

Comparing Mouseover Definitions for Fidelity Investments

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THIS SLIDESHOW INCLUDES COMMENTS

Content of Presentation

About the Study

- Why was the study being conducted?
- How was the test conducted, and what data was gathered from participants?

Performance Metrics Analysis

- Task Time: How long did it take participants to complete tasks?
- Accuracy: Of the tasks presented, what percentage of participants completed the tasks successfully and correctly?
- Task Ease Rating: How easy or difficult was it for participants to complete their tasks?

Self-reported Metrics Analysis

- SUS score: How usable did participants perceive the method they were testing?
- Challenges and Effective Aspects: What are participants' thoughts on the methods they tested?

UX Recommendations

About the Study

Why conduct the study?

New users may not understand financial terminology.

If we help them learn how to manage their finances, we can be an ally in their financial futures, and they may be less likely to move to our competitors.

Users may make better decisions in regards to their finances if they understand the terminology.

So how should we present definitions for the terminology?



Three version of tool tips tested by UX

V1

Balances for Name this Account

Hide All

As of 01/31/2010 10:59 ET

	Current
Total Account Value	\$3,954.00
Cash (core)	\$596.00
Cash Credit	\$100.00
Margin Credit	\$349.00
Short Credit	\$14.00
Market Value	\$0.00
Held in Cash	\$2833.00
Held in Margin	\$35.00
Held in Options	\$10.00

Available to Trade

Intraday Buying Power	\$6,270.00
Margin Buying Power (Fully Marginable Stocks)	\$6,270.00
Non-Margin Buying Power (Options, Mutual Funds, Penny Stocks)	\$2,796.00
Committed to Open Orders View Orders	\$0.00

Available to Withdraw

Margin Credit tooltip: A margin credit indicates the amount due to you based on margin trade executions or an amount needed to meet margin requirements. On settlement date, this amount would be journaled to your Core if there is surplus in the Margin account.

Explicit Tooltip Icon & mouseovers for a specific definition of terminology

V2

Balances for Name this Account

For balance definitions, hover over field name.

Hide All

As of 01/31/2010 10:59 ET

	Current
Total Account Value	\$3,954.00
Cash (core)	\$596.00
Cash Credit	\$100.00
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Available to Withdraw

Margin Credit tooltip: A margin credit indicates the amount due to you based on margin trade executions or an amount needed to meet margin requirements. On settlement date, this amount would be journaled to your Core if there is surplus in the Margin account.

Tooltip icon appears on hover & mouseovers for a specific definition

V3

Hide All

As of 01/31/2010 10:59 ET

	Current	Change	Margin Details	Margin Definitions
Total Account Value	\$3,954.00	+\$44.00	Margin Debit	\$0.00

Total Account Value tooltip: The total market value of all positions in the account, including Core, minus any outstanding debit balances and any amount required to cover short option positions that are in-the-money

Terms	Definition
Cash (Core)	Account settlement position for trade activity and money movement. Executed Buy orders and cash withdrawals will reduce the Core, and executed Sell orders and cash deposits will increase the Core.
Cash Credit	A Cash Credit is an amount that will be credited to (positive value) the Core at trade settlement.
Margin Credit	A margin credit indicates the amount due to you based on margin trade executions or an amount needed to meet margin requirements. On settlement date, this amount would be journaled to your Core if there is surplus in the Margin account.
Short Credit	A Short Credit is the amount of money held aside to close short positions in an account. This value is compared against the market value of securities held short, and is marked to market weekly. If the market value of the securities Held Short increases (moves against you), it will cost more to close short positions, and money will be journaled (transferred) from margin and increase the Short Credit balance. If the market value of securities held short decreases (moves in your favor), it will cost less to close short positions, and money will be journaled (transferred) out of the Short Credit to margin.
Held in Cash	The total market value of all long Cash account positions. This figure is reduced by the value of any in-the-money covered options and does not include shares bought on Margin, shares held short, or cash in the Core Money Market.
Held in Margin	The total market value of all long Margin account positions. This figure is reduced by the value of any in-the-money covered options and does not include shares held as Cash positions, shares held short, or cash in the Core Money Market.
Held Short	The total market value of all positions held short in the account. This figure is reduced by the value of any in-the-money covered options and does not include shares held as Cash or Margin positions, or cash in the Core Money Market.
Held in Options	The market value of all long and short option positions held in the account.

Explicit tooltip area at the top of the page & one tooltip for all applicable terminology definitions

Study Implementation Details

The study was conducted online.

312 people with a minimum level of financial expertise completed the study.

Each participant received the same 5 tasks, in a random order.

