Evaluation Guide

This evaluation guide is designed to provide a brief introduction to Quantcha's Options Search Engine (OSE). It will cover the key concepts of using the OSE, as well as provide some in-depth explanation as to the design decisions behind the development of the product.

Contents

Overview

Quantcha provides the OSE as a set of tools for searching, filtering, and analyzing stock market investments. It's provided for free, without ads, and does not require registration. All you need to do is to provide a forecast for the future performance of a stock, and the OSE will do all the modeling and calculations to determine the best available trades to capitalize on your projection.

What is a forecast?

The OSE user experience revolves around the forecast you provide. There are three key elements to a forecast: an underlying stock (such as "MSFT"), an expiration date (such as January 17, 2015), and a target price range (such as $44-46). There are many ways to derive a forecast, whether it be from technical analysis, P/E extrapolation based on an earnings estimate, etc. Many investors simply use the forecasts published from investment advisories, such as analysts at major firms. It's important to remember that while the OSE will do its best to find you the optimal trades for your forecast, your results will ultimately depend on the accuracy of the forecast you've provided.

The technology

The OSE has been developed as a Web application using the principles of modern design. It's designed to responsively adapt to your device, whether it be a large-screen monitor on a desktop PC or the iPhone in your pocket. The OSE also makes the most of your device's processing power in order to deliver a user experience that runs as quickly as possible, delivering results that are almost instant. All you need is a fairly modern device or computer that was released in the last five years or so. Because of the nature of Web software, you will need an Internet connection to use the OSE.

Assumptions

This guide will cover the functionality of the OSE based on using Internet Explorer on a desktop PC, although the user experience should be pretty consistent across other browsers, operating systems, and devices. It is also assumed that the reader has a basic understanding of the fundamentals behind trading stock options, such as calls vs. puts, long vs. short, and multi-leg strategies, such as spreads, etc.

Technical notes

Throughout the OSE, inferences are made as to market sentiment. These inferences are based, at least in part, on the Black-Scholes model for the valuation of European-style options. While the options traded on major markets are generally American-style, the Black-Scholes European-style calculations are typically close enough for research purposes. In addition, forecasted dividends are appropriately accounted for when performing the valuations.

Delayed LIBOR rates are used for risk-free interest rates when required.

Audiences

The OSE was developed in response to a set of challenges that have become more and more relevant to stock option investors, their investment advisors, and the brokerages that fulfill their orders.

Investors

Investors want to get the biggest bang for their buck. While they can understand the fundamentals of options trading and may have the best insights regarding underlying stocks, figuring out the optimal trade for their risk and reward desires involves a lot of effort that often doesn't yield results. The OSE addresses this by taking on all that legwork by finding the absolute best trades for the investor's sentiment.

Investment advisors

Investment advisors win by cultivating successful clients and followers. When those customers place trades based on advice from their advisory, they're more likely to make money and continue to follow the advisor. The OSE supports this effort by removing the friction between the advice an advisor publishes and the trade the investor places.
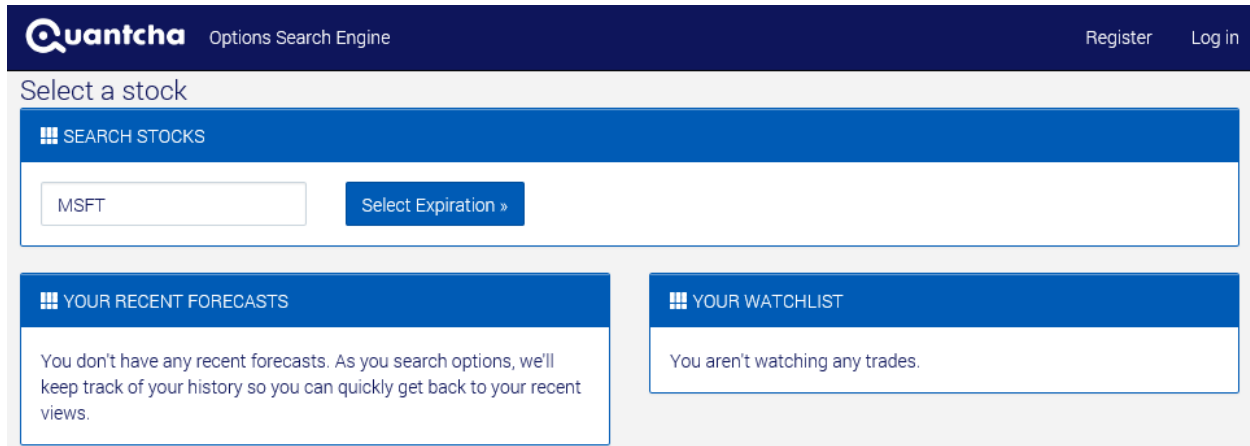
Brokerages

Brokerages want their retail customers to keep their accounts healthy so that they're able to trade more and build their asset base. When a customer underestimates the risks associated with a self-directed trade, it can result in catastrophic loss that sidelines their account for years. The OSE helps address this risk by helping their customers make safer, more informed trades.

