



ADVANCED TECHNOLOGIES
FOR INVESTMENT MANAGEMENT

Sample Consulting Projects

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Contact Information

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Company Overview

Varden was founded in 1999 on the principal that financial software projects can be completed faster and more effectively by people who understand both the technical and business side of a project. We provide functional and technical expertise in the following investment management disciplines: (in bullets)

- Trading/Order Management
- Portfolio/Private Equity Accounting
- Performance Measurement & Attribution
- ECN Connectivity/Integration
- Compliance
- Front-Office/Decision Support
- Market Data Integration

The Varden team consists of individuals with proven technology skills and a strong knowledge base in the financial services business. We recruit individuals who have hands-on experience dealing with the software applications and technologies on which you are working. Our team consists of the designers, developers and implementation consultants who have built and integrated many of the applications that run in your current and future production environment.

Regardless if you are working with an outside vendor or building an application internally, a project fails largely due to ineffective communication between those who understand the business and those who ultimately develop an application. Software developers and integrators who understand the business problem are far more likely to anticipate problems before expensive and time-consuming development takes place.

We solve problems using common sense and practical solutions and believe in keeping implementation and development projects as simple and maintainable as possible. Our goal on every project is to provide an uncommon level of service, turnaround-time, and responsiveness to end-users. We accomplish this goal by adhering to the following key principles:

- Bring energy, creativity, and a positive attitude to the project on a daily basis.
- Understanding the problem and getting it right the first time.
- Choosing the correct tools and design to fit the goals of each project.
- Work equally effective as a stand-alone team or in collaboration with a larger project group.

We look forward to working with you.

Regards,

Perry Harris
President

Trading, Order Management & Compliance, ECN Integration

The technology, demands, and competitive landscape of the trading industry have changed dramatically over the last several years. The Varden team has been in the thick of this change and has been working with both buy and sell-side firms to shape the future of how firms interact with one another as well as with industry ECNs. We firmly believe that Straight Through Processing (STP) starts in the front office and have been working with our clients to maximize the leverage they can obtain from their Trade Order Management system through ECN automation. Our team has experience working with many of the leading products and vendors such as: Charles River, Macgregor, LineData (Landmark), Latent Zero, FIX, ITG Platform, Liquidnet, FXConnect, TradeWeb, CTI, and Plexus.

Order Management & Compliance Implementation

A Global Investment Manager with \$80 billion in assets under management selected Varden to provide the technical implementation expertise necessary to consolidate the firms geographically distributed equity and fixed-income trading environments. The following services have been provided during the various phases of the project:

- Product Training and Workflow Analysis – Worked with end-users and analysts to determine optimal workflow and necessary configuration to support the client’s diverse trading needs.
- Interface development – Provided analysis and development of all inbound and outbound connectivity to portfolio accounting systems, custodians, and additional downstream systems. Additional interfaces have been developed to provide integration between the firm’s Employee trade tracking and Trader Performance monitoring systems.
- System Configuration, Tuning, and Disaster Recovery – Provided Sybase database monitoring and optimization and Citrix configuration to support 100 users in a WAN environment.
- Compliance Setup and Training – Taught both compliance and systems personnel how to configure, operate, and diagnose compliance in both a pre-trade and post-trade environment.

ECN Integration

Varden has been a pioneer in bringing ECN integration to Equity, Fixed Income, and Foreign Exchange trading desks. Developing Database, API, or FIX interfaces, we have developed solutions that allow several of the industries leading ECNs to communicate with various order management systems. The net result of this integration is that it allows Traders to electronically route and execute trades to a particular broker/ECN without manual phone calls or human intervention. Traders can concentrate on working large orders and supporting portfolio managers and eliminate dual entry associated with non-integrated systems. Samples of ECNs integrated are:

- TradeWeb – Implementing the TradeWeb STP solution, traders can now originate trades in the TradeWeb Viewer and automatically have executed and allocated trades flow into the Order Management System

- LiquidNet – Providing a constant flow of equity orders to the OMS, the interface allows Liquidnet to continually monitor large block trades that are eligible for execution with corresponding Institutional Managers. The process has been developed to support Sybase, Oracle, or MS SQL Server implementations.
- FXConnect – Utilizing the FXConnect API, this bi-directional interface allows foreign exchange desks to execute spot transactions to cover currency needs resulting from foreign trades.

