regulations.

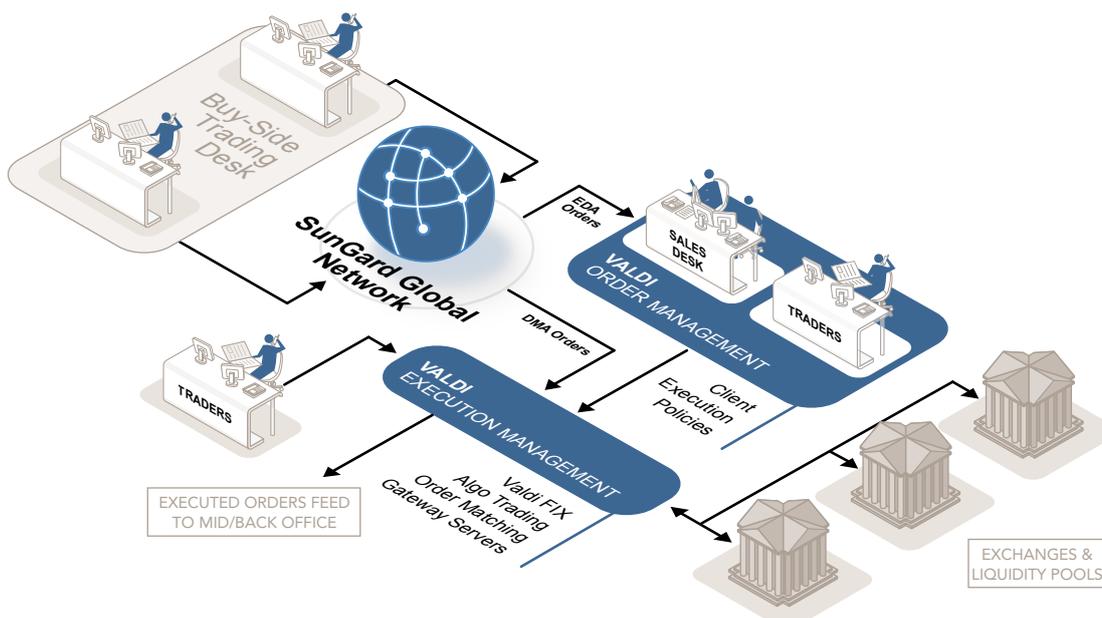
New contracts and markets continue to emerge in an extremely dynamic derivatives market landscape, creating opportunities but also raising challenges for connectivity and trading interfaces, to the extent that technology can sometimes feel like more of an obstacle than an enabler.

SunGard's suite of solutions for these electronic trading challenges is brought together under the Valdi architecture. The global Valdi product suite has multi-asset scope, but incorporates specifically tailored functionality for listed derivatives trading: several of the world's leading FCMs and market participants are the largest users. The Valdi suite is an integrated and modular offering that provides:

- client application and broker connectivity to global derivatives markets via **FIX**, the **SunGard Global Network** and the **Valdi EMS**,
- advanced derivatives-specific execution capabilities at workstation level,
- a flexible, high-capacity order management system,
- a suite of building blocks, tools and services for algorithmic trading,
- precisely configurable pre-trade risk management, integrable across diverse trading platforms,
- high-performance gateways for direct member access to 70+ derivatives markets worldwide.

Valdi Order Flow

- ➔ CLIENT CONNECTIVITY
- ➔ MARKET DATA
- ➔ ORDER MANAGEMENT
- ➔ ADVANCED EXECUTION



CLIENT AND APPLICATION CONNECTIVITY

The Valdi suite supports trading on all listed asset classes across an unrivalled range of electronic markets: over 170 worldwide. The core order and execution management functions are supported coherently via process 'blades' on the high-capacity Valdi Core Server.

The Valdi architecture provides all data, from electronic trades and also those captured manually, required for STP to middle- and back-office systems, including SunGard's Stream suite of post-trade solutions: this includes the widely used Stream Clearvision, Stream GMI, and Stream Ubix trade processing systems.