A guided tour

The get started with the OSE, you can either navigate to https://quantcha.com/OSE or click the "Try it now" button on the front page of Quantcha.com. Assuming this is your first visit, you'll begin at a dashboard that looks something like the screenshot below.
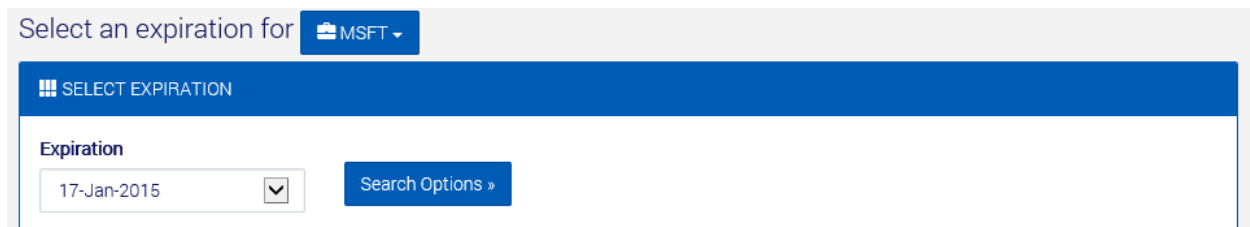
Searching for trades

There are three main aspects to this view:

- The **Search** box is where you enter a company or symbol to search on.
- The **Recent Forecasts** panel displays the history of your five most recent forecasts. A "forecast" is simply a price range for a company on an expiration date, such as "MSFT trading $44-46 on January 17, 2015". One of these is automatically created each time you run a search and updated when you change one of the prices in the range.
- The **Watchlist** panel displays the trades the investor has marked for "watching". When you watch a trade, it becomes available in your watchlist for easy access. You can also opt in to receive email updates.

If you enter "MSFT" in the search box and click **Select Expiration**, you'll be brought to a view where you can select from the expiration dates currently available across all options being traded for that stock.

First, you'll select an expiration date, such as "17-Jan-2015". Next, when you click **Search Options**, the OSE will acquire all options being traded for MSFT that expire on 17-Jan-2015 and model thousands of potential trade candidates using recent (15-minute delayed) market data.

Here's what the search results view looks like:

It might seem a little complex at first, so we'll break it down by component.

Breadcrumb

First, the **Breadcrumb** menu at the top of the OSE provides an easy way to jump around to different parts of the user experience. It also give you an easy way to quickly change the underlying or expiration for the current search.

Forecast

Next, the **Forecast** panel defines the parameters by which the trades are evaluated. There are three key parameters:

- The **Range** is the price range for the underlying on the expiration date. In other words, the screenshot above is instructing the OSE to calculate the risks and returns of all modeled trades based on the scenario where MSFT trades between $40.60 and $51.22 on 17-Jan-2015. If you had previously provided a forecast range, it would automatically be applied for evaluation when you returned to visit this particular underlying/expiration combination. However, since this is your first visit, the OSE calculates the implied volatility of the trade and applies one standard deviation above and below the current market price of the stock. This results in a default range that represents a neutral forecast with approximately 68% likelihood, based on market pricing of the options. You can easily adjust that later.
- The **Budget** represents the maximum budget and risk you are willing to take on. In the case of most debit trades, this will be the maximum cost of opening the position. In the case of most credit trades, this will be the maximum liability for the trade. By default, a budget of "0" is used, indicating that all trades will be included using their minimum quantity, and nothing will be filtered out based on risk. Note that your budget is a "global" parameter, so you don't need to re-set it each time you look at a forecast.
- The **Brokerage** is available if you want to include estimated fees and commissions into the evaluation. When a brokerage is selected, their costs will be factored into calculations, which can change results significantly if there are many low-cost options involved. Like your budget, the brokerage is applied globally.

Note that all trade analyses performed in the search use the provided forecast and do not take into account probabilities or pricing scenarios outside of the provided range. As a result, you see exactly what you've requested to be modeled. However, there is an in-depth trade analysis view covered later wherein broader pricing possibilities are applied and presented to give you a better view into the global risks of the trade.

