

TRANSCRIPT

Developing an option strategy with the CBOE

Presenters: Henry Schwartz and Konstantin Vrandopulo

Konstantin Vrandopulo: Thank you so much, Trey, for the warm welcome. We appreciate it very much. We know that your time is valuable, ladies and gentlemen in the audience, and we certainly have prepared some information for you today to walk away with that you might be able to utilize going forward. So it certainly won't be a waste, I promise you that right at the front, here.

Konstantin Vrandopulo is my name, I am a Trading Strategy Desk Specialist here at Fidelity Investments. Trey already mentioned the primary focus of my group. We're a small group of dedicated brokers focusing on self-directed client education and I would want to welcome all of you in the audience, invite your friends as well, [Fidelity.com/coaching](https://www.fidelity.com/coaching). Those are smaller virtual classroom-type sessions in smaller groups. You get a little bit of a different feel from a regular large-scale webinar and of course you get to ask questions in realtime all throughout.

I am very excited today. We have Mr. Henry Schwartz with us today, the Senior Director and Head of Global Intelligence at the Chicago Board of Options Exchange. Henry, it's awesome to have you! I've been looking forward to this. Please tell us a little bit about your options trading journey and take it away.

Henry Schwartz: Thanks, Konstantin, and thank you for having me. And hello everybody! I'm really excited to be here because specifically, self-directed and retail and actually I'd call a lot of the activity pro-tail nowadays, has been an incredible growth story the last couple years. My background, I've been in the listed options business for 30 years. Started actually on the CBOE floor in the '80s as a runner and then moved on. Traded electronically in Europe, traded on the AMEX in New York, worked for several banks trading index options, trading single stock options, market making. I think I've done a little bit of everything.

The last kind of part of my career has been I started an options-focused market data company called Trade Alert, which became part of CBOE in 2020, right in the middle of COVID. And so now I've been with CBOE for a year and a half as the head of product intelligence. I think it's the best job in the world. I get to basically play with kind of everything CBOE has to offer. We're talking

about you know, the listed products and also the technology that CBOE provides.

So I've done trading, I've done, like I said, for the last 15 years or so, I've basically stared at options activity all day long to help participants make sense of what's going on and that's become -- you know, that's a crucial part of the business. I mean that's why you guys, you know, Konstantin, your group exists. Options obviously are spectacular tools but I kind of usually explain that you know, they're not just like a power tool, they're like a chainsaw. So they're very, very powerful and you've got to be careful you don't cut your leg off.

Oh and I have to make sure I say that anything I say does not reflect the views of CBOE Global Markets, they're my own. But I'm happy to be here and we're actually going to -- I've put some data together, some high level data and then we're going to zoom into some of -- kind of the nitty-gritty of things.

But to start out with, I do want to spend a couple minutes on just taking a look at this industry, okay? Options have been around for about 40 years and this slide basically shows the average daily options volume for the last two years, broken out by index options -- okay, primarily SPX and BIC. ETF options, I'm

sure all of you know what those are, and single stock options. And then the grey line is the VIX level basically, right? So it's been kind of (laughs) an amazing couple of years. It's obviously been a very challenging time for the planet, I guess. But I want to point out the growth in options volume. If we went back even further, 2020 was a growth of about 50 percent over 2019. So you know, what we see now, okay, if you look over on the right side of the graph, December. 2021 was a new all-time record over almost 9.8 billion contracts traded and an enormous -- the bulk of that growth was in the single stock options class, which is the tallest line, the blue line. Yeah, we're talking at 26.5, 27 million contracts today in single stock options. That was barely 8 million contracts a day just a couple years ago.

And what's amazing, you know, I spend a lot of time talking to people about like where did this all come from? Who -- where is this volume originating? And it is this kind of perfect storm of COVID and the work from home environment that a lot of people found themselves in. And you know, low commission or zero commission brokerage and this is all basically -- all almost a frictionless options market. And that creates a ton of volume and in some cases, it sometimes makes me a little nervous. But I will point out that I've been trading for a long, long time. From the institutional side and on my own as well. And it's never been a better time to be trading as a customer because

of the fact that the bid offer spread, they're effectively super tight in most names. And on top of that, it's a price improvement, which I actually have a slide on, that just -- you know, you used to hear a lot of stories like okay, I bought calls and the stock went up, and I didn't make any money because by the time I sold them, you know, I had to cross the bid offer to buy them and I had to cross the bid offer to sell them and I lost 20 cents in that process -- that's ancient history now.