- They had to choose the correct answer to the task from a drop-down list.
- The answer could be found using the help feature.
- Data collected for each task:
 - Accuracy (0=Wrong, 1=Correct)
 - Time (in seconds)
 - Task Ease Rating (1-5, with 5 being easiest)

Each participant was randomly assigned to one of the three help designs being tested (V1, V2, or V3).

System Usability Scale (SUS) was administered at the end (285 completions).

Participants were asked (not required) to provide comments about:

- Challenging aspects of the interface
- Effective aspects of the interface

Performance Metrics Analysis

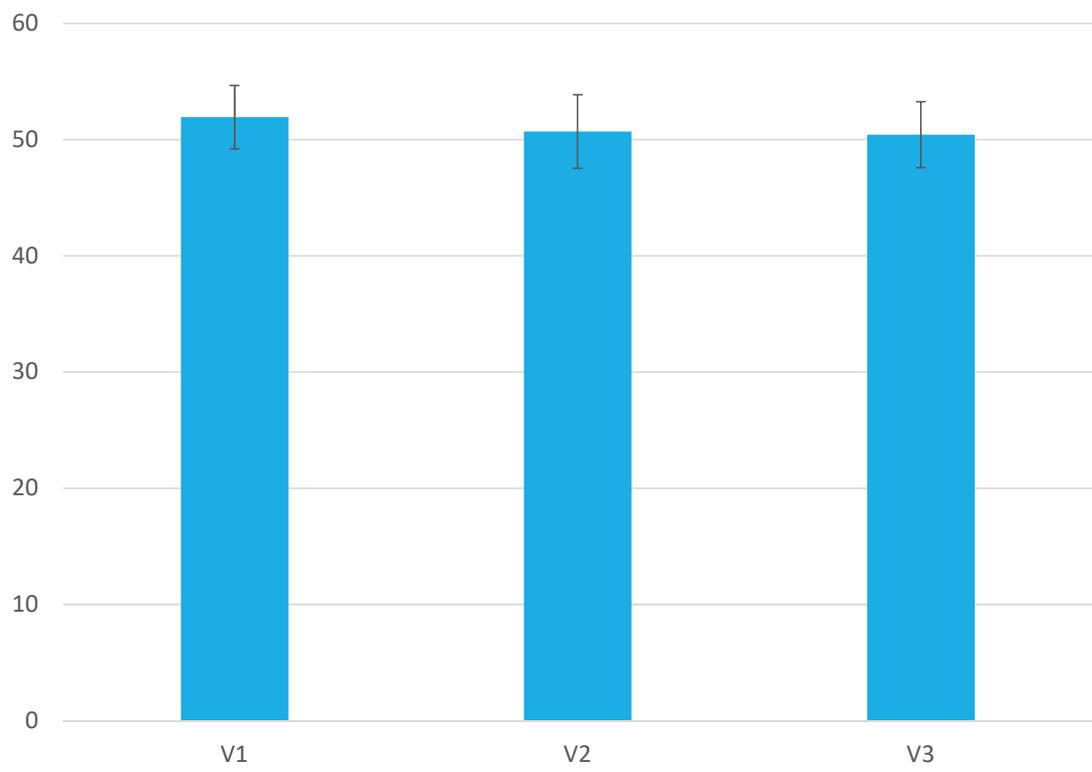
Overall Average Task Times

Based on the overlapping error bars, there was no significant difference in task completion time among the three versions presented to users.

NOTE: Outliers in the task time were removed on a per-task basis prior to the data analysis. A user's task time would be considered an outlier if a given user took more time than:

(average task time by all users for a task + 3 standard deviations)