Sort by & filters

On the left side of the screen, you can adjust how the search results are filtered and sorted. Sorting options include the ability to sort by the average, highest potential, and minimum possible returns for the provided forecast. In addition, you can hand-select which strategies are included when modeling trades. Finally, there are three return filters that will ensure that the results meet your minimum requirements for risk and reward.

Top 10 trades

In the **Top 10 Trades** panel, the best search results for the provided forecast and filters are displayed. Each result indicates its average, highest potential, and minimum returns for the provided forecast, budget, and brokerage. They also provide a list of the option legs required to open the position, as well as the total cost (or credit) for each position and absolute risk. Note that there are over 11,000 trades that have been generated from the 50 available options. And since you haven't set any filters, they're all being sorted into the results to determine the top 10. Note that only the 50 options with strikes closest to the current market price of the underlying stock are used to model trades. Most stocks don't even have 50 options per expiration.

Forecasting, sorting, & filtering

Now we can dig into refining the search. We'll start off by updating the forecast.

Range : $44.00 – $46.00   **Budget** : $1,000.00   **Brokerage** : Fidelity

Simply click one of the blue links next to one of the fields and you'll get text boxes you can edit.

Change the fields to represent a different forecast view, and add in a budget and brokerage for good measure. Click **apply** to apply the new parameters to the search.


The first thing you may notice is that some of the trades have been filtered out. While the screenshot above indicates that over 11,000 trades were generated from the 50 available options, nearly 2,000

were filtered out. This was due to setting a budget. As it turns out, those trades filtered out have a risk greater than the available budget, so they're not being shown at all. If you reset your budget to 0 (or set it much higher), they'll return. You may also notice that the absolute numbers being shown for cost, credit, and the option legs are much higher. This is because the OSE optimizes the trade to deliver the highest potential returns for your available budget, while also taking brokerage fees and commissions into account.

Next, let's change the strategies being applied. By default, all strategies are included when modeling trades. However, you might prefer specific trades, or your brokerage account might only be enabled for level 1 or 2 strategies. If you click the **Strategies** panel, it'll expand to display which strategies are in use.
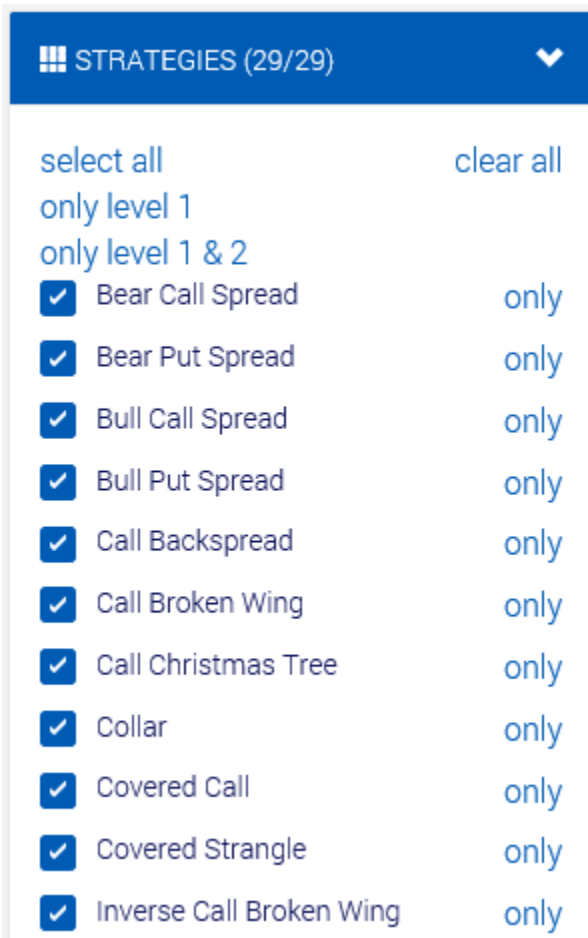
Click the **"only level 1 & 2"** option to remove the strategies requiring level 3 or higher. Note that strategies like the butterflies are unchecked while others, such as collars, are still included.

☐ Call Broken Wing	only	
☐ Call Christmas Tree	only	
☑ Collar	only	
☑ Covered Call	only	
☑ Covered Strangle	only	
☐ Inverse Call Broken Wing	only	
☐ Inverse Put Broken Wing	only	
☑ Long Call	only	

The search results also update instantly to reflect the new set of strategies to consider.