So you still have to pay attention and be careful, but you know, immense growth. We were up 50 percent in single stock options volume last year, and we were up about 50 percent the year before. Then the ETF and the index business is stable. There's growth there, too, but single stocks are kind of the story of the year for sure. If we go onto the next slide, I made some charts showing the -- really it's just a pie chart of what is actually kind of dominating the activity, right? So when we had the average daily volume last year was almost 40 million contract. Most of that is going to be in products that you've heard of. And this chart on the left is just a month ago and the one on the right is two years ago. Really to show the difference. Sorry the -- on SPY, it used to be about 12 percent of the average daily volume. Now it's down to 10 percent. That's a big difference. SPY used to be kind of be -- what we've seen as broadening out of the liquid and the active products and that's coming because

the retail segment has come in and basically started trading a wider range of product.

So you know, to have the top 25 make up currently 46 percent of the volume, that's still concentrated but it's actually a lot better than it was a couple years ago and at the same time, you've got to keep in mind, volume has doubled since the pie chart on the right. So that extra two percent is on -- is two percent of about 20 million contracts a day. I'm in touch with a lot of market makers and liquidity providers and that's what I used to do. And there's always been this kind of like, well, we'll make markets when the activity -- when the flow is there. Okay, we'll make tight markets when there's actually activity out there. And then we would all -- you know, the customer side would always be, well, we're not going to send activity out there when the markets are so wide and see the chicken and egg problem. You know, effectively, the customers have kind of pushed through that and you're seeing tight markets with good liquidity in a much larger set of names.

Going onto the next slide, really quick, is nice and simple. It's kind of the beginning of this options order flow analysis which really is where I focus on. When I started in the business, there were... Actually, when I really started, there were four exchanges. We're now sixteen different options exchanges.

12 of those are purely electronic. And you have this fragmented market. You have a lot to pay attention to. This chart is one of the simplest. It's the market-wide put call, which is that blue line up top. And then the SPX just as kind of a benchmark for the market. And you know, put call's have been studied since options were first created.

But I do want to point out in the last two years, we've actually seen the market is up -- has had an incredibly strong run, right? You know, like especially off the bottom of the panic in the spring of 2020 with COVID. There's a lot of names that are up 200, 300, 400 percent, including big names people are in like Apple and Tesla. At the same time, we've seen that put call go down to historic lows, meaning that the focus has been on the call side.

And that's kind of one of the real basic starting blocks, I guess, for options flow analysis is you try to make sense of this, what is that? You know, what does that tell you? You know, it basically tells you that if you dig into the data, we're seeing extraordinary growth in call activity. Put volume is relatively stable until you get into kind of some of these sharp pullbacks and then people will kind of flee into the put. But there's something to pay attention to, I guess, and you know, it's kind of the beginning of the thing.

We're going to the next slide. This is kind of the anatomy of a trade. And this is really what I live for, is you know, we now have about five million individual trades a day taking place in the market, okay? It used to be about 1.-- when I started, the data side of this, 10, 12 years ago, there were about a million and a half to 2 million trades a day. Now we're steadily at five or six million trades a day. Every single trade is happening for a reason. You guys all know that options are sophisticated products, meaning that people that don't know what they're doing don't really last very long and they don't trade very long. So when I see a trade, you know, every trade has information in it. And what we're doing here is really just diagraming what's what. Some of this, you should be very familiar with. All of it should make sense to somebody who's trading options actively or learning to trade options. You know, the beginning of this is the trade details, right? 1,550 of these Activision, sub 22 6, 7, off puts trading for 410. That's time and sales, you'll see that anywhere and everywhere. But now, putting it into context, like what does that mean, okay? And that's kind of where it starts to get good.

Now actually, I use Fidelity and I dug around in the platform. I think all of these fields are available, some in different places. This is taken from the system that I designed which is called Trade Alert. But the information is information. So in this case, we're taking a trade that happened a couple

weeks ago and what is it telling us, okay? You know, the first and simplest piece is this is -- was this option bought or sold? Okay, this looks like a pretty big trade. And the simplest way to make the best possible determination of that is did they trade on the offer or did they trade on the bid? Usually, if you're going to trade an option, you have to pay the offer or you have to sell down on the bid. You can kind of take it a couple steps further and say, well, let's think about the midpoint. If it's above the midpoint, I'm going to usually assume it was a buyer. If it's below the midpoint, I'm going to usually assume it was a seller. So in this case, the midpoint was 407, traded at 410, so it's closer to the ask. So we're going to say, well, okay, it's an ask side trade. It looks like a buyer to me. You can do more, though. And that is the two other fields that are left and right of it. The theo value which is the CBOE theo which is effectively the way that market makers value options all day long is by -- with very expensive systems, constantly fitting volatility curves, you've all seen the volatility smile.

Konstantin, feel free to interrupt me if I'm droning on too long. But that was my job for about a decade was mucking around with these volatility curves and some of them are auto-fitting and then you might make a little tweak and steepen it up if you think the market's getting nervous, but in general, these volatility curves give you reliable pricing. That's how the liquidity side thinks of

everything. CBOE theo's use these market maker style fitted vol and so you end up with a reference price -- a theoretical price. So you can say, well, this option was worth 408 according to our system. And they're pretty good. Not perfect, but pretty good.