The success of a trading architecture starts with its ability to collect efficiently all types of incoming business from clients and trading applications. The Order Flow diagram on page 3 illustrates the various possibilities available in Valdi:

- › The Valdi suite can accept orders from any source in FIX and other protocols via **Valdi FIX**: a high-performance middleware platform for management of multi-protocol connections and message routing that forms the heart of the Valdi architecture.
- › Orders may be collected from clients via the **SunGard Global Network**, from third-party order routing networks, or via the Internet.
- › Buy-side trading desks often use the **Valdi EMS**, which offers order staging, algo trading and pre-trade risk management capabilities. Most often used for Direct Market Access (DMA) trading, the EMS may also be used to route care orders to brokers' order management systems.
- › SunGard's **FIX Network Service** enables all incoming FIX traffic from clients to be integrated into a single, coherent FIX session.



The SunGard trading products are easy to use and also flexible enough to meet each user's preferences.

Daniel Mendes

equity derivatives sales, BBVA Global Markets



VALDI: KEY FEATURES

Client application and broker connectivity to global derivatives markets via FIX, the SunGard Global Network and the Valdi EMS

Advanced derivatives-specific execution capabilities at workstation level

A flexible, high-capacity order management system

A suite of building blocks, tools and services for algorithmic trading

Precisely configurable pre-trade risk management, integrable across diverse trading platforms

High-performance gateways for direct member access to 70+ derivatives markets worldwide

WORKSTATIONS: THE VALDI TRADER RANGE

Our core offering is Valdi Trader - a fast, robust multi-asset trading station with innovative order sending and monitoring features adapted to the specific functionality of each supported market, and displaying real-time P&L. The station's SpreadMatrix module allows trading of calendar spreads, butterflies and condors in a user-friendly and highly configurable matrix format, and a custom formula bar enables complex pricing algorithms to be applied to other two-legged strategies.

Valdi Trader is an established reference worldwide. For market news, charting and analytics it can be used together with SunGard's MarketMap, and for advanced execution Valdi Trader Plus adds a range of further trading capabilities.

Valdi Trader Lite is our thin-client workstation: it uses a Web browser to run downloadable applets, so no software needs to be installed. This allows its users to be fully mobile, and the built-in security solutions have been thoroughly tested for use over the public Internet. These attributes make Valdi Trader Lite especially suitable for widely distributed client populations: while less fully featured than Valdi Trader, it supports all the core and market-specific trading functions that are normally expected by professional traders.

Valdi OMS Trader is our multi-asset front end for agency trading and market-making, offering a high level of automation and designed to handle complex order flows in conjunction with the **Valdi Order Management System**. Order management, execution and allocation functions for both client and market orders can be handled in real time from a single interface.



Valdi Trader gives us the base we need for efficient and rapid trading of futures and options.