▦ TOP 10 TRADES

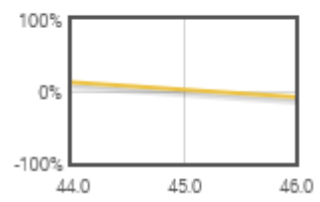of **320 filtered trades** of **11,627 total trades** from **50 options**

Long Put

2.17%
average

12.39%
potential

-8.04%
minimum

$978.74 cost (credit)

Buy 1 MSFT 55 Put 17-Jan-2015 $970.00

$978.74 risk

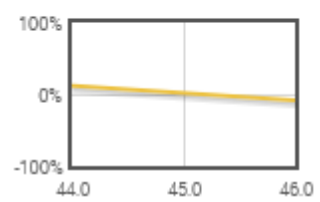Analyze »

Long Strangle

1.73%
average

11.91%
potential

-8.44%
minimum

$982.97 cost (credit)

Buy 1 MSFT 55 Put 17-Jan-2015 $970.00

Buy 1 MSFT 60 Call 17-Jan-2015 $4.00

$982.97 risk

Analyze »
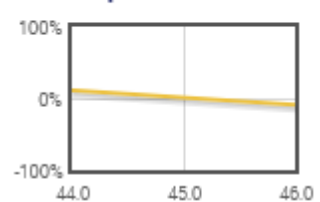
Long Straddle

1.08%
average

11.19%
potential

-9.02%

$989.27 cost (credit)

Buy 1 MSFT 55 Call 17-Jan-2015 $10.00

Buy 1 MSFT 55 Put 17-Jan-2015 $970.00

$989.27 risk

You can then adjust the return filters to tweak the results to give you an even better set of results. Note that as you move the **Minimum return** filter higher, it automatically updates the **Minimum average** and **Minimum potential** filters since the average and potential marks must be at least as high as the minimum return.

And as the filters are adjusted, so too are the results. Since all of the heavy lifting is done on your local device, the user experience is really fast.
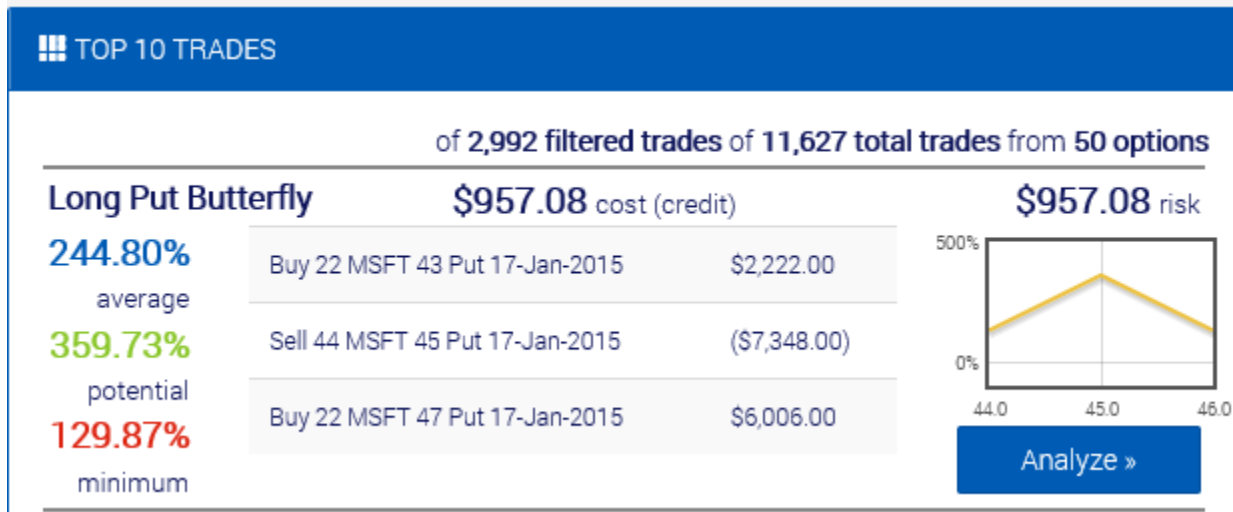
Analyzing a trade

Let's take a step back now and reconsider a trade we saw earlier before we filtered out the butterfly strategies.

This trade looks very promising because it's promising a return of up to 359% over a few short months, if our forecast holds true. However, it's important to better understand the various aspects of a trade before executing, so you can click the **Analyze** button to get a better trade analysis for this opportunity.

Long Put Butterfly ▾ trade analysis for 💼 MSFT ▾ on 📅 17-Jan-2015 ▾

▦ FORECAST

Range : $44.00 – $46.00   **Budget** : $1,000.00   **Brokerage** : Fidelity

14.73% probability based on implied market distribution. Implied volatility for this expiration is 19.46%.

