

## Alpha Theory case study



Revolutionizing fundamental investing using probability - weighted returns via collaborative, real-time, web-based applications built on the SmartClient Platform.

*"We built a very detailed checklist of features we anticipated needing and gave every vendor an opportunity to complete that checklist. SmartClient was far and away the most complete match."*

Dave Huffman, CTO, Alpha Theory

### Technology to Revolutionize Investing

Back when Alpha Theory founder and CEO Cameron Hight worked on Wall Street, he knew that his team suffered from lack of process when making investment decisions. With multiple data points changing from minute to minute, decision-making was driven by gut instinct rather than risk / reward calculations. To remedy this, Cameron created a spreadsheet to structure the process of fundamental investing by assigning probability-weighted values to each asset. The spreadsheet succeeded in eliminating many of their investing mistakes and was the seed idea from which Alpha Theory grew.

Alpha Theory was founded in 2006. The goal was simple - to build a web-based version of the investment spreadsheet. It would show investment managers their firm's entire portfolio, use Alpha Theory's calculations to optimally balance it, and make updates in real time as prices change. As CTO, Dave Huffman, had the task of selecting the cutting edge technology necessary to build the Alpha Theory product. Dave researched all appropriate vendors and found that Isomorphic Software's SmartClient platform "was far and away the most complete match" to their requirements. A key factor was the powerful ListGrid component. It has "an impressive list of features built into the product natively which eliminated the need for custom development". These features included hiliting, formulas, frozen columns, export, filtering, grouping and much more.

The Assets Grid is core to the Alpha Theory solution. It has over 700 columns (still growing) that give investment managers information ranging from stock price and current position to the last date research for each stock was updated. Formula columns display calculated values such as how far each asset deviates from the optimum position. All of the data is updated in real-time, and hiliting capabilities focus user's attention when stock prices fluctuate, research for a position is outdated, or if the user is no longer pursuing the optimal investment strategy based upon Alpha Theory's calculations. The Alpha Theory solution has been proven time and again to make investors more successful. Many of the largest and well known fundamental hedge funds maximize returns by utilizing it on a daily basis.

### Challenge

- Build a web based application to present customer's entire portfolio with probability - weighted return
- Update data and rebalance optimal portfolio calculations in real time as stock prices change
- Allow Portfolio Managers to slice & dice data
- Revolutionize fundamental investing

### Solution

- Isomorphic's SmartClient platform as the base technology
- SmartClient ListGrid as the centrepiece, providing enhanced spread sheet capability in a web browser
- SmartClient Charts for data visualizations

### Why SmartClient?

- Powerful ListGrid with formulas, hiliting and more
- Depth of APIs and the ability to influence the SmartClient roadmap
- Isomorphic's ability to develop the initial prototype
- Impressive list of features and functionality built into product - no need for custom development

### Results

- Revolutionary real-time, collaborative web-based financial spreadsheet solution for investors
- Flexibility for end users to customize fields and formulas, slice & dice data, and make optimal investing decisions
- Clear market dominance

Risk Adjusted Return	Optimal Position (Absolute)	Current Position (Delta-Adj)	% from Optimal (Absolute)	Beta (Adjusted)	Liquidity(DM)	Scenarios Updated Date
265.5 %	10.0 %	4.1 %	5.9 %	1.52	30.0 USD	9/12/14
13.1 %	3.0 %	7.0 %	(4.0 %)	1.06	147.7 USD	9/5/14
2.8 %	0.0 %	3.7 %	(3.7 %)	0.85	300.6 USD	5/23/14
NA	0.0 %	3.7 %	(3.7 %)	0.96	68.0 USD	
15.5 %	3.3 %	7.0 %	(3.7 %)	1.62	1,244.5 USD	9/15/14
27.5 %	1.6 %	5.2 %	(3.5 %)	0.93	1.5 USD	7/10/14
▲ (2.9 %)	0.0 %	5.1 %	(5.1 %)	1.00	NA	5/23/14
52.4 %	8.8 %	8.6 %	3.2 %	1.29	184.4 USD	9/3/14
28.1 %	5.2 %	2.3 %	3.0 %	1.55	116.4 USD	9/3/14

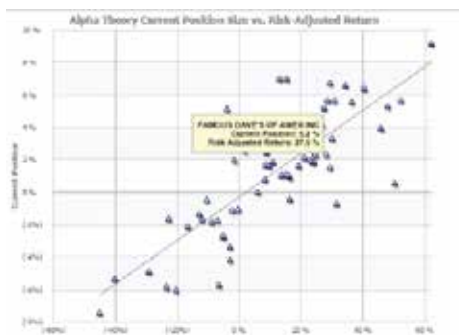
FundAsset Grid: 700+ columns, hiliting, formulas & more

