

CLIENT CASE STUDY

Reference Data Management

Profile

The client is a global alternative investment fund based in Connecticut with approximately \$7 billion in assets under management.

Background

Over the past 11 years, the client has built a comprehensive infrastructure to support its operations including proprietary front- and middle-office systems, third-party trading and accounting applications, on-site data center facilities, and a large operations and IT support staff. The ability to effectively manage firm-wide reference data including terms and conditions, corporate actions and pricing had become extremely inefficient and very costly given the number of disparate systems and multiple data vendor sources.

Solution

In 2008, the client selected Paladyne's Security Master™ and Price Master™ applications as their centralized reference data solution. The client further elected to implement Paladyne's ASP™ ("Application Service Provider") solution to reduce its market data and IT support costs.

Benefits

By implementing Paladyne Security Master™ and Paladyne Price Master™, the client has centralized its reference data management function, streamlined its operational workflow by eliminating manual processes, and significantly reduced its on-going market data costs and internal IT support requirements. The client also upgraded its IT infrastructure with Paladyne's ASP™ solution with improved system performance, increased automation, and real-time disaster recovery. The client estimates the Paladyne® solution has reduced its infrastructure and annual operating costs in excess of \$1mm per year.

Multi-Billion Dollar Hedge Fund Saves Over \$1 Million Annually With Hosted Centralized Reference Data Management

Introduction

Given today's market conditions, hedge funds managers throughout the world are exploring ways to improve operations, mitigate risk, and reduce cost. This case study illustrates how the implementation of Paladyne's reference data ASP solution was effective in streamlining the operations of a global multi-strategy hedge fund and significantly lowering their annual operating expenses.

Business Situation - Rapid growth, disparate systems, and operational inefficiencies

The client is a \$7 billion global hedge fund manager which was founded in 1998 and has since grown to be a highly respected om investment management firm. Over the years, the client has spent heavily on technology and IT infrastructure to support its growing business. The firm began as a long/short equity focused fund and implemented SS&C's HedgeWare® as its middle- and back-office portfolio accounting and investor reporting system. The company continued its rapid growth and expanded its investment strategies to include fixed income, swaps, CDS, and more complex OTC products. In 2004, the client replaced HedgeWare® with Advent's Geneva®, as its firm-wide portfolio accounting solution. In addition, the client implemented Eze Castle's Eze OMSTM to support its trade order management and pre-trade compliance requirements. Simultaneously, the client's IT group had embarked on a multi-year project to build a comprehensive data warehouse for management and investor reporting. In 2007, the client implemented RiskMetrics® for intraday and month-end risk reporting.

By 2008, the client had a complex web of disparate systems in support of its front-, middle-, and back-office operations. The client's reference data management function had become manually intensive and insufficient for operations and reporting. The client relied on Geneva's® internal security master as the firm-wide reference data repository for managing and maintaining all security terms and conditions and corporate actions. The client built custom integration between its market data vendor feeds and

-continued on next page

420 Lexington Avenue, Suite 615, New York, NY 10170 888-725-2396

www.paladyne.com

Geneva® for listed securities. All non-listed or OTC products were manually entered into Geneva®. Corporate actions with the exception of dividends and splits were also manually processed in Geneva®. The Geneva® security data was loaded into Eze OMSTM, RiskMetrics®, and the internal data warehouse and reporting tool. The extensive layer of integration across the various products required significant development effort and on-going maintenance and support. The integration layer made software upgrades of Geneva®, Eze OMS® and Risk Metrics® extremely costly and time consuming given all of the QA, testing, and development work required. As a result, the client typically lagged many versions behind the newer product releases, and was therefore unable to leverage new product functionality to improve operational efficiency. More significantly, the Geneva® security master by design is limited to storing accounting data, whereas the client required a more comprehensive set of terms and conditions for trading, risk management, and reporting. As a short-term solution, the client created user defined fields (“UDFs”) in Geneva®, however, this approach quickly became unworkable and could not support the reporting requirements. The client later implemented a proprietary UDF database which added more complexity, cost, and manual effort to the daily reporting process.

The pricing and valuation process was equally inefficient and time consuming with heavy reliance on Microsoft Excel®. The client maintained numerous sources of pricing including Bloomberg Data License® for global equities, Thomson Reuters DataScope® for global fixed income, IDC® for secondary pricing, Markit® for CDS spreads and valuation, and numerous brokers for fixed income and OTC pricing. An Excel® spreadsheet was used to aggregate all of the pricing data for analysis and arbitration across the various price sources. Each day, a final calculated price was loaded from Excel® into Geneva®, and subsequently into all other internal systems. The pricing spreadsheet was extremely inefficient with multiple users cross checking prices and testing for accuracy. Even worse, the pricing process provided no auditing capability or compliance reporting, and had recently been raised as an issue by investors who had become more focused on pricing and valuation transparency in their due diligence process.

In late 2008, triggered by the financial crisis, senior management recognized the potential challenges and issued a mandate for improved infrastructure with a significant reduction in cost and business risk. Key requirements included centralized data management and pricing transparency. Management also requested a rationalized usage and spend analysis on market data vendors and all proprietary development projects. The client evaluated numerous options ranging from custom development proposals to packaged solutions, and after a comprehensive evaluation process, selected Paladyne®. The key drivers in the decision were Paladyne’s unique combination of reference data software products, detailed knowledge of market data, pre-existing data vendor relationships, and an optional hosting and managed IT services model.