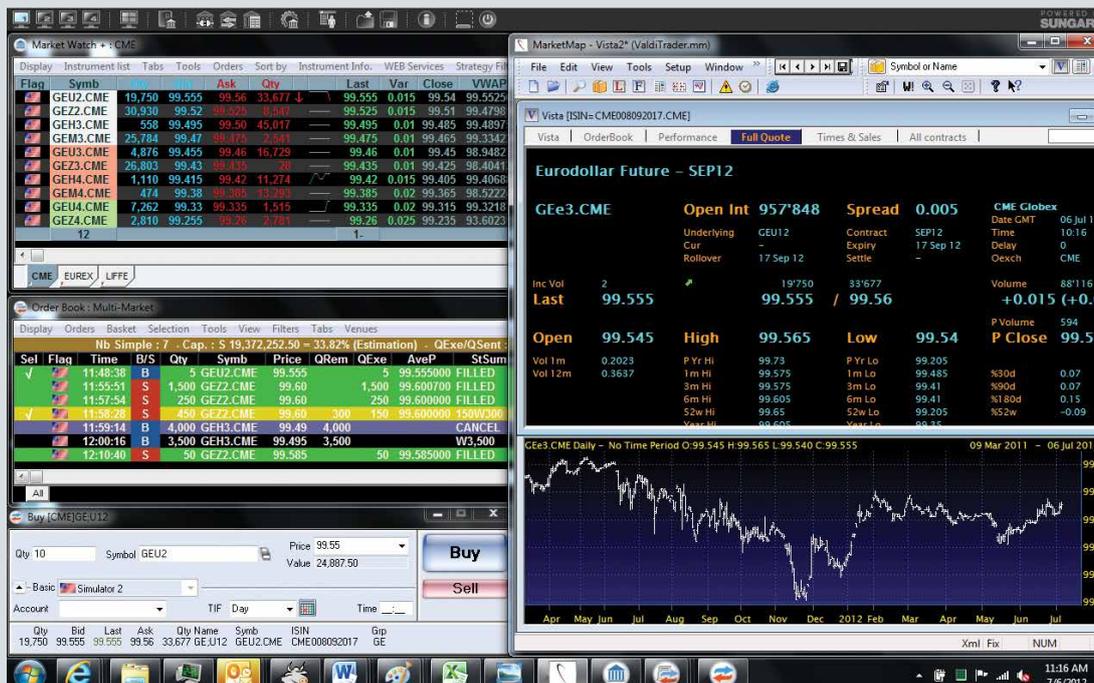
And behind the screens, SunGard's managed market connectivity service gives us speed and reliability: it takes away the technology headaches.

Tony Tryhuk

vice president, commodity trading division,
RBC Dominion Securities, Winnipeg



Valdi Trader
with MarketMap



ADVANCED EXECUTION

The Valdi suite supports trading on all listed asset classes across an unrivalled range of electronic markets: over 170 worldwide.

Trading on electronic derivatives markets gives a range of opportunities to use technology for much more than the sending of orders and receipt of confirmations. The right software and market data can provide significant levels of support to achieve effective trading decisions and order execution. In fact, to handle efficiently the large order volumes and lot sizes that are often today's market standards, this support becomes a necessity.

A range of solutions

SunGard has been a pioneer across the field of electronic trading techniques since the earliest days of screen trading, and over the years we have developed a wide range of products and interfaces to support advanced execution techniques.

Automated trading

Available as an application on all trading workstations, **Valdi Automate** allows users to build automated trading strategies in MS Excel or other application environments. These strategies may be triggered by market events and movements, and may also include a wide range of algorithmic techniques.

Strategies

Valdi Combo Trader enables brokers and proprietary traders to optimize their execution capability by creating tailored multi-instrument trading strategies. The application supports multi-asset trading across multiple markets, for user-defined strategies of up to 32 legs: spread, butterfly, strip and so on, as well as more complex combinations.

Program trading

Valdi Program Trader provides a full range of capability to support program trading activities: multi-level basket management, waving and scheduling, and in-depth Transaction Cost Research (TCR) functionality.

The basket trading capability of Valdi Program Trader is often used to implement index arbitrage strategies, so the multi-asset capability of Valdi to support trading across both cash equity and futures markets is leveraged.



Valdi Combo
Trader

ORDER MANAGEMENT

Order management is a vital and complex activity in every brokerage business: from order capture to allocation, there are many functions involved in a sell-side firm's work on the care order flow received from buy-side clients. A range of optimized and high-performance business processes and trading capabilities is required in order to ensure high-quality execution.

The **Valdi OMS** automates the necessary workflows on the basis of flexible rule sets (including multi-site), enabling the efficient processing of large volumes of transactions, on the scale of thousands of orders per second with millisecond latency, and load balancing across multiple market gateways.

Based on functionally dedicated technology, the Valdi OMS can handle rapid execution of large order flows. The base OMS package allows traders to carry out all standard order management tasks, such as order capture, slicing, connectivity to connected and nonconnected markets. Risk management can be integrated across DMA and care order flows, and a dedicated allocation module handles a wide range of allocation modes for client accounts at the trading desk, enabling rapid updates to clearing houses for the appropriate margin adjustments to be made.



