Problem statement for a Profit and Loss Portal

Revision History

Date	Version	Description	Edited by
September 14, 2015	1.0	Initial Draft – Team input only	Shane Bruggeman
September 21, 2015	1.1	Second Draft with limited new requirements - Team input only	Donnie Waters

High Level Problem Summary

Summary of Primary Success Criteria

- Stories are created and approved by the client.
- A working prototype is demonstrated and approved by the client.
- The working prototype is successfully integrated into the client's system
- A user manual is created to articulate how the system will be used.
- Client defined use cases are built and tested against client-defined success conditions

Scope

The Profit and Loss Portal will allow stock option traders to assess the net profit or loss they made on a given option on major stock exchanges. The system will parse files fed into it about accounts' trading histories and display the profits and losses the account made for given options. The system will maintain users and all of the trading accounts a user wants to monitor. The system will be integrated into the client's existing options trading software as an interchangeable part with few, if any, dependencies upon external resources.

Not included in the scope of this project are:

- Transactions (bids and offers) on individual exchanges / Money Management
- Legal documentation of transactions on individual exchanges
- Anything related to non-option financial tools like stocks, bonds, and futures
- Market trend analysis for potential low and high-points on individual options
- User alerts for investment opportunities
- Portfolio Management
- Company asset breakdown
- Company financial data / disclosures
- Retirement Planning

Detailed Problem Statement

1.0 Function

Key Business Features

Feature No.	Feature Name	Priority 1 - 5
1	Ability for a user to create an account	4
2	Ability for a user to log in to their account	4
6	Ability for a user to log out of their account	4
7	Ability to search for a stock on one particular exchange	1
8	Ability to see multiple results when a stock is listed on more than one exchange	1
9	Ability to view a graph or chart of an option's value	2
10	Ability to view user-defined portions of the graph in the past	3

11	Ability to keep a history of searched options	3
12	Ability to navigate quickly to frequently searched options	5
13	Ability to calculate key option statistics for a given stock	2
14	Ability to view key option statistics for a given stock	3
15	Ability for an account to create multiple accounts	4
16	Ability to manage or watch multiple accounts	2
17	Ability to quickly see profit and loss for all options	1
18	Ability to drill into a specific stock to see profits and losses of options over a specified time period	1
50	Integrate the solution into the client's existing software	1

Key enabling features

Feature No.	Feature Name
3	Compatible with existing software.
4	Compatible with existing hardware.
5	Access to major stock exchange data in reasonable (ms) time

Key interfaces

Feature No	Feature Name
17	Integration with client's custom solution

2.0 Form

Key attributes - Prioritized Most Important to Least

Modifiability, maintainability, and customizability

- System should be able to adapt to changing requirements as well as the addition of other stock exchanges without major modification.
- The system will be developed in the Rose-Hulman standard development environment and will utilize object oriented and reusable code modules to allow modifications, customization and support.

Usability

- The system should display data in a manner similar to competitors, such as E-Trade.
- The system will offer the ability to sort the result data by exchange and by individual option statistics.
- The system will offer the ability to separate results by exchange
- The system will highlight results so that individual rows are easy to read
- Data will be available to the client via either GUI or API

Performance and Capacity

- The system should be accessible and usable by all employees of a small company of approximately 100 employees simultaneously
- Option data should be generated in less than 2 seconds and the display should be updated in less than 4 seconds

Reliability and availability

- The application should be available the majority of the time with only minimal time allowed for maintenance. Downtime should be less than 1 hour per month.
- The system should be available when the client's existing system is available, except during scheduled downtimes of the combined system and those of individual stock exchanges.

Testability

- The system will be developed in a development environment, separate from the testing and production environments to allow for regression and load testing to be performed.
- Test cases will be built from client use cases and client-defined correct results to each use case

Security

- Users will have the ability to view only their search data. In the case of multiple users per account, each account will be allowed to view all other account data that falls under the 'main' overall account. A system-wide administrator will be allowed to delete or modify anything about any account.

Hardware and Software Constraints

Must be web based and developed in an application supported by the client. Current software/hardware include Microsoft Windows based operating systems and MySQL database and development environment.

Key Interfaces

- Integrated with existing client solution through an API.

Required Standards

Follows standard coding conventions for financial applications.

3.0 Economy

Business Context

At this time, the client relies upon exisitng solutions by competitors to supplement their trading software. The client would like an in-house solution, so that external dependencies are eliminated and additional customizations can occur. The client would like to make the display and calculation of stock option data and to become more clear and straightforward than found within existing solutions. The client wants to be able to quickly and effectively view pertinent data, while having the ability to directly modify and add features as additional needs arise.

Customer Organizational Constraints

Employees should have access to this application via secure entry over the World Wide Web. Basic browser skills will be necessary to use the application.

The application will update its display significantly slower than realtime updates. It will be the responsibility of the client to make the final informed decision as to whether to buy the option or not.

Development Organizational Constraints

The developers for the system should be able to perform all the life-cycle duties necessary for a successful handoff of the system at the end of the academic year.

Key Risks and Uncertainty

- Scope creep in key features. The team will mitigate by meeting with the client weekly and reviewing use cases and GUI's to get quick feedback and negotiate release features.
- Long-term support costs.

It is expected that this project will have a budget that includes at least the following:

- Development Costs by man-hours for Discovery, Development, Quality Assurance, User testing, Training, and minimal post implementation support.
- Annualized first year maintenance costs

4.0 Time

Historical Context

The client currently uses existing stock searching features in competing software, like E-Trade, to find the details needed to analyze potential trades. Many of the numbers are simply calculated and no calculation details are supplied.

Current Context

The market window for this product should be several years at least. There are quite a few existing competitors, notably E-Trade. This product aims to produce feature parity in search.

Future Context

This application could reasonably be extended to handle searches of other financial instruments, such as stocks. It could also be expanded to suggest reasonable stock options to watch given past search data and recent increases in price.

Development Time

The time to implement this project will be dependent on the following:

- Number of requirements
- Budget (as related to the number of man hours required to meet all requirements)

Key Stakeholders

Name	Project Relationship	Signature
Brian Marler	Business Owner	
Michael Hewner	Project Advisor	
Shane Bruggeman	Project Team	
Donnie Waters	Project Team	
Zachary Hull	Project Team	
Joseph McNelly	Project Team	