One other piece that actually is also very, very helpful is what was the implied volatility doing on this trade? Did it go up or did it go down? So in this case, the implied vol of the trade was 42.2 percent. Okay, you could figure that out yourself if you go and put the option details into a calculator and you have all the inputs correct. But what is also very important is the vol is up about a point when this trade took place at a volatility almost a point higher than the prior volatility. So it's a volatility increase. And you know, we're going to take a look at an option scan in Fidelity.com that looks specifically for these volatility increases. Because implied vol -- I guess that's the only thing that kind of the liquidity community is focused on. And there's a ton of information in there in terms of the expectations of how volatile product's going to be and what the supply and demand is. The rest of the fields, you know, this trade was 636,000 dollars in premiums, a pretty decent sized trade. You have the bid offer, you have a condition code, which in this case, is an auction trade. Which is -- as you know, like I said, we're up to 16 exchanges, 12 of those are purely electronic. And they've come up with a lot of innovative new order types. And

an auction is one where an order is allowed to go into a process that the liquidity providers kind of compete at and give their best prices and then it executes.

So putting trades into an auction, it tells you a couple things. Tells you this was a single leg directional trade, basically. And it was executed in the form of an auction.

And then there's open interest. So that's an important data point. We spent a lot of time trying to figure out which options activity is brand new and opening and which might be closing. So in this case, because there were already 6,000 contracts existing from prior activity, there's a chance that this buyer might be buying them back to close, okay? And so that also is an important piece because in some cases, if you see an option trade and it's very clearly a new buyer, right? There is no open interest or the trade is three times as big as the open interest, that's a piece of information. You're able to say, okay, listen.

Somebody just put 600,000 dollars into a brand new position. In this case, we don't know that for sure, so it kind of changes -- it informs your opinion about the dynamics. And then we have the delta and the gamma, you know, which is the way that you measure kind of the impact. So this is a 48 delta option.

This is not a far out of the money option. And so again, you know, you see a lot of options activity and you're trying to make an informed judgement, like okay, what's this trader kind of looking for? Somebody buying calls that are 25

percent out of the money might be looking for the stock to move to that strike, right? That's where they're going to make their money. In this case, it's an at the money option. So maybe there's another motivation. It might be a volatility trade, because that's where you get your biggest option Vega. You have the impact tells you how many shares it's the equivalent to. So in this case, this person buying these put -- it has an impact of about 75,000 shares to sell. If you kind of translated it and you know, in the olden days, the market maker would effectively -- if you were the market maker on the floor and some broker bought these 1,500 puts from you, you would tell your stock guy to sell 75,000 shares. That's how they would hedge the trade. It's not done that simply anymore, it's much more algorithmic and in some cases, the liquidity providers have other ways of hedging it, but it's still a trade that in one way kind of is equivalent to selling 75,000 shares of stock or 5 million dollars' worth of stock. And then you know where the stock price is. I look at every single trade -- I mean, we built the system to look at every single trade this way. You can take it even further in some ways. You know, a lot of activity is spread trading, right? Vertical spreads and butterflies and condors and everything else. Same model works. You can basically say, well this leg goes with this leg, so now I can see they've bought this vertical spread. But this is a nice, simple example of a decent size trade put into context and again, it's kind of

the building block of everything because we do this -- like I said, five, six million trades a day.

Next slide, we're almost done with these and then we'll get to play with some real data. Price improvement. I want to talk about this because it's really important. And I will say honestly that as a Fidelity customer, it works in your favor. Doesn't work in everybody's favor, but as a Fidelity customer, it does work in your favor. So there's this concept of bid offer, right? Like I said, in the olden days, an option might be you know, two bid at 220 and if you wanted to buy it, you go pay 220. And then if you change your mind and you want to sell it, you sell it for two dollars. And that's a pretty rough bid offer, right? That's 20 percent of the -- or it's 10 percent of the value of this thing, you know, and there's not a lot of things that you want to trade very often if they have a 10 percent bid offer spread. Price improvement is this process where retail brokers route the orders to liquidity providers and wholesalers who effectively compete with each other and step in to improve the pricing a lot of the time. So the graph here, the green and the blue line are the average spread that's shown and the average spread that was actually paid in terms of the activity for an option. And so the important part to see here, to understand here, is that the average spread paid is less. And if you've traded, you'll realize this in your execution. When you say, okay, yeah, these options are 220, you know, I want

to buy a three lot and you get your fill back and it's 212. Or it's 214. That's price improvement. That's liquidity providers saying I'm willing to step up and do a better price for this order because this is kind of their business model. It's very consistent and it's a little bit controversial, too, in that there's a whole discussion about like, well, why weren't they just showing 212 as an offer to begin with? But the kind of response to that is like, listen, they may be there at 212 for a small trade but not for a big trade, and if they stick their neck out there and a different kind of order comes and lists them, they may not want that trade. But they do aggressively want it, especially if it's coming from a retail broker.