Share »   Watch »   Place Trade »
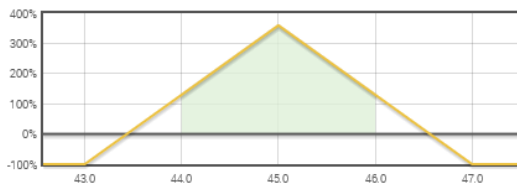
▦ POSITIONS

Buy 22 MSFT 43 Put 17-Jan-2015 @ $1.01	$2,222.00
Sell 44 MSFT 45 Put 17-Jan-2015 @ ($1.67)	($7,348.00)
Buy 22 MSFT 47 Put 17-Jan-2015 @ $2.73	$6,006.00
Total cost (credit) for positions	**$880.00**
Total risk for positions	**$880.00**

▦ COST & RISK

Estimated commission (Fidelity)	$73.95
Estimated fees (Fidelity)	$3.13
Total cost (credit) for trade	**$957.08**
Total risk for trade	**$957.08**
Total investment (greater of cost and risk)	**$957.08**

▦ ANALYSIS FOR FORECAST $44.00-$46.00

Average return (linear)	$2,342.92	244.80%
Highest potential	$3,442.92	359.73% at $45.00
Minimum return	$1,242.92	129.87% at $44.00, $46.00
Breakeven		at none
Range probability		14.73%
Profit probability		100.00%

▦ ANALYSIS FOR FULL IMPLIED RANGE $29.99-$61.83

Average return (probable)	($309.64)	-29.94%
Highest potential	$3,442.92	359.73% at $45.00
Minimum return	($957.08)	-100.00% at $29.99-$43.00, $47.00-$61.83
Breakeven		at $43.44, $46.56
Range probability		99.73%
Profit probability		22.93%

▦ VOLATILITY SKEW
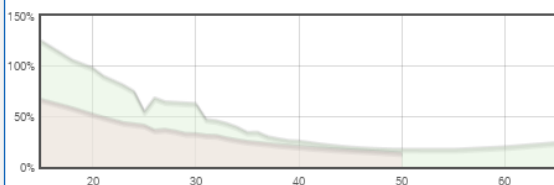
Call implied volatilities are in green. Puts are in red.

▦ FORECAST VS. IMPLIED DISTRIBUTION
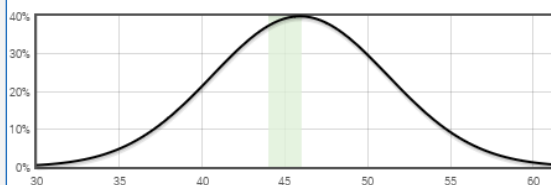
There is a 14.73% probability that MSFT closes in the range $44.00-$46.00 on 17-Jan-2015 based on the market's current implied distribution.

The trade analysis view provides an in-depth review for this trade. Let's break it down panel by panel.

POSITIONS	
Buy 22 MSFT 43 Put 17-Jan-2015 @ $1.01	$2,222.00
Sell 44 MSFT 45 Put 17-Jan-2015 @ ($1.67)	($7,348.00)
Buy 22 MSFT 47 Put 17-Jan-2015 @ $2.73	$6,006.00
Total cost (credit) for positions	**$880.00**
Total risk for positions	**$880.00**

| COST & RISK	
Estimated commission (Fidelity)	$73.95
Estimated fees (Fidelity)	$3.13
Total cost (credit) for trade	**$957.08**
Total risk for trade	**$957.08**
Total investment (greater of cost and risk)	**$957.08**

In the **Positions** panel, you can see the exact positions and their respective costs involved in opening this trade.

The **Cost & Risk** panel provides a detailed breakdown of brokerage costs, as well as the total risk and investment requirements for the trade. Note that the **cost** is the amount it costs to open this position while the **risk** is the maximum amount this trade could lose under the worst-case scenario. The total **investment** is the greater of the two and represents the amount of cash you'll need to either open and/or cover all the liabilities of the trade. For most strategies, the risk is higher than the cost. However, some strategies, such as the **Collar** and **Protective Put** have higher opening costs than total risk since their downsides are hedged. The bottom line is that these are all things you should fully understand before executing a trade, so we put it right at the top.