Average Task Time (seconds)
with 90% confidence interval



Slide 8

MA1

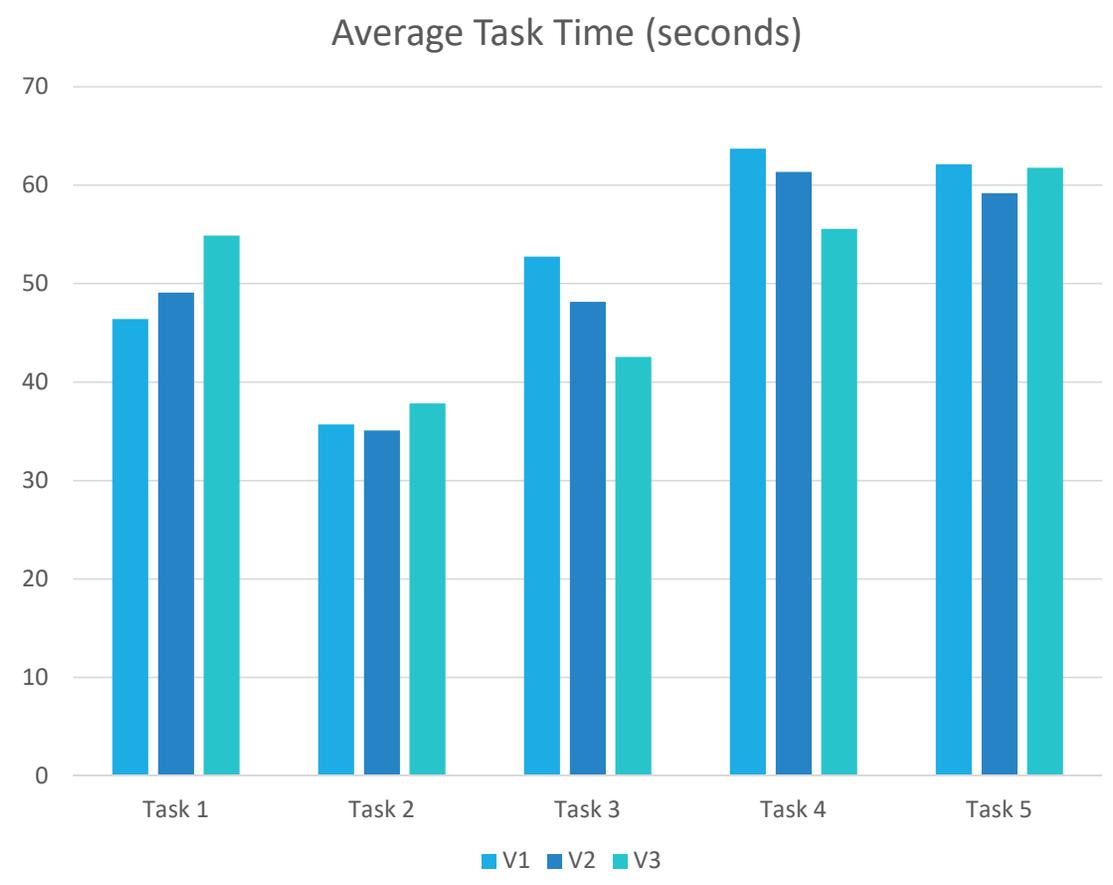
These were the steps I took to get this graph:

- 1) Removed the outlier data (taking the average and SD from the time column in regards to task number).
- 2) Made a pivot chart which included the version and task time.
- 3) Copied and pasted the pivot chart twice on the same sheet.
- 4) Made one pivot table for the average time, the second pivot table for the SD, and the third for the CountNumber.
- 5) Made a bar graph from the average task time pivot table.
- 6) Made the error bars with the function =CONFIDENCE.NORM(0.1, [SD cell], [count cell]) for each version.

Michael Andryauskas, 9/14/2017

Completion Time by Task

The amount of time it took users to complete a task depended on the task. People generally took the least amount of time with Task 2, while taking the most time with Task 4 and Task 5.



Slide 9

MA6 This graph was made in a similar manner as the graph from the previous slide, except the axis represents the tasks and the legend represents the version that was tested for a given participant.