The picture, this Peloton trade that I stuck on here is an example and it is a perfect example of price improvement. You can see the yellow part; the bid offer was 51 cent bid at 57 cent. And the execution in an auction facility was at 55 cents. So, the buyer was prepared to pay 57, it went into an auction for them to do that, and the liquidity provider said no, I will sell it at a better price. I think actually this chart is all Peloton options because it differs a little bit from stock to stock. But this works in your favor as a retail customer, as a Fidelity customer, too. Specifically, because of this is what goes on. It's important to understand because -- and at these conferences that I go to, we have very lively arguments about whether or not the advertised quote two to 220 is a

good thing if everybody's getting filled at 212 or 208 if they're selling it. But it works great if you're a retail trader. It's one of the reasons that it's true that it's kind of never been a better time.

We can go onto the next slide and we're going to talk about engineering a trade. You know, there's 5,500 listed products with options on them, now. That's up over 1,000 in the last year. So there's been this incredible growth in the market. It's not just in volume but also in available product. And also available expirations, (laughs) available strike. So there is an enormous amount of selection out there, which is a good thing. Can be a little bit daunting, too. You know, when I'm trying to find a trade to do, it obviously depends specifically on your goals, but I'm always kind of starting out with the same set of factors, which is what do I -- what am I really focused on right now? Am I looking at some single stocks? And I talking about an index trade? You know, is this going to be traded in an ETF option? And the liquidity matters, okay? So like I said, the price improvement helps a lot. But when you do have half the volume in the first -- more than half the volume in the top 25 names out of 5,500, you do need to be careful if you get into something that's at the bottom of the list. It's going to be hard to trade. It's going to be hard to trade out of if you get in. And that you know, can be a rough experience. I mean, I've had trades on where I know I got into something and I know it's my job, I

know something is worth a dollar and I want to sell it back out, and I know the right price is 95 cents, and I can't get anybody to pay more than 80 cents for it because it's just a name that nobody is paying attention to. And it can be really frustrating because you're trying to figure out how to really extract the price and sometimes, you're stuck.

So, you know, if you're looking for a trade that has a macro view or a sector view or a single stock view, I mean, I always kind of tell people, you know, you've got to pick something that you know and that you're comfortable with. So, it totally depends. If you stare at 10 stocks day after day and month after month, you may have a real strong opinion and feeling for how they behave. Other people have a whole different focus. So macro or micro or sector. And then it's like okay, let's figure out, are we looking for a bullish trade? Are we looking for a neutral trade? And you engineer a trade that's going to perform, you know, best in the view that you have, constrained to everything that you should constrain a trade to, right? What is the risk, first of all? What is the capital that's required? These things matter. And the comfort level. If it's going to wake you up at night, it's a bad idea.

And then you use the right tools. I mean, like I said, there's 16 exchanges, there's five million trades, there's 5,500 listings. You need a system that's

going to help you dig through all that. You know, our whole business was trying to -- and still is -- trying to help people get the signal and ignore the noise. And the noise might be 4.9 of those five million trades, right? But if there's certain trades, or certain conditions, certain kind of patterns of overflow that you're looking for that matter to you in a certain area of focus, you need to be able to see that. And using Active Trader Pro, using Fidelity.com, using some of the other good tools that are out there is the key.

And it goes along with this whole "there's never been a better time to be a retail trader." You know, the tools that are available to you for free or for having an account are better than things that we spent a decade kind of cobbling together different trading shops. And that's kind of an amazing thing, to be able to get real -- you know, to get reasonable, high quality volatilities without having to go dig up, when's the next dividend? What's a risk-free interest rate? You get it for free! Which is amazing. So I think Konstantin, we're going to actually run a scan and kind of see what's going on. See what we can find.

Konstantin Vrandopulo: Absolutely, Henry, so many great points. Very important points. You know, the fact that the tools are available. You know that now if you are attending this webinar, now is the time where we dig in and kind of

figure out how we use them. So it's the matter of using the tools appropriately and making sure that you're able to transcribe all of the information provided. Henry made a ton of very important points with specifics to information that shows up on those trade alerts. I will walk you through Active Trader Pro and show you exactly where all that information shows up and how you can analyze it.

So, let's dig in, Henry. So, a few things that we're going to do here today, is of course focus on market activity. And primarily through the prism of you know, a filter system of some sort. So this is Active Trader Pro, obviously. At the top here, you'll click on the options and we'll go down to option filters. We'll start there, Henry, I just wanted to showcase to everybody that there are plenty of pre-built filters that are available already from the drop-down. Some of them might be of interest to you, certain conversations that are being had on financial business networks all the time of unusual option volume in certain names, you know, what does that really mean? Order flow applied volatilities expanding or contracting. So, there are different types of reasons why you would be putting on a trade, based on maybe the views that you already have. And some of these pre-built scans are going to help you do that. So, I would encourage everyone to look through them on your own time.