ANALYSIS FOR FORECAST $44.00-$46.00		
Average return (linear)	$2,342.92	244.80%
Highest potential	$3,442.92	359.73% at $45.00
Minimum return	$1,242.92	129.87% at $44.00, $46.00
Breakeven		at none
Range probability		14.73%
Profit probability		100.00%

ANALYSIS FOR FULL IMPLIED RANGE $29.99-$61.83		
Average return (probable)	($309.64)	-29.94%
Highest potential	$3,442.92	359.73% at $45.00
Minimum return	($957.08)	-100.00% at $29.99-$43.00, $47.00-$61.83
Breakeven		at $43.44, $46.56
Range probability		99.73%
Profit probability		22.93%

Next, there are two forecast analyses. The **Analysis for Forecast** uses your provided forecast and gives you the full details as to what the average, highest, and minimum returns are to be expected if your forecast is correct. The **average** used here is **linear**, which means that all prices in the forecast are weighted as equally possible outcomes for the underlying.

The **Analysis for Full Implied Range** uses the implied volatility and a pricing spread of three standard deviations above and below the current trading price of the underlying to determine what the market expects the underlying to close at on expiration. While this pricing spread is extremely probable (nearly 100%), it's still at the mercy of market unknowns, so the results are absolutely not guaranteed. Note that the **average** used in this analysis is **probable**, meaning that each price in the range is weighted by its relative probability. As a result, prices near the current market price are considered more likely than those near the edges of the graph.
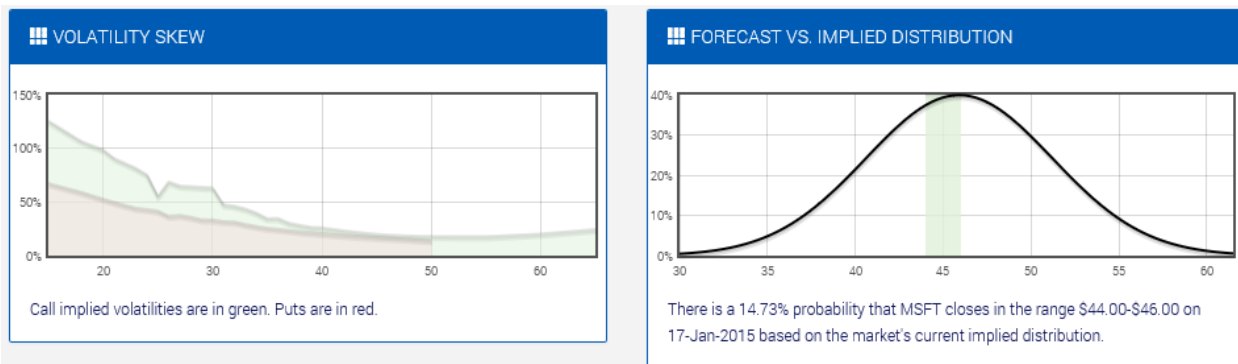
The **Volatility Skew** panel graphs the implied volatility of each option for the full range of strikes at this expiration. Many investors like to see this skew (or "smile") because it gives some insight as to the market sentiment for the underlying.

The **Forecast vs. Implied Distribution** panel shows you where your forecast fits into the overall market sentiment for the underlying. In this screenshot, you can see that the $44-46 forecast is just to the bearish side of neutral. You can also see that it's relatively narrow for the full implied distribution, which could help you decide if you want to broaden the forecast to increase its likelihood of being correct.

Sharing and syndication

In addition to trade search and analysis tools, the OSE also makes it very easy to share your trade ideas and forecasts with others. In the **Forecasts** panel, look for the **Share** button.

When you click **Share**, the OSE offers a variety of ways you can publish your ideas.

::: SHARE ON SOCIAL NETWORKS

[f Share] [Tweet] [Pin it] [in Share] [✉]

::: URL TO THIS PAGE

https://quantcha.com/OSE/MSFT/17-1-2015/44-46/LongPutButterfly,P43,P45,P47

::: EMBED WIDGET ON YOUR WEB SITE

<iframe src='https://quantcha.com/OSE/Embed/_/MSFT/17-1-2015/44-46/LongPutButterfly,P43,P45,P47' width='300' height='400' frameborder='0'></iframe>

You can adjust the *width* and *height* parameters of the IFRAME tag. Your mileage may vary.

::: EMBED IMAGE ON YOUR WEB SITE

<img src='https://quantcha.com/Image/Share/MSFT/17-1-2015/44-46/LongPutButterfly,P43,P45,P47?width=600'>

You can adjust the *width* parameter up or down to a maximum of 1200 pixels. The image maintains a 600x315 proportion.

The most straightforward of these options is probably the **Share on Social Networks** panel. If you click one of those options, it'll begin the workflow for posting this forecast or trade idea to your social network of choice. For example, let's say you click the **Facebook Share** button. This would open the **Share on Facebook** dialog and give you a way to publish to your timeline.