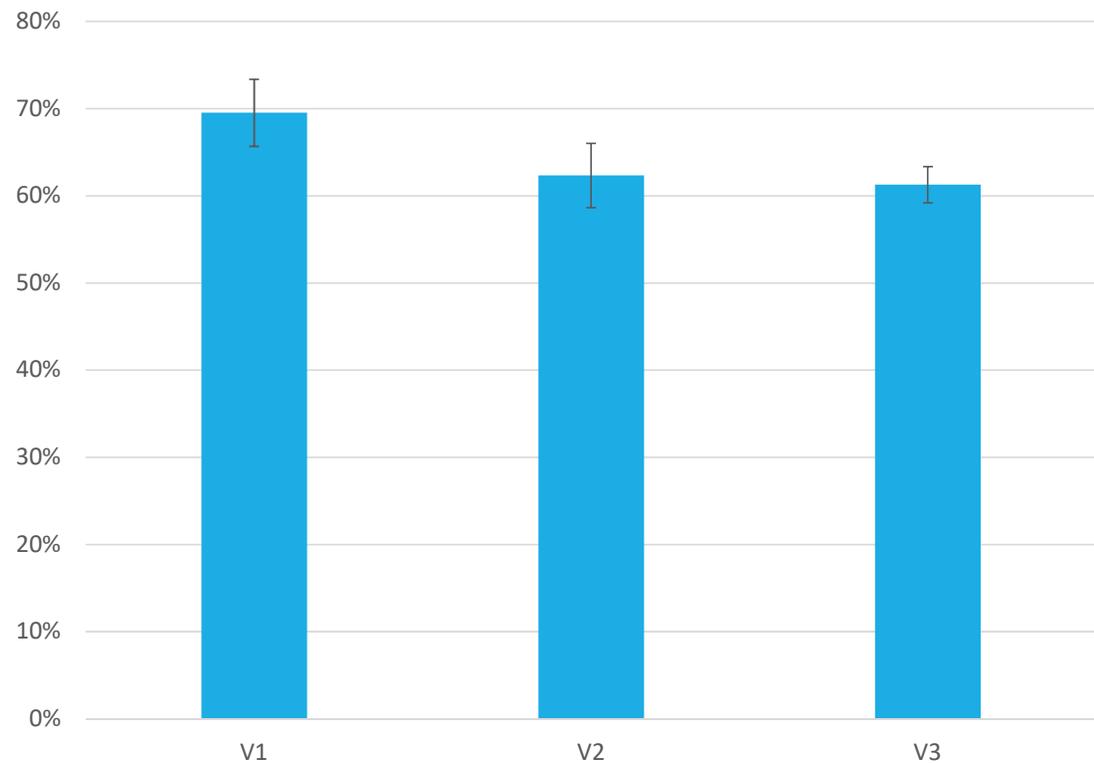
Michael Andryauskas, 9/16/2017

Overall Average Accuracy

Users who used V1 were more successful in completing the given tasks with the correct answer than those presented with one of the other two versions.

The difference between V1's results and that of the other two versions are significantly different due to the lack of overlap from the error bars. There was no significant difference in accuracy when comparing the results from V2 and V3 due to the overlapping error bars.

Accuracy
with 90% confidence interval



Slide 10

MA3

These were the steps I took to get this graph:

- 1) Made a pivot chart which included the version and accuracy.
- 2) Copied and pasted the pivot chart twice on the same sheet.
- 3) Made one pivot table for overall accuracy, the second pivot table for SD, and the third for the count.
- 4) Made a bar graph from the overall accuracy pivot table.
- 5) Made the error bars with the function =CONFIDENCE.NORM(0.1, [SD cell], [count cell]) for each version.