### Data Just the Way You Like It

Alpha Theory users have a wide assortment of information to choose from. Depending on their needs at any given moment, some data may be more important. Alpha Theory provides standard views of the data with subsets of columns ordered and filtered in ways that match the user's particular needs. However, control is still in the hands of the end user to slice & dice data in order to create a customized format that makes most sense to them. Each user can select and rearrange columns, re-order the data, freeze columns (just like in a spreadsheet), filter the data, and - if appropriate - save or share their customized view.

Users are not just limited to the columns and data provided out of the box. Since every customer wants something just a little different, they can add their own custom fields, custom formulas, and rules for highlighting data under specific circumstances. Investment managers can collaborate from anywhere since the zero-install web-based interface is available on any browser, with no plugins required. And thanks to SmartClient, it just works on any device and operating system.

Sometimes, large volumes of data can hinder us from seeing the forest from the trees. That's why Alpha Theory added powerful visualizations by incorporating Isomorphic's HTML5 charts into the solution. Users can quickly pinpoint outliers or identify the optimal investment strategy. Huffman, the Alpha Theory CTO, investigated many competing charting solutions, but ultimately found SmartClient's "native integration impossible to ignore".



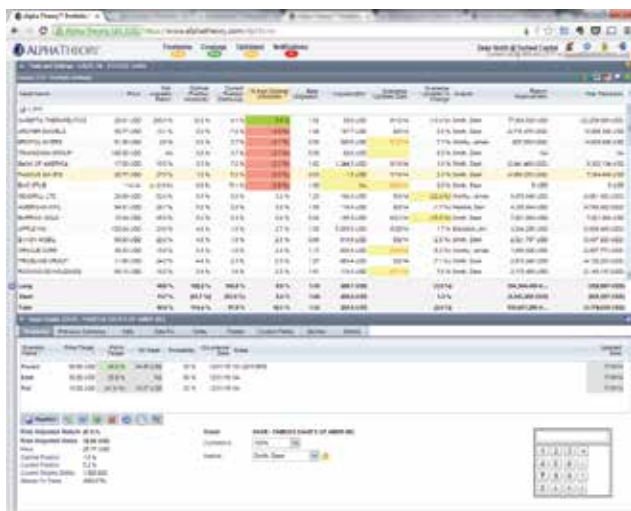
Slicing, dicing and visualizing to optimize portfolios

### Trailblazing as a Team Sport

To say that Alpha Theory is ahead of the competition would be inaccurate. Except for a few homegrown solutions, there is no competition. With the installed base increasing rapidly, Alpha Theory is undoubtedly in a fantastic position. However, getting a unique, highly technical solution such as Alpha Theory to market requires resolution of many unique technical issues. Alpha Theory found a solid partner in Isomorphic Software from the start and, as a result, both partners are infinitely stronger today.

Isomorphic Consulting built the initial Alpha Theory prototype via the Jump Start program, which combines customized training with hands-on development expertise. Jump Start helped to ensure that Alpha Theory followed best practices, avoided potholes, and put its best foot forward. It also highlighted areas of SmartClient that required performance tuning, additional features, or enhancement due to Alpha Theory's comprehensive use of SmartClient's deep feature set. And, Alpha Theory has found Isomorphic's Support Services to be "beyond phenomenal".

After eight years, Alpha Theory is still driving the SmartClient roadmap. Through Isomorphic's Feature Sponsorship program, Alpha Theory has contributed to several features in recent releases, such as Charting Enhancements in SmartClient 9.0, and ListGrid enhancements in SmartClient 10.0. This has proven to be a very low risk and cost effective approach as opposed to the risky prospect of internal custom development or integration of third-party solutions.



Easily among the most sophisticated AJAX applications in existence

### Alpha Theory Grids

The SmartClient ListGrid is central to the Alpha Theory solution:

- 700+ columns in a single grid
- Predefined grid views
- Formula columns
- Real-time data updates
- Hiliting of up, down & stale data
- Frozen columns
- Grouping
- Ordering
- Filtering
- End-user defined fields
- End-user defined formulas
- End-user defined grid views
- End-user defined hiliting
- Totals
- Charting
- Exports to PDF and Excel



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