ALGORITHMIC TRADING

Valdi Tactics provides a widely deployed, comprehensive library of synthetic order types (iceberg, peg etc.) that can be applied to orders sent from any SunGard trading station or interfaced application. **Valdi Algo Trading** delivers off-the-shelf trading algorithms, such as TWAP and VWAP, as well as market-specific algorithms. SunGard has carried out numerous algo development projects with clients under the remit of our **Valdi Algo Services** offering, where we develop and tailor algos to meet the client's specific requirements.



RISK MANAGEMENT

Business success depends on seeing the right information in the right context to take effective action, and this is especially vital in the control of pre-trade risk. Clearly there have to be tight boundaries, but it is equally important that these boundaries are defined in such a way that they do not unduly restrict the activities of trading desks or their clients for DMA, algorithmic trading or care order services.

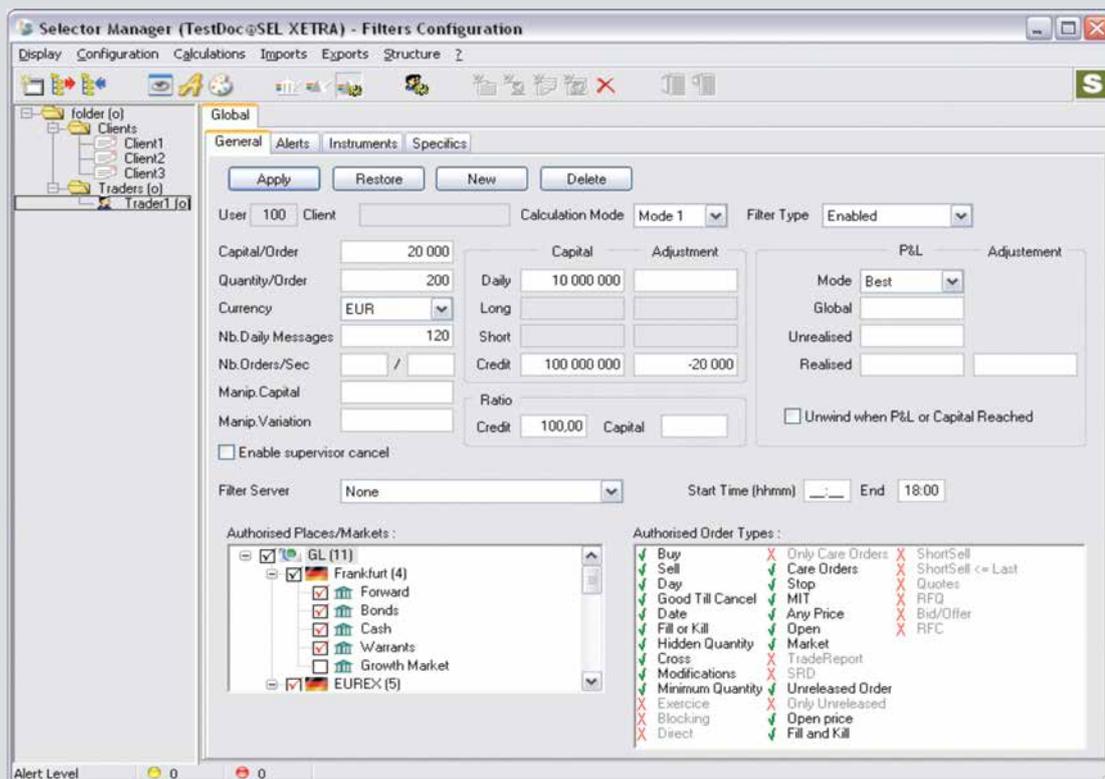
Multi-asset and multi-currency risk management

SunGard has developed a comprehensive pre-trade risk management architecture in **Valdi Selector**, designed to optimize trading firms' ability to manage and make full use of available limits. Valdi Selector allows a particularly fine control of limits on a variety of dimensions and levels - market, department, desk and individual trader or client - and offers full multi-asset and multi-currency capability. The application is also designed to deliver low latency in high-volume trading environments.

