

TRANSCRIPT

Mastering the charting features in Active Trader Pro®

Trey Jarrell: Thanks everyone for joining us here today. My name is Trey Jarrell, of course, with Konstantin Vrandopulo. We are both from Fidelity's Trading Strategy Desk Team and excited to spend the next hour here with you today. This is certainly a topic that we are very passionate about here on the Strategy Desk when it comes to charting.

Before we get into it, just a quick introduction to our team if it happens to be your first time hearing about us, or hearing some of our presentations. Our group here at Fidelity works with clients really on your trading strategy and trading plan here, and we do this by doing quite a bit of education out there. Those classroom sessions that you can find in our Learning Center -- we have about six or seven different sessions on a variety of topics. So technical analysis is an area you'll notice many of our sessions on. We also have sessions on some of the advanced tools, like here we're discussing on Active Trader Pro, and we also work heavily with clients with option strategies as well. So, as you go through today's session, we're going to talk about a lot of different indicators and concepts, but if you'd like to dive into any of these subjects even further, check out some of those sessions here in our learning center. We also offer some classes for very beginner level, so if any of these

topics feel like they might be over your head and you'd like to start from the beginning, we've got great classes on Active Trader Pro, as well as technical analysis here for you, both subjects we'll be discussing here today.

So, today's presentation, what we're going to be focusing on here is mastering the charting features in Active Trader Pro, right? Active Trader Pro, if you're not familiar with this, this is our trading platform here at Fidelity, allows us quite a bit of help when it comes to our trading, right? We're going to be looking at advanced charts here today. Some of the benefits of Active Trader Pro including streaming data, but aside from charting, we can use Active Trader Pro for many other advanced tools, customization, even things such as viewing our positions, viewing our watch lists, where we can begin to build in different features that work for us. As we go through today's session, we are doing a deep dive on the charts themselves. We're going to go through and discuss some of the different indicators that are available, how this can fit into your trading style, how you can actually modify these indicators. We're going to dive into the concept of trend and how we can begin to use drawing tools to identify important points for us, and we're going to be doing all this centered around the idea of thinking about entry and exit points along the way here as we go through.

I do want to make sure everyone's on the same page; if you happen to be just hearing about Active Trader Pro, you haven't had a chance to download it, wanted to start out by sharing my screen and showing everyone how to get access to Active Trader Pro. If you don't have it, you want to download it today, and certainly you can follow along with us here at home. Where you can find Active Trader Pro on Fidelity.com is if you go into the Accounts & Trade menu, and the fourth menu down, you're going to find a link for Active Trader Pro. So, Accounts & Trade, and Active Trader Pro, it's going to bring you right to this main