FlexTrade

MSF576 - Money Document

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1. Business description

a. Introduction

We aim to develop an algorithmic trading tool, FlexTrade, that facilitates the execution of pairs trading strategies. FlexTrade will be designed to easily adapt to other types of algorithmic strategies a trader may want to implement as well.

b. Description of the trading/investment system

i. Overview

There are many vendors offering COTS (commercial off-the-shelf) tools for pairs trading. The tools that they are offering, however, lack flexibility and transparency which makes them difficult to be adapted to a variety of uses. They have a specific, single case use.

Our team, Back to the Futures, is proposing the development of a flexible tool called FlexTrade, which will initially be designed for the execution of pairs trading, but will also be easily adaptable to other trading strategies as well. FlexTrade will not be a tool for developing or finding strategies, rather a tool for execution of a developed strategy. For the purposes of this money document, pairs trading will be the focus of our tool.

ii. Preliminary research

Pairs trading is a widely used trading strategy in the trading world. It is a relatively simple strategy that is also easy to implement. The strategy is used in several classic spreads including the Treasury-Eurodollar spread, the SPY-DIA spread, calendar spreads, among many others. Traders implementing a pairs trading strategy without the aid of an automated trading system often face the following set of problems:

1. *Calculation* - Difficult to dynamically keep track of a lot of market data.
2. *Execution* - Requires constant monitoring to make sure the correct order is sent.

3. *Speed* - Risk of being slow even if the correct order is sent.
4. *Post trade analytics* - Knowing whether you did a correct trade or not is challenging in such a dynamic market. Proper attribution is difficult to perform.
5. *Risk controls* - Lack of automated risk metrics.

Thus many pairs traders seek software solutions to help implement their strategies. Customers of such software do not face the above problems, but often encounter one significant challenge: their tool was built with a specific implementation of pairs trading in mind, thus they are unable to make important changes to their strategy. This challenge makes it hard to adapt a new strategy to the existing infrastructure without major changes to the entire system.

iii. Competitive advantage

Based on real world experience, we have observed that while existing tools may be sufficient to meet the specific needs of traders who wish to perform pairs trading, these tools lack the flexibility to be easily adapted to other strategies. Tools developed by vendors such as Trading Technologies (TT), Pairmetrics, Orc Trading, and EZX satisfy some of the problems faced by pairs traders, however, we have yet to find a tool that satisfies all the problems and maintains flexibility/adaptability for algorithms we may want to implement in the future.

Our product, FlexTrade, will not only provide the same functionality as other pairs trading tools in the industry, but it will also be a flexible tool easily adaptable to other strategies.

c. Product team and relevant experience

Chris Price – B.S., M.S. Comp Sci, 8 yrs professional IT experience (Languages: Java, C#, C++, Perl)
Paul Jasper – B.A. Engineering, 2 years professional risk management experience
Omar Arain – B.A. Math, 7 years professional trading experience

2. Market analysis

a. Target Market

FlexTrade will be initially developed using the Interactive Brokers API. Consequently, our initial target market will be traders utilizing Interactive Brokers as their clearing firm. According to publicly available data, Interactive Brokers has over 140,000 customer accounts. Because of its low commission structure, ease of access, and degree of control over trading and routing, Interactive Brokers is a

popular brokerage for small to medium size day-traders or trading groups who are trying to execute many trades during the day. Our view is that these traders would be more interested in low-cost, flexible, automated trading software. Our compatibility with Interactive Brokers will be a large selling point to these traders.

b. Distribution and marketing channels

Our primary distribution channel will be our website. Potential customers will be able to place orders for, and download, our software via our website. We will primarily rely on word-of mouth marketing initially. We would like to have a more solid idea of our target markets desires before we commit to a costly marketing campaign. After we have a core set of users, we can make refinements to our system and then target a broader audience via advertising on the internet.