Market-specific parameters enable compliance with the regulatory requirements of all supported markets.

All information is consolidated in one screen, so that every user - broker, proprietary trader or buy-side client - is able to assess current overall positions at a glance. Global and detailed position information is available as required.

Similarly, risk limits distributed across different markets can be used in support of one another in an integrated implementation of Valdi Selector.



Valdi Selector enables control of limits, with multi-asset and multi-currency capability

Valdi Delta Selector provides an additional mode of operation for Selector: when activated, it adds specific enhancements to the method of handling positions for derivatives instruments across futures and options, treating them together to enable more transparent and coherent management of the overall risk profile.

For multiple trading platforms

The traders and DMA clients at many firms may access a particular market via multiple different applications: from trading workstations (often from more than one supplier), or directly via exchange APIs. The Valdi Global Execution Server allows the trading supervisor to monitor and control all trading activities across these diverse platforms, to have a global view of positions and risk in real time, and to optimize the use of available limits and margin.

Integrated commodity trading platform

Kiodex is an integrated commodity trading platform that helps transform corporate risk into a strategic advantage, especially when utilizing its real-time capabilities. **Kiodex Real Time (KRT)** provides real-time trade capture, mark-to-market and risk management for commodities, all in a single integrated application. With **Kiodex Control**, an enhancement to KRT, clients can set multiple alerts to monitor positions and limits in real time, ensuring ample warning is given before a compliance or limit threshold is exceeded. With the addition of **Kiodex Margin Services**, margins can also be tracked in real time.

Mitigate firm-wide risk exposure

Protegent Surveillance is a proven compliance solution that helps financial services firms mitigate reputational, internal and regulatory risks. With Protegent Surveillance, firms can detect suspicious trading activity and address supervision and suitability requirements. The solution helps firms identify questionable transactions and high-risk positions, streamline review processes, support audits and respond quickly to regulatory and legal inquiries. Protegent helps financial institutions detect a broad range of issues including commissions, concentration, suitability, licensing, breakpoints, market manipulation, AML, restricted holdings and insider trading activity. Deployment options include a full in-house implementation or a SunGard hosted ASP service module.



MARKET CONNECTIVITY

Many factors have led users of the derivatives markets, whether funds, hedgers or speculators, to look globally for the contracts that best suit their requirements. Many of these firms are of course themselves global businesses. Connectivity to electronic markets, both regulated exchanges and also over-the-counter market trading systems, wherever in the world they may be located, has therefore become a key requirement of the brokers and FCMs who serve these clients.

Market gateways

Since 1987, SunGard has been a consistent leader in enabling trading access to new electronic markets. Today we provide high-performance, low-latency trading and market data gateways for over 70 derivatives markets worldwide, and we continue to develop access to emerging electronic markets as a core element of our business strategy. We connect to all global derivatives (and equities) exchanges where we see a community of interest among international market users and their brokers.

SunGard Global Network: order routing and market data

The SunGard Global Network provides access to an even wider range of electronic markets - more than 170 in total - via its community of 500+ connected brokers. The network also delivers low-latency real-time market data from over 120 markets.

Installation options and facilities management

We can supply all of our market gateways for installation at clients' trading premises or in co-location facilities at exchanges. We also offer Facilities Management services under which we can manage gateways, exchange connections and other SunGard applications for clients at our premises.

ASP services

Last but not least, we provide access to over 110 equity and derivatives markets via our fully managed and secure **Valdi Market Access** offering. This enables exchange members and their DMA clients to trade on all these markets from any workstation or application connected to the SunGard Global Network, free of concerns about technical infrastructure and connectivity. Over 500 market gateways accommodate close to 150 clients on this service, which uses state-of-the-art Linux servers and fast exchange connections to ensure low latency.



SunGard's Valdi provides RBS with tools that help us provide a leading service to our clients, reducing our time-to-market for trading in new instruments and geographies. [Collaborating with SunGard helps us leverage its broad footprint and years of experience in the futures industry.](#)

Jeremy Wright

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Prime Services and Client Execution, RBS London





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