Web Extensions to Industry leading Trading Platform

The fixed income trading desk for a large global manager required the ability to apply a proprietary benchmarking function to each trade processed in their industry standard trading system. To facilitate this required functionality, Varden developed a web-based application that seamlessly integrated with the OMS blotter such that the user could navigate directly from a particular trade to the benchmarking application. This environment provided the firm with an ideal compromise between developing an in-house system and outsourcing the application completely. In this environment, the workflow of the manager dictated that system's approach instead of the application dictating the workflow. Since development of the initial application, additional features have been added to provide customized web reporting and streamlined compliance features specific to the firm's unique needs.

Front Office / Decision Support

A key differentiator for an investment firm is how it makes investment decisions and the tools used to make these decisions. There are many tools available today to support the front office, but we have found the limitations of a firm often boils down to available data. A key part of our business has been working with the products and supporting data providers such as Reuters, Factset, Vestek, Bloomberg, ITG, and Multex. We believe our ability to understand both the functional and technical side of a problem is particularly important when dealing with front-office systems. Portfolio managers often have very little time to devote to development projects and want to work with individuals who already understand their business.

Integration of Quantitative Portfolio Optimizer

The quantitative investment team for an Investment Manager with 20 billion in assets under management required a industry leading portfolio optimizer to be integrated into their existing decision support architecture. Before integrating the optimizer into their existing portfolio accounting and trading systems, the team would spend 3 days at the beginning of the month manually loading data from various sources. This process was time-consuming, prone to error and failed to allow the team to load data on a daily basis, as they desired. Varden architected and developed an integration framework that allowed the manual process to be fully automated to support the daily load of data as follows:

- Security characteristics loaded from various industry sources and stored in database or text files
- 70+ Benchmark constituents loaded.
- Start of Day Positions loaded from the portfolio accounting system
- Start of Day Cash positions loaded from trading system.

Additionally, a web-based interface was designed to expose specific features of the optimizer based on the specific needs of the investment team.

Utilizing Bloomberg for Real-Time Data Enhancement

Global fixed income fund managers required enhancements to their existing security master data to support timely updates to characteristic data such as yields, durations, and convexities. Varden provided a 'run-on-demand' application that can be configured to request the specific data required for any security type. To keep consistent with the firm's internal pricing policies, the application allows the firm to pass overridden prices to Bloomberg such that characteristics are calculated on the firm's internal prices.

A second phase to the project required the use of the Bloomberg real-time API to obtain up-to-the-second security trading characteristics to a report that displays trade executions in relation to the market. This report has been developed using .Net web services and provides the framework for merging trade data obtained from the OMS with the real-time data obtained from Bloomberg.

Manager Desktop Portfolio Analyzer

As part of a large corporate intranet site, portfolio managers required an easy-to-use tool that allowed users to drill down into the asset allocation and performance of their portfolios. The users had previously used FactSet and Vestek and although useful, found that neither application provided the web-based, drill-down functionality that they demanded. Based on interactive sessions with the portfolio management team, Varden prototyped and presented an overall design to end-users. From there, we managed the development of the application, data-model, and interfaces necessary to support the application. Upon completion the application was capable of:

- Asset allocation, Attribution, top/bottom analysis using various characteristic breakdowns such as region/country, currency, sector/industry, duration, earnings, and risk.
- Views of data can be transformed from text to graphical display at the touch of a button.
- Extensive drilldown allows the user's to drill down and across the data to quickly key in on interesting areas.
- User-defined preferences allow a user to personalize their environment such that data is always presented in a manner that is most effective for their needs.