But what we're going to do today here with Henry is we're going to be focusing on a custom scan and show you the functionality of what's available within. So if you already know, you know, the certain things that Henry alluded to throughout the presentation that might be of interest, we can kind of emphasize our review on those specific points. So we're going to go into the custom world, here. And what I wanted to showcase is that the pre-built scans are there but you can create your own and obviously edit them throughout as you access new information.

So, I'm going to jump into the custom and we started with this, what we called unusual options volume with a bullish bias, and you would notice that there's a button underneath that says "manage scans." And that's where we're going to spend the majority of the time in adding on things today.

I wanted to start here to show you what the foundation of the scan is going to be. First thing's first, we're interested in obviously the underlying symbol being displayed. We're interested in the last price and I would encourage everyone to recognize that all of these columns on the filter itself are screenable. So if you click on them, they would bring -- or sort the values in accordance to that particular column. So if you're interested in, you know, stocks trading at higher values per share versus lower values per share and so

forth, you can do it very simply. We're going to look at the closing price as of the prior day. We're going to look at the average volume being 300,000 shares or more per day. Again, the more the merrier. The more volume there is in the underlying security, chances are, the more liquid the options market is going to be for that underlying. And we're just displaying, you know, how about the percent change from close? So in other words, where is that security relative to where -- right now, relative to where it closed through the prior day?

So, Henry, without further ado, let's jump in into the market scanner and show how we can edit the criteria. So if you went down to this field I showed a little bit earlier, right? We're going to click down the drop-down and then select "manage scans." And that is going to bring us into this Fidelity.com looking window without Active Trader Pro so you don't have to jump between the browser and the tool itself, right? So we're going to do all the work in here. Henry, we decided to add a couple of things.

First thing's first, let's go ahead and click on "edit." We're going to add average call volume as an additional field. And that average call volume, again, not a solicitation or recommendation of any sort, but we're looking for average call volume to be 2,000 contracts or more. We're looking for average

put volume. So action on maybe both sides of the equation to be similar to what we see in calls. Furthermore, we're going to add in a field for percent average call volumes. So in other words, you know, how much of that action is actually happening today? So something that is going to tell us what's happening in excess to what we expect on average. Now that 2,000 contract limit is not going to be the case or you know, the limit for everybody. You could say maybe the minimal amount that I'm looking for is 5,000. But what we're looking for with Henry, here, is 100 percent in excess of what normally happens. Okay? The factor of implied volatility, such an important factor, Henry, that there are buyers and sellers and obviously each option trade has two sides to the story, right? Someone is buying and someone's selling and usually whoever is initiating that transaction probably is making some sort of a judgement call on their view. Either bullish or bearish or neutral directionally. And then the liquidity provider on the other side is swallowing up or taking the other side of that trade.

So, what we're looking for here is that if that action on the call side is actually happening in an environment where it is driving the implied volatility to expand, right? So how can we do that? Well, we're going to click on "volatility" and we're going to say implied volatility 30 days, so those options that are expiring 30 days from now as a hypothetical option, those 30 day

implied volatility to be higher than zero today. So in other words, it is actually a transaction that is incorporating and expanding volatility environment. So the greater, the better, right? Or the more it's effective, the implied volatility value, obviously the more impactful it's going to be.

And then we're going to look at percentage of calls that actually traded above the ask price. So dropping back through the volatility spectrum and then looking at order flow. And we're going to say percentage of calls on the ask price or above, obviously, right? So again, how many of those calls that traded either on the offer or through the offer. So who was actually in a hurry and willing to pay whatever the market was asking for. And we're going to say that those are going to be 50 percent, right, or more. And let's go ahead and save this scan. And then of course, a few names pop up on the Fidelity.com window. We're going to minimize that window and go up to our scanner in here and just refresh the list.

And here we go! We have some underlines that came back with return values. We know where they're currently trading in terms of their underlying price. We know, you know, are they up or down? And it looks like everything we're scanning for, Henry, with our bullish call flow, certainly is maybe proving the fact that the stocks are up today, right? And there is that continuation of the

thought process of whoever was trading these contracts. And of course, you've got some pretty sizable activity in here. So Henry, what catches your eye? I mean, we've got one Exchange 200 product and a few stocks in here. Anything that you want to dive in a little bit deeper into?