Michael Andryauskas, 9/14/2017

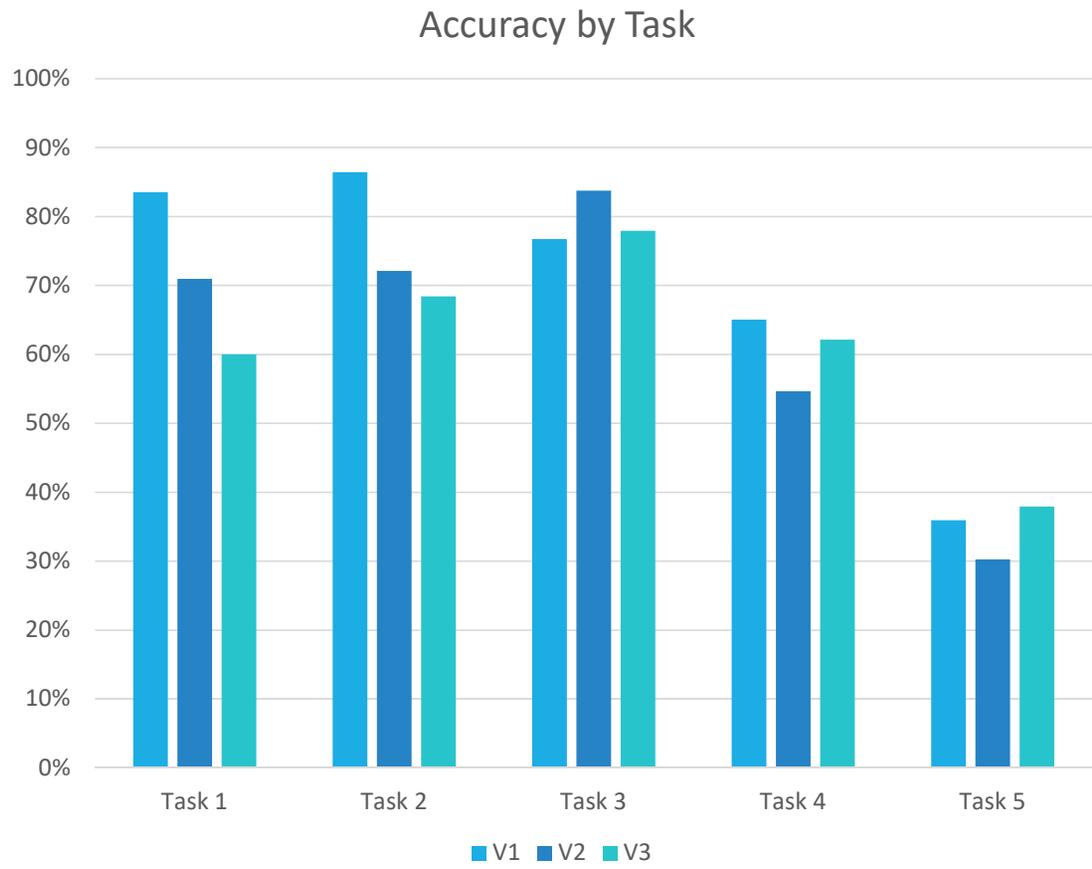
MA4

For calculating the confidence interval, while binary results generally call for a different method for calculating the confidence interval, the number of participants would make the difference between the regular calculation results and the binary calculation results negligible.

Michael Andryauskas, 9/14/2017

Accuracy by Task

It appears that many users had trouble completing Task 5, with low accuracy from participants using any version of the tool tips.



Slide 11

MA7 This graph was made in a similar manner as the graph from the previous slide, except the axis is the tasks and the legend was the version that was tested for a given participant.

Michael Andryauskas, 9/16/2017

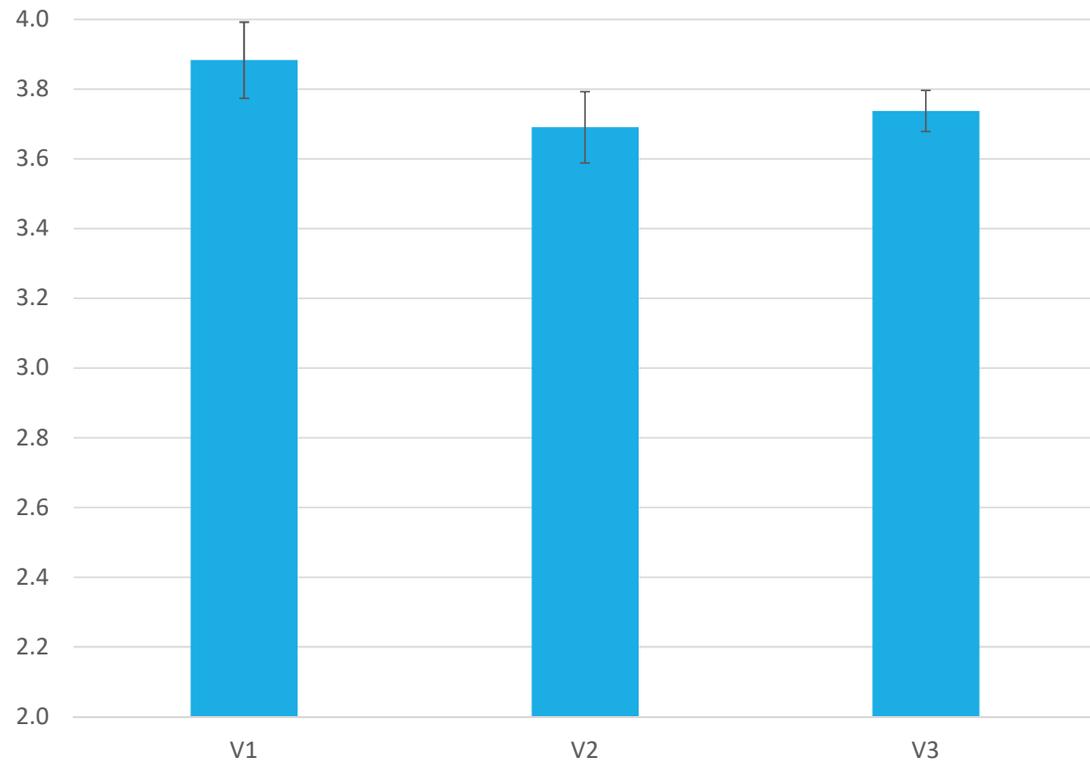
Overall Average Task Ease Rating

Users who were presented with V1 found completing the tasks to be easier than doing the same tasks with the other two versions.

The difference between V1's results and that of the other two versions are significantly different. There was no significant difference in accuracy when comparing the results from V2 and V3.

T-Tests comparing the results between V1 & V2 (0.027) and between V1 & V3 (0.085) are both less than the 90% confidence interval's alpha (0.1), making the results significant.