Share on Facebook

Share on your timeline ▼

Say something about this...

Long Put Butterfly analysis for MICROSOFT closing
$44.00-$46.00 on 17-Jan-2015

Quantcha is a suite of tools for searching, filtering, and analyzing stock market investments. And best of all, it's free to use. No registration, no ads, no hassle.

QUANTCHA.COM

👥 Friends ▼   Cancel   **Share Link**

If you share the link, it'll also include a rich preview for those who view it.

Ed Kaim
Just now · Timeline · 🔒 ▼

An idea for January.

MICROSOFT (MSFT)
Long Put Butterfly analysis for $44.00-$46.00 forecast on 17-Jan-2015

275.0%
average return

400.0%
highest return

150.0%
lowest return

500%
400%
300%
200%
100%
0%
-100%
-200%

$42.57 $45.02 $47.47

Click through for complete analysis.
This analysis does not include brokerage fees or commissions.
Data as of 9/8/2014 1:27:40 AM ET. Terms apply.

Quantcha

Long Put Butterfly analysis for MICROSOFT closing
$44.00-$46.00 on 17-Jan-2015

Quantcha is a suite of tools for searching, filtering, and analyzing stock market...

QUANTCHA.COM

Like · Comment · Share

Write a comment...   📷

If one of your friends clicks through, they'll get to the same view you shared from. However, it'll customize the budget and brokerage from their account (or the defaults if it's their first visit). Your information is not shared with them. Also note that when the preview image is generated, it doesn't apply a budget or brokerage.

In addition to sharing on social networks, you can also share a trade idea or forecast as an image that you plug into your site (or a 3rd party site, such as a forum).

If you copy and paste that markup into a site, it'll render an image that will open the OSE view when clicked. It's important to note that the image is dynamic, so it will update throughout the trading day as people view it.

In addition to the dynamic image, the OSE also offers a way to embed some of its widgets into a 3rd party site. These widgets are interactive and provide a great way to share content and ideas with your readers and followers.

EMBED WIDGET ON YOUR WEB SITE

```
<iframe src='https://quantcha.com/OSE/Embed/_/MSFT/17-1-2015/44-46/L
ongPutButterfly,P43,P45,P47' width='300' height='400' frameborder='0
'></iframe>
```

You can adjust the *width* and *height* parameters of the IFRAME tag. Your mileage may vary.

If you embed the widget above into your site, it'll render the trade analysis fundamentals in an IFRAME. In the screenshot below representing a fictitious investment advisory, the OSE widget has been embedded on the right side of the page to provide their clients with fresh data describing a trade they're recommending. Their visitors can even change their budget and other data to further customize the view. And if the visitor has already set a budget and brokerage in the OSE, those parameters are automatically applied, even in this 3rd party site.

In addition to the trade analysis widget, the OSE also offers a trade search widget that renders a list of the best trades available for a given forecast. In the screenshot below, the same fictitious advisory has published a forecast, and the top trades are shown on the right side. If the user clicks through one of the graphs or buttons, it opens a new window to that view in the OSE.

Registration

Another key feature of the OSE is the ability to watch trades. The **Watch** button is available in the **Forecast** panel, next to the **Share** button.

The watchlist is one of the few features that requires registration. Since the watchlist must be stored centrally in Quantcha's database, it's necessary to authenticate the user so we know who to share what data with.

User Account Required

!!! WHY DO I NEED TO REGISTER OR LOG IN?

It looks like you've come across a feature that requires registration. We've put a lot of effort in to provide as much functionality as possible with you having to log in, but there are some features that we can only deliver if you have an account.

The good news is that accounts are free, and you can even use your existing account at sites like Facebook or LinkedIn to log in here.

!!! WHAT DO I GET WITH AN ACCOUNT?

If you're logged in, you'll have the ability to access your forecast history across different devices, including your laptops, tablets, and phones. You'll also be able to add trades to your watchlist, which we'll send you regular email updates on (if you want).

Register A New Account »   Log In To My Existing Account »

No thanks, not right now

Fortunately, creating a Quantcha account is really easy and doesn't cost anything. You can either select a local user name and password, or you can easily use an existing 3rd party account, such as from Facebook or LinkedIn, to log in.

As part of the registration process, we'll ask you to provide an email address and whether you want to receive email updates on your watchlist. If you opt in to receiving email updates, we'll either send you the latest on your watchlist daily (before the market opens on weekdays) or weekly (before the market opens on Mondays).

Let's say you decide to use Twitter to create your account. Like any other app, Twitter will ask you if you want to authorize Quantcha to use your account to log in. While there are some default permissions included in the authorization request, we really just use the account to identify you as a unique user. You can also revoke our access at any time if you decide you don't want to log into Quantcha via Twitter.