Performance Measurement & Attribution

Prior to founding Varden, several of our senior consultants were the nucleus of the product team who designed and developed DSTI's OpenPerformance performance measurement and attribution product. This team was a pioneer in the area of after-tax performance reporting and implemented this functionality commercially several years before government regulations made it a requirement. We have extensive experience with the many aspects and exception situations of performance that can make the discipline very difficult. Members of our team have been regular speakers in the industry and are recognized experts in the areas of AIMR and GIPS performance measurement standards. We have experience working with various industry products such as: FactSet, Vestek, Axys, Sylvan, DST's HiPerformance, and Statpro's Compass.

Mutual Fund / Performance Reporting Warehouse

As part of a firm-wide technology initiative, a Mutual Fund firm with 30 billion dollars in managed assets wanted to convert their manually intensive, proprietary database of fund data to the firm's standard Sybase database environment. Varden provided the analysis, database design, and conversion of 80 years of history. We designed a repeatable process that allowed various data conversions to take place as part of a phased implementation. In addition to the data conversion, a browser-based reporting environment was designed to allow on-the-fly calculation of various classes of Mutual funds. Users across the firm are now able to obtain real-time feedback on fund performance from any desktop across the organization.

Web Services for Composite and After-Tax Returns

The Portfolio Managers and Marketing Managers in a large global Investment Management firm required the ability to produce real-time after-tax performance reporting for client reporting and internal use. Utilizing the Microsoft .Net environment, Varden developed Web Services to calculate the performance results from raw data stored in the firm's enterprise data warehouse. The Web Services approach has provided a reusable framework that allows various reporting platforms to leverage this functionality and has allowed seamless integration into the firm's existing web-based reporting environment. The XML-based data exchange associated with the application allows the after-tax results to be presented in many different formats and layouts depending upon the specific needs of the client or user.

Web-based, Front-Office Attribution

The Portfolio Managers in a Global Equity environment required detailed attribution analysis on their mutual fund and institutional portfolios. We designed and managed the development of a solution that gathers data from several data sources and presents ad-hoc attribution reporting in a browser-based environment. Attribution was provided at the country, industry, and security level and calculated on an absolute or relative basis to industry benchmarks. The application supports multiple presentation options and results can be transformed into graphics on a single click. Drill-down features were also incorporated into the design to allow managers the ability to quickly analyze the data at various levels of detail.

Additional Application Development

We work very hard with our clients to select the right technologies and products for each project. Often the best decision for a client is to buy a third-party product and integrate and customize as necessary. Other times a client may wish to build a proprietary application for competitive advantage or because no product is available in the marketplace. When building products for a client, we develop using proven development tools, databases, and industry standards. We rely heavily on prototyping and rapid application development and design projects from the outset to minimize risk and set measurable milestones.

STP Settlement Instructions Initiative

As part of the STP initiative for a leading fixed income ECN, Varden was selected to develop a centralized, web-based settlement instruction and messaging system. The system has been designed to be highly scalable and provide a web-based industry solution that allows Investment Managers, Broker Dealers, Custodians and Interested parties to share and maintain data worldwide. Developed using open SOAP/XML interfaces, the system has been specifically designed to facilitate Straight Through Processing thus eliminating the needs for faxes, phone calls and ultimately, costly failed trades. During the trade settlement process, all participants can electronically retrieve essential information such as instructions (via depository or security type), confirms, and contacts through the use of their own account identifiers. Users may subscribe to messaging features and will be notified real time of any changes to their counter parties information based on user-defined events. The system is a distributed web application that was built using the latest proven technologies. It also provides several API's that allow the users to seamlessly integrate it into their own internal systems.

eReportal - Web-based Cross Platform Reporting

eReportal is a web based reporting framework developed by Varden that can be easily integrated into any existing reporting environment. Many companies have invested countless hours and dollars building suites of reports using reporting tools such as Crystal, Actuate, and Brio. We found that clients wanted a centralized, browser-based reporting environment that was easy to maintain and had the ability to bring together reports written in different technologies. eReportal, written in ASP, allows firms to integrate existing reports into a centralized browser environment. The environment is very scalable in that new reports can be easily plugged into the dynamically built menus. Also, somewhat unique to true web reports, eReportal has a scheduling feature that allows automatic report generation during off-hours. The eReportal framework has been implemented at several of our clients and has proven to be very successful in allowing clients to quickly deploy existing reports in a web environment.