Average Task Ease Rating (1-5)
with 90% confidence interval



Slide 12

MA2

These were the steps I took to get this graph:

- 1) Made a pivot chart which included the version used and task ease rating.
- 2) Copied and pasted the pivot chart twice on the same sheet.
- 3) Made one pivot table for average task ease, the second pivot table for the SD, and the third display for the Count.
- 4) Made a bar graph from the task ease pivot table.
- 5) Made the error bars with the function =CONFIDENCE.NORM(0.1, [SD cell], [count cell]) for each version.

Michael Andryauskas, 9/14/2017

MA5

Calculation method for T-Test between v1 & v3:

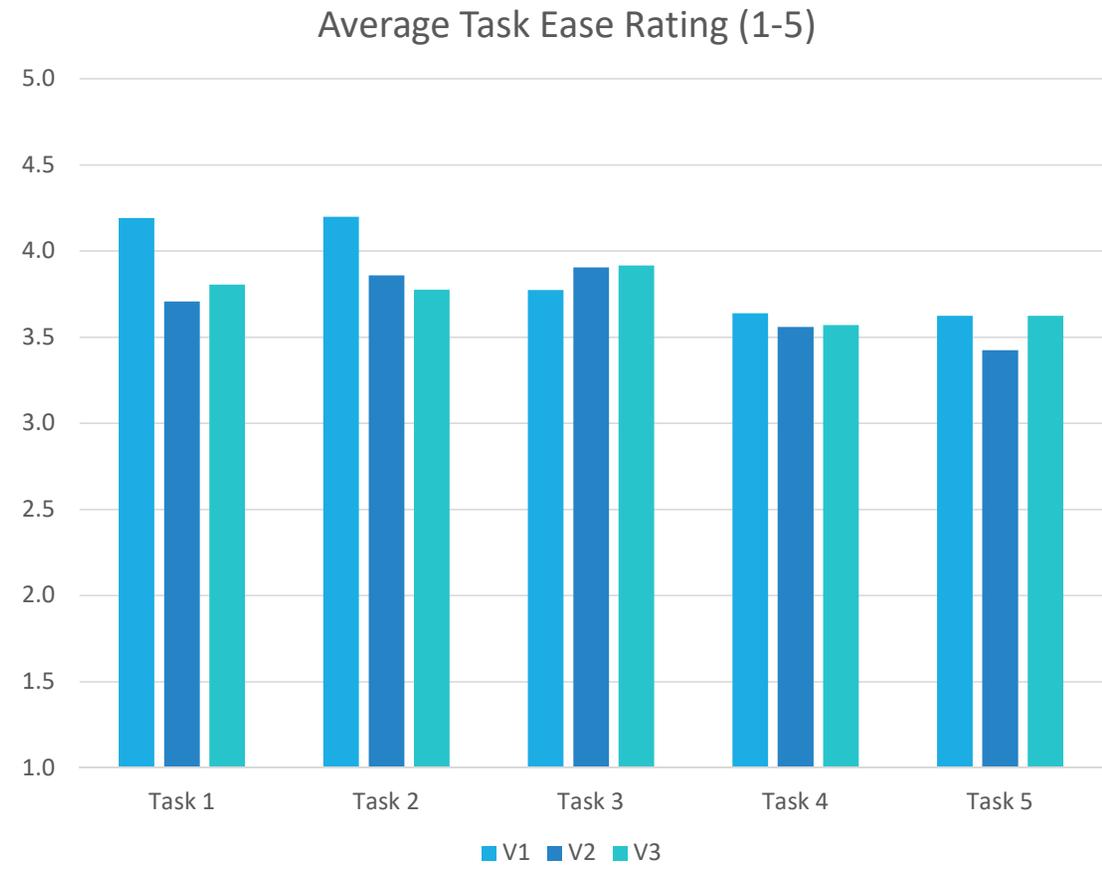
=T.TEST(IF(data!B:B="V1", data!F:F, ""), IF(data!B:B="V3", data!F:F, ""), 2, 2) [Then pressed ctrl-shift-enter]

For this to calculate properly, I had to change all blank Task Ease ratings cells to non-numerical values.

Michael Andryauskas, 9/14/2017

Ease by Task

Overall, there was no task that was deemed too easy or too hard by participants when compared to the other tasks.



Slide 13

MA8 This graph was made in a similar manner as the graph from the previous slide, except the axis is the tasks and the legend was the version that was tested for a given participant.