Watching trades

Once the registration is all squared away, you'll be able to add trades to your watchlist. The watchlist is available in its own view, and you can also see the five trades expiring soonest from the dashboard of the OSE.
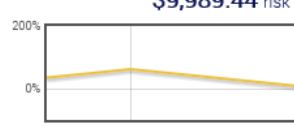
And if you've opted in to receiving email updates on your watchlist, a mail like this one below will show up before the market opens.

ⓘ If there are problems with how this message is displayed, click here to view it in a web browser.

Hello EdKaim,

Welcome to another trading day! We've been hard at work keeping track of your watchlist, and we're sending you the latest details on your watchlist so you can be ready for any new opportunities that may come up.
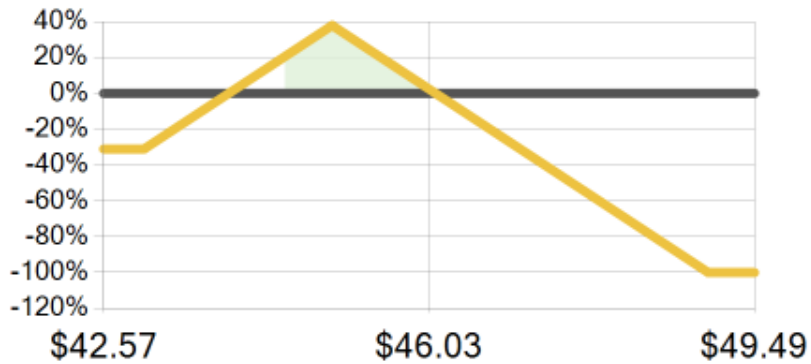
MICROSOFT (MSFT)
Call Broken Wing analysis for $44.50-$46.00 forecast on 20-Sep-2014

23.56%
average return

37.93%
highest return

3.45%
lowest return

Click through for complete analysis.
This analysis does not include brokerage fees or commissions.
Data as of 9/5/2014 2:19:55 PM ET. Terms apply.

MICROSOFT (MSFT)
Call Broken Wing analysis for $44.50-$46.00 forecast on 20-Sep-2014

33.85%
average return

55.44%
highest return

3.63%
lowest return

Click through for complete analysis.
This analysis does not include brokerage fees or commissions.
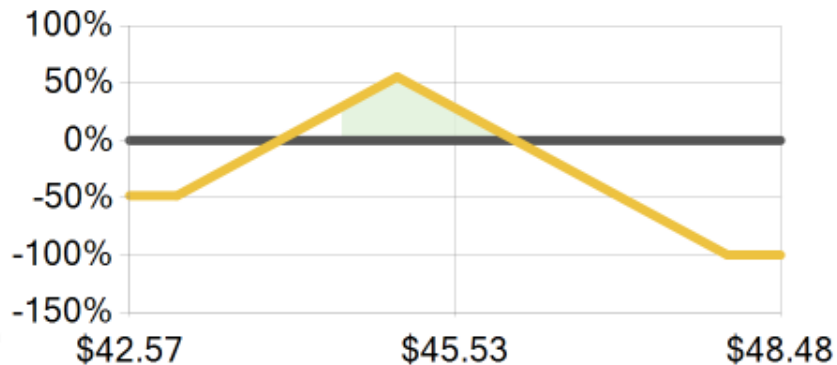Data as of 9/5/2014 2:19:55 PM ET. Terms apply.

MICROSOFT (MSFT)

Mobile and beyond

The OSE was designed as a responsive Web application, which means that it will do its best to deliver a great experience on any device, large or small. Here's an idea of how the OSE search results and trade analysis look on an iPhone.

And what's even better is that since the user experience is delivered as a Web site and not a native app, updates are seamless. As soon as changes are made to the Web site, they automatically show up on the device the next time the site is accessed. As new devices come onto the market, you'll be able to immediately make use of them without having to wait for the OSE to be published for that specific brand or version.

Partnership opportunities

Quantcha is always looking for opportunities to partner with businesses of all shapes and sizes.

Brokerages

We're currently looking to work with brokerages in order to integrate our OSE user experience with their trade order workflow. The OSE was designed to offer customers the ability to begin the trade order process within one click of our software and widgets, and we'd like to connect to your APIs to make it happen for your customers.

White labeling

Do you want to include Quantcha technology, such as OSE functionality, in your own apps or products? We'd like to explore ways to integrate our offerings with yours, so please follow up.

For more information

To get in touch, please email hello@quantcha.com.