Henry Schwartz: I mean I think that it's funny, you know, that this -- I'm working on a separate deck, trying to talk about kind of meme stock activity. And you know, Bed Bath & Beyond seems to be a favorite of that kind of trading user base. Those can be interesting to keep an eye on. I think they can be a little bit toxic, they're obviously volatile. I look at this -- I mean, Ford is one that I've been watching for years and I have a small position in, and I would dig into that. Because there's a good story behind it, you know, I like to pick things that people are comfortable with. People know what cars Ford makes and kind of some of the dynamics in that. So I would dig into Ford and try to you know, take a closer look at what's going on and how the pricing lines up. And see what kind of view makes sense to putting on a trade.

Konstantin Vrandopulo: Absolutely, Henry. Let me walk clients through a couple of things. So as you know, all of the tools that you're running in Active Trader Pro are going to be showing up in your tools in use if you're already running them. We started with our filters tool and so a couple of things that we're going to be

focusing our attention to, maybe, from the short-term perspective is going to be based on, you know, the further in-depth analysis of additional tools that we'll need to use. And so what I wanted to mention is that if you have the additional tools that you're running, for example, a chart, right? Where's the stock right now relative to where it has been? Or an options chain that obviously will show us what the board for Ford actually looks like and how much in volume traded at a particular contract in open interest and all the Greeks. I am connecting all of these additional tools by clicking in the top-left corner and linking them to my grey tools.

So, what I can do here, Henry, is go back to my filters and just double-click on Ford and minimize that tool. And what that would do, of course, is bring up a chart for Ford down below. Where is it right now relative to where it has been in the past six months? Well, it looks like it's trading at a new high. What it will also bring up, of course, is some of the key information that might be of interest. Is there a next dividend coming up? Is there an earnings binary event coming up that we might be incorporating, right, into our time frame if we're trading an option contract, for example, that expires post the February 4th expiration cycle.

So, from here, we'll get to select, you know, what we're going to be focusing on. And Henry, the way we're going to dissect Ford today, and all the action in it, is by using this tool that's called the options statistics tool to start with. So I'm going to jump in here and bring up Ford, and we see that the total volume is around three and a half to one, calls to puts. Over one million contracts traded and you know, we still have around three hours to go until the day's over, which is way in excess already of the average volume that it normally trades. Now you would be asking, well what is all of this additional information down below? Attend our coaching sessions, right, and we'll break them down line by line for you. But today, we're going to look at today's biggest trades maybe, Henry, and look at what's actually happening and where all the -- or the majority of the action is. So this is going to be similar, right, Henry, to what you had brought up in an alert-style fashion, those largest quantity-based trades with the price that someone has paid or received if there were a buyer or a seller, and the type of a condition that the order was sent to the exchange for execution with.

So, there's you know, 15,000 contracts looks like in January, June, in Feb. You know, the way I like to look at it, Henry, is just to kind of time stamp them, right? To see which ones were sort of executed together or one after another. Anything that catches your attention specifically, Henry, from the list here?

Henry Schwartz: Well yes, for sure. And about a third of the single stock option flow trades in complex order. And it tends to be the institutional activity is more heavily complex orders. So this is important. So, when you see, you know, Ford showed up because the call volume was unusually heavy and volatility was higher and that met our scan. That 15,000 lot trade in the Jan and June call, you can see that they go together exactly the way that you sorted it. So that tells you something a little different than if there's just a frenzy of call buying, you know, if the 27 strike or something and it's all outright, this is a trade -- and you know, you guys do it the same way that I'm used to doing it, which is offer side trade if it's an apparent buyer are going to be green. And bid side trades are going to be red. Or if they're in the middle, I think they're black. So in this case, you're going to look at that trade and say, okay, it looks to me like they bought the Jan 22s to sell the June 25s, okay? A diagonal call spread. The pricing was similar, right? So they paid three and a quarter and they sold 305, so somebody's paying to buy the Jan to sell the June, so that's actually -- if you dig into the open interest, I'm pretty sure that neither one is by default opening. So meaning that -- when I see a trade like that, I'm like, well why would somebody do that? Okay, the stock is up pretty sharply, right? And it's up, I think, doubled in the last six months or so. So why would

somebody be doing this diagonal spread? And when you see a trade where somebody trades a spread and the pricing is similar, it's usually similar for a reason, which is that they're trying to adjust the trade without laying out any more capital. In this case, I would just based on kind of the stock's up sharply, and now you see somebody buying these 22 calls and selling some longer-dated, further out of the money calls, is usually going to be somebody buying back a short position that's hurting them and righting the June call, okay? So in terms of directional sentiment, that one by itself, it kind of tells me somebody probably got burned on a call, right? Now they may own the stock, so it might be an overwrite. And at that size, I would guess it probably is. But it tells you that this new position that they're opening in June is a repeat of the strategy. You know, I would read that as a bullish trade in that they're probably holding onto their shares and just continuing to sell call.