Solution - One single hosted centralized data depository

The client implemented Paladyne’s reference data products as a full service ASP solution. Paladyne Security Master™ was implemented as the centralized data repository for security terms and conditions,

-continued on next page

and corporate actions across all of the client's asset classes. The key success criteria of Paladyne Security Master™ was its comprehensive data model for supporting all of the listed and OTC security types (e.g., bank debt, CDS, variance swaps, IRS, etc.) as well as its pre-existing interfaces with the client's third-party products and market data vendors. Paladyne provided out-of-the-box integration adaptors to the latest product versions of both Advent Geneva® and Eze OMSTM, as well as to Bloomberg Data License®, Thomson Reuters DataScope®, and MarkIt®. In addition, Paladyne Security Master™ provided a RiskMetrics® interface for OTC terms and conditions resulting in more streamlined and timely risk reporting. Paladyne's extensive library of pre-existing integration adaptors and messaging-based posting infrastructure fully replaced the custom integration layer developed and supported by the client's IT group and significantly reduced implementation costs and project risk.

Paladyne Price Master™ was implemented as a new centralized pricing and valuation tool to replace the existing Excel-based pricing infrastructure. Paladyne Price Master™ collects and stores all of the client's pricing and related market data historically, and allows for customized pricing rules, on-line data analysis (e.g., price exceptions, price variance, FAS 157), modeling, and time series pricing analysis. The key success criteria of Paladyne Price Master™ was the workflow scheduling tools for full automation of the client's pricing process and the flexible user interface for designing pricing rules and analyzing time series market data. Paladyne Price Master™ consistently applies the client's rules-based pricing policy on a daily basis and provides full transparency into pricing history for investors with comprehensive auditing and compliance reporting.

The decision to leverage Paladyne's ASPTM solution added significant costs savings in the areas of both IT infrastructure and market data. Paladyne® is an authorized distributor of the Bloomberg Data License®, CRM, and Server API feeds, the Thomson Reuters Datascope® and EJV feeds and the MarkIT Red Code Database®, LoanX® feed, and Valuation Service. As such, Paladyne ASPTM clients are offered a unique data distribution model whereby clients receive the bulk market data feeds, yet only pay on a per-security pricing model. This hybrid solution, which is unique to Paladyne's ASPTM clients, offers the flexibility for clients to monitor and search the entire universe of issuers and securities while only paying for what is actually downloaded into internal applications (e.g., Geneva®).

From an IT perspective, Paladyne® provided a comprehensive service offering including three client specific environments: production, QA, and "hot site" disaster recovery within its two US-based data centers, all hardware and third-party software, and 24x7 hosting and IT support services for the applications, IT infrastructure, and market data feeds. Paladyne® also established a VPN tunnel (using a dedicated appliance) between the client's existing data center and Paladyne's data centers. The VPN tunnel is used to communicate reference data between the client's internal applications and Paladyne's ASPTM platform using web services APIs. The client's end-users access the Paladyne® applications via Citrix®.

-continued on next page

Results – Greater than \$1 Million per year in IT headcount and market data savings

Paladyne's reference data solution has provided the client with an automated straight-through process for managing security data and corporate actions, and has resulted in more timely and accurate firm-wide reporting. The client's pricing process has been completely overhauled and automated with more robust data gathering, validation and error detection, controlled implementation of client's valuation policy, and comprehensive auditing and historical reporting.

Paladyne's ASPTM solution provided significant cost savings to the client in the areas of staff reduction and lower market data costs. By outsourcing the reference data infrastructure to Paladyne®, the client reduced its IT staff by one and lowered its annual infrastructure costs by \$100,000 with the elimination of hardware, third-party software, and DR requirements. By replacing its custom integration architecture, and instead leveraging Paladyne's pre-existing integration with the third-party products and market data feeds, the client reduced the application development team by two full-time staff. By centralizing the reference data management and pricing processes, and by eliminating manual entry and redundant processes throughout the organization, the client was able to reduce its operations team by two full-time staff. By re-negotiating its market data vendor agreements and accessing the data directly through Paladyne's ASPTM solution, the client reduced its market data costs, gained access to a broader market data universe, and eliminated its need to support the market data feeds internally.

Overall, the client estimates an annual cost savings in excess of \$1mm (\$800,000 in labor cost savings and \$200,000 in reduced market data costs), and has received the overwhelming approval from investors for its upgraded technology, improved profitability, pricing transparency, and overall reduction in business risk.

About Paladyne Systems®

Paladyne Systems (www.paladyne.com), a Broadridge Company, is a leading provider of next generation investment management solutions. Paladyne offers its integrated front-, middle- and back-office platform, known as the Paladyne Suite™, to hedge funds, asset managers, fund administrators and prime brokers. The modular Paladyne Suite™ includes order management, portfolio management, reference data management, data warehouse and custom reporting and reconciliation, and is complemented by the Paladyne Network™, an integrated network of leading 3rd party software and market data firms. The solution can be delivered onsite or via Paladyne's industry-leading application service provider solution, Paladyne ASP™. Paladyne was established in 2005 and now serves over 150 clients worldwide. The firm has approximately 160 employees, and is headquartered in New York, with regional offices in New Jersey, London, Russia and Hong Kong.