c. Competition

The automated trading software market is highly competitive, encompassing many price points and levels of sophistication. Major competitors include Trading Technologies, PairMetrics, RediPlus, Orc Trading, among others. Prices for automated trading software range from $500 dollars (for off-the-shelf pairs trading software) to thousands of dollars per month for custom built pairs-trading applications with professional support. Often, the major features that higher priced software offer over lower priced are:

1. *Lower latency*
2. *Higher performance*
3. *Trader's choice of execution venue* - Allowing traders to choose their execution venue as opposed to being forced to trade on a dark pool against informed traders.
4. *Flexibility* - Allowing traders to implement many different types of algorithmic strategies on through one framework.

Our product will not aim to compete on latency or performance. Instead, we hope to develop a framework that can implement many different types of strategies and allow for customization that traders would only have with high priced software.

3. Request seed capital

a. Projected Revenues

Since FlexTrade will initially be compatible with Interactive Brokers, a popular discount broker, we foresee a large pool of potential customers. We see an immediate opportunity for approximately ten sales, but see that increasing dramatically as we continue marketing. The potential customers can be categorized into two groups:

1. Single "home office" traders or very small (< 5 traders) firms who use the product for relatively small volume trading activity.

2. Larger firms that choose to exploit pairs with high velocity strategies

We will be packaging and pricing our products accordingly into two tiers:

FlexTrade Solo

The Solo software product will be compatible with a single desktop configuration. As such, it will be limited in the velocity and volume of activity, but more than sufficient to meet the needs of the target market. This will be the initial offering created as a part of this project.

Comparable tools range in price from $500 (xTrader by TT) and $800 (Pair Metrics) to multiple thousands. In order to compete with these better established tools, we will offer our product for $500 per seat license with the potential for volume discounts. There will be no periodic maintenance fees associated with Solo. However, customers will be entitled to updates for only one year at this price.

FlexTrade Pro

Although NOT in the scope of the current project, we plan to expand on our flexible client-only product and offer a client-server version with enhanced capabilities. A future money document will be required upon the completion of first release of Solo (current request).

This product will be capable of meeting the needs of more sophisticated clients and will be priced to match its potential. Comparable products are offered from $1000/month, so we see $750/month as an acceptable price for our initial release until we gain market share. In addition,

we will plan to offer on site professional services to assist with the installation and configuration of FlexTrade Pro at $200/hour.

b. Estimated development costs

Labor

Research & backtesting: 480 hours @ $100/hour = $48,000
Software development: 240 hours @ $120/hour = $28,800
Testing: 80 hours @ $80/hour = $6400

Development tools

Visual Studio Pro: 3 copies @ $600 = $1800
HP LoadRunner: 1 copy @ $3000 = $3000

Hardware

HP ENVY i7 16GB: 3 developers @ $1500 = $4500
HCP 19" LCD: 3 developers x 3 = 9 @$150 = $900

TOTAL: $93,850

c. Data and technological infrastructure requirements

Data

Interactive Brokers accounts: 3 @ $10,000 = $30,000

Servers

HP ProLiant Blade Server: 2 @ $4500 = $9000

Client testing PCs

Win 8,7, XP, Ubuntu desktops 3 @ $700 = $2100

Network

Comcast Business: $1000
Cisco 2900 Series GbE router/switch: 1 @ $2000 = $2000

Source Control System

Git Hub Private: $1000

TOTAL: $45,100

With additional funds in reserve for extra K|V loops:

TOTAL REQUESTED CAPITAL: $160,000

d. Risks, constraints, and assumptions

There is a risk of poor execution performance in production. To mitigate this, we will plan to perform load tests of all software to simulate real life system load.

Assumption is that DMA is not required. This would be cost prohibitive for our target market. It is not required for pairs trading.

e. Preliminary Timeline

Research	2/1/2013 - 2/28/2013
Backtest	3/1/2013 - 3/14/2013
Implementation	3/15/2013 - 4/28/2013
Manage	4/29/2013 - 5/9/2013