Looking at some of the trades that aren't multi-leg is how I kind of try to really pay as much attention as possible to sentiment. So like that one at 10:20 for 10,000 lot of the Feb 26s, right? That one right there. So that's a buyer of 10,000 calls for a buck thirteen. It was outright, it was in an auction, meaning it kind of is what it looks like. That now, we just saw on the option grid that you know, they have earnings before that February expiration. So this is a position that may not be specifically to capture earnings, right? Because they could

have traded the weeklies a little bit closer to earnings if they wanted. But that's a bullish trade. And in general, you know, what this all looks like is primarily call buyers on a stock that's up, you know, already four and a half percent on the day. So the real question, I mean, to turn that into a trade, you go back to the beginning steps, right? Are you bullish on 40? Bearish on 40? Are you neutral? Which way would you be leaning? And then when I try to engineer an option trade, ideally you figure out a way to make money if you're right, and not lose money if you're -- if kind of nothing happens. So you know, that's kind of my starting point. That fits my comfort zone. I don't know if you look at things the same way.

Konstantin Vrandopulo: Henry, so the important piece here, right, is absolutely evaluating that trade. So just because we see this sort of, you know, a sizable trade go off, 10,000 contracts, only offer. How can we evaluate it from the perspective of our directional risk? And what might happen if the stock goes up versus it goes down? Or implied volatility does X. And so what I'm going to showcase next is let's say that we wanted to evaluate that trade, right? The 26, as you can see, in February, February 18, they traded 41,000 contracts with 43,000 open interest today. So plenty of activity, not in excess of open interest, but we could probably assume, Henry, that some of that activity is going to be opening, right? (laughs) We don't assume that everyone on the

open interest side is basically closing out what they've had already. So some of this is going to be opening at the very least. That's the assumption. And we can go over into our options analytics and build this trade out in the profit and loss calculator. Now, you know, do you have to do it in a 10,000 lot? Well maybe if you want to focus on what that trader's journey is going to be throughout the trade's life, that's certainly fine. But maybe we'll focus on something smaller and do a 10 lot instead, right? And say, well, what if we did that trade right now? You know, in a simulated fashion. It's 132 bid, 134 offer. Let's say that we paid the midpoint price. And that brings us into the profit and loss calculator that shows us the profit and loss diagram, of course, the hockey stick that the majority of you have probably seen before and familiar with. The bottom X axis is going to be the price of the underlying security, and then the Y axis is going to be your potential gains and losses depending on what happens to the stock going forward. And of course, in the top-left corner, you have your parameters that you could change, those being primarily price. Where is the price going to be, based on my bullish outlook? Where does it need to be, maybe, for me to break even? By what dates? And what happens to implied volatility?

So, the theoretical price, and Henry, this was something that, you know, you showed on your alert system a little bit earlier, is that what is this option worth

in theory, right? If the bid offer spread is actually wider than what is generally accepted, let's say, for an underlying security. Let's say it wasn't two cents, but it was five or 10 cents. Do we have something that will show you the approximate theoretical value based on the volatility that's being built in into a model? And the answer is yes, right? The tool provides it. It should be worth a theoretical value at that moment in time for evaluation. And Henry, all of the Greeks are you know, sort of multiplied out for the position size that you have. So you know, 474 Deltas with these 10 calls is essentially telling you that we're trading a slightly out of the money option. It has a 47 Delta and it just multiplies it out based on the 10 contract size that we're simulating here. If you did one contract, obviously it would be 47 Deltas, and all the rest of the Greeks are multiplied out in the same way. Henry, what I wanted to ask you about is this idea that let's say that we're seeing some bullish flow and the implied volatility of that particular option right now is around 51 percent. We know that Deltas -- well obviously, an option is either going to go out in the money or out of the money on the day of expiration. It's going to either have intrinsic value or not. And you having experience as a market maker, you know, I'm curious.

So, if someone goes into a transaction and let's say that you're seeing order flow only offer, willing to pay the offer, and you're having to take the other

side. For those in the audience who are not trading options, but still should probably be paying attention, why is that important? Well, we know that if the stock continues to go higher, the liquidity provider or the market maker will probably have to do something in the open market in order to hedge off their risks that they took on. So if somebody bought these calls and then the market maker shorted these calls, right? If the stock continues to go higher, the market maker's Delta is going to continue to grow to be a bigger short value, and therefore, they might have to do something in the open market in order to offset that risk, right? So Henry, you know, market makers probably do have some significant activity in the actual underlyings of themselves, don't they?

Henry Schwartz: Well, yes, absolutely. And as I mentioned, they don't necessarily do an initial hedge as simple as, okay, this is the equivalent to 4,000 shares, so the other side would sell those calls and buy 4,000 shares. In a lot of cases, that's not really happening because their books are so big and there's other correlated instruments.

But you are exactly right in pointing out this concept of kind of the Gamma dynamic, is what some point call it. When you have a large position and it's very kind of concentrated -- it's funny, I used to kind of pooh-pooh it and say

look, I don't believe it. However, over the last couple years, seeing how many people are trading, how many new people are kind of active in the market and what they're paying attention to, I think you sometimes have some kind of game theory going on, especially in names that are not super-duper liquid. And one thing that we've seen over the last couple years is options liquidity has increased and you know activity's grown much more than the underlying stock activity has. So the liquidity is there in the options, and in some cases, it's probably there -- it's probably out-sizing the underlying stock. So you know, Ford is a very liquid name. It trades millions and millions of shares a day. So it would take a big chunk of stock to kind of have the dynamics to move it. However, if you look at something thin or a name that's very popular in kind of the meme world, where they may trade a lot but the liquidity might not be that great -- and that's where volatility matters, right? An implied volatility of 50, you know, you can use -- divide it by 16, tells us it's going to move two or three percent a day on average. That's the market expectation. It's a pretty good expectation. It's not perfect. I do pay attention to what you're talking about, pockets of open interest. And in fact, you can kind of try to go back in history and say -- let's say, we don't look at Ford for the next two weeks and it goes back down to 24 dollars and then all of a sudden, you're heading into earnings and it's back up at you know, 25-something. And you're like, oh, remember there was a really big buyer in those 26 strike calls and the

open interest is still out there and you can look at the trade history and go wow, nothing's really happened since. Basically, configuration hasn't changed.

And you are correct, if the stock happens to gap up to 27 on earnings, that's a problem for the short side of the trade. That's kind of a unhedgeable gap risk and then in a way, they panic and have no real choice but to buy the stock.

And even if they don't panic and buy the stock, you have a lot of people -- the expectations are that they will, and that can create dynamics of its own. And I think it's one of the most interesting things we've seen over the last year is the understanding of positioning and people taking a quantitative view. And there's some situations where you can look at it and go, wow, that position is 12 percent of the average daily stock volume. If you had to go by 12 percent of a stock, it's going to move. And so we pay attention to that. And you know, coming into a big expiration, that obviously gets most extreme, the closer that the option is to expiration, that's when Gamma goes to kind of infinity, theoretically.

So that's worth understanding. Not being on the wrong side of it. In a lot of cases, half of what I do and what I've learned is how to avoid being on the wrong side of a trade. So you know, knowing earnings are coming up,

knowing that it's a big position of the 26 strike is going to make me think pretty hard about getting short the 26 strike. But it may actually lead into a trade where I might actually say, okay, cool, if that happens -- and I don't know if it's going to happen or not, how would it really play out? Is it going to go to 30? Or is it just going to kind of get goosed up to 27 and is that an opportunity for a strike you might want to short?

And I will -- I know we're almost out of time, which is a bummer, we should've booked two hours. But one thing that, you know, I'm a huge fan of options spread, vertical spread, even ratio spread. And using kind of the supply and demand when it works in your favor, especially, you know, in some of these hi- - people paying a lot for out of the money calls, which gives us this kind of funny upside false skew in a lot of stock, and that's kind of a new thing. That can create an opportunity where a call spread, for example, is just like cheaper than it was in the past. Because in the past, you almost always had kind of a -- if you bought a call spread, you paid a little bit more in volatility terms for the at the money than you did for the out of the money. In a lot of cases now, we saw a big spread earlier today and they bought some seven half calls, I forget the stock, but they sold the 22 halves in the same stock -- in Oatly. And they got the same volatility, implied vol for each leg. (laughs) Remember, the seven to the 22 halves. That to me, was absolutely somebody taking

advantage of this pricing, which has made a trade like that really attractive in terms of -- kind of compared to historically where things with price.

Konstantin Vrandopulo: Henry, I think the vertical volatility skew is evident in some of these names, right? So we're seeing it here in Ford, for example, maybe not as dramatic, but certainly as we go further out in strikes to the upside, we start seeing implied volatilities starting to increase. So certainly some vertical call skew there.

Henry, I know that we're out of time, you know, for today. We are doing a follow-up session with a colleague of mine on the strategy team tomorrow at 10:30, so I'm sure that we probably have summoned a lot of questions that need to be answered. We looked at the tool, we looked at certain parameters, and most importantly, Trey, we looked at the profit and loss calculator that will allow you to sort of build this trade out, hypothesize your scenarios of where you think the stock is going, by when. And to figure out whether it's potentially going to be a profitable trade. And if it is, in fact, something that you might be interested in putting on, don't forget about the risk side of the trade, right? Now it is limited to the amount that you paid for the call, but you still don't want directional trades to be going to zero. So having a risk

management technique in case you were wrong on direction in the short order is something that we certainly encourage.

Henry, thank you so much for all of the wisdom and experience that you brought to today's presentation. We'll have to do it again sometime.

Henry Schwartz: Absolutely! It was great. Thank you.

END OF AUDIO FILE

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