Michael Andryauskas, 9/16/2017

Self-Reported Metrics Analysis

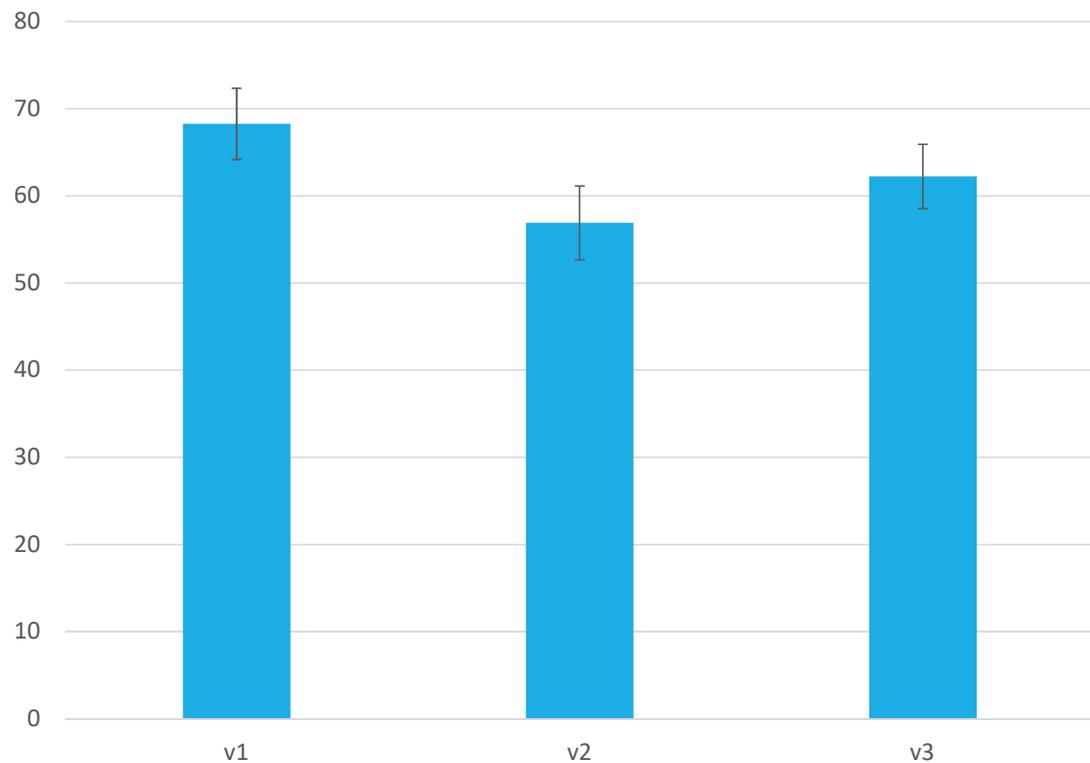
Average SUS Scores

Users who were presented with V1 gave the method a higher SUS score than those presented with the other methods.

The difference between V1's results and that of the other two versions are significantly different. The difference between V2's and V3's results approaches significance.

A T-Test comparing the results between V1 & V3 (0.073) is less than the 90% confidence interval's alpha (0.1), making the results significant.

Average SUS Score
with 90% confidence interval



Slide 15

MA9

These were the steps I took to get this graph:

- 1) Added a new column which contained the total SUS score calculation for each row.
- 2) Made a pivot chart which included the version used and total SUS score.
- 3) Copied and pasted the pivot chart twice on the same sheet.
- 4) Made one pivot table for average SUS score, the second pivot table for the SD, and the third for the Count.
- 5) Made a bar graph from the average SUS score pivot table.
- 6) Made the error bars with the function =CONFIDENCE.NORM(0.1, [SD cell], [count cell]) for each version.

Michael Andryauskas, 9/16/2017

MA10

Calculation method for T-Test between v1 & v3:

=T.TEST(IF(sus!C:C="v1", sus!N:N, ""), IF(sus!C:C="v3", sus!N:N, ""), 2, 2)

Michael Andryauskas, 9/16/2017

Presenting the user feedback

There are 8 slides pertaining to feedback.

- General sentiments (2 slides)
- Version-specific sentiments (2 slides each).

The first slide will contain quotes about the subject matter.

Positive quotes will appear in blue speech bubbles.

-Participant #

Negative quotes will appear in red speech bubbles.

-Participant #

The second slide will contain a summary of all feedback users provided.

- Challenging aspects
- Effective aspects

Quotes applicable to all versions

"I liked the definitions readily available"

-Participant 87

"The popup help is just what this page needed. There are many balances, and a casual user just doesn't remember what they all mean and doesn't necessarily care about most of them."

-Participant 134

"Additional balances was [sic] a little confusing."

-Participant 66

Some of the definitions felt broad, and confusing.

-Participant 66

Feedback applicable to all versions

EFFECTIVE ASPECTS

Many participants appreciated the concept of Fidelity providing definitions for them.

CHALLENGING ASPECTS

Some of the definitions were still confusing to certain participants.

- Additional Balances
- Margin Equity/Margin Equity Percentage
- Margin Buying Power

What people thought about V1

“The help was easy to find with the question marks, and it was exactly what I needed to know about the item I was looking at.”

-Participant 90

“Had to hover mouse over "?" help, but when I moved my cursor the help went away. Needed it to stay up.”

-Participant 29

“Even if the description of the term is not clearly stated on the page, clicking a question mark next to the term is fairly intuitive.”

-Participant 205

Summary of feedback for V1

EFFECTIVE ASPECTS

60% of participants who left feedback specifically mentioned hovering above jargon to find the definition as a positive feature.

Several participants also used the word “intuitive” when describing the tool tips.

CHALLENGING ASPECTS

The tool tips did not stay on screen if the user moved his mouse off the icon.

There were some terminology that participants didn't know about that were not given tool tips.

What people thought about V2

“Once I accidentally found the definitions, I really liked the way they are accessed.”

-Participant 156

“Some of the items had the mouse over with more information some didn't. Also, if you didn't know enough to mouse over for more information, you wouldn't know it was there.”

-Participant 147

“I didn't see the hover over directions at the top of the page and therefore it was tough to know where to look for definitions.”

-Participant 276

Summary of feedback for V2

EFFECTIVE ASPECTS

Participants liked the hovering tooltips in general.

- However, many specifically mentioned that they didn't initially realize they were available.

CHALLENGING ASPECTS

Participants did not realize they can hover over terminology for definitions at first.

Several participants mentioned that they were unsure when terminology had definitions.

Several participants completely missed the hovering explanation.

What people thought about V3

“This sheet was easy to follow and it was easy/clear to find help.”

-Participant 5

“Seems to be too busy...Not laid out very well”

-Participant 51

“It calls for the user to be an expert on the 1st use [of the website].”

-Participant 109

“Popup help was always in the way and gave too many field definitions at once. Also wasn't immediately clear how to close it.”

-Participant 177

Summary of feedback for V3

EFFECTIVE ASPECTS

There were mixed responses in regards to the general layout of the definitions popup; some liked it, some did not like it.

CHALLENGING ASPECTS

Several participants felt the amount of information presented to them at once was overwhelming and confusing without expert financial knowledge.

Several participants didn't like the amount of real estate the definitions page occupied.

UX Recommendation

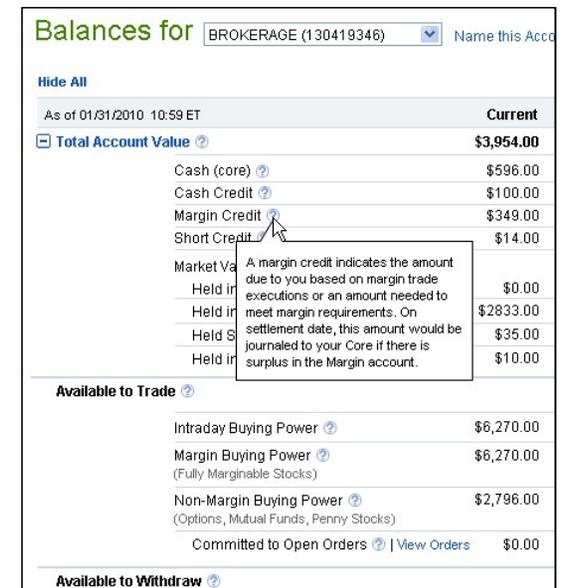
Recommended version to implement for the live site: Version 1

What V1 provides better than the other versions

- Better task accuracy
- Easier to use
- Easier to understand
- Higher Usability Rating (SUS scores)

Some more information to test based on user feedback

- More tooltips required?
- Longer tool tip duration?
- Clearer definitions?



The screenshot shows a web interface for account balances. At the top, it says 'Balances for' followed by a dropdown menu showing 'BROKERAGE (130419346)' and a link 'Name this Account'. Below this is a 'Hide All' link. The main table shows account balances as of 01/31/2010 at 10:59 ET. The table has two columns: the account name and the current value. A tooltip is visible over the 'Margin Credit' row, explaining that it represents the amount due to the user based on margin trade executions or the amount needed to meet margin requirements. On the settlement date, this amount would be journaled to the user's Core account if there is a surplus in the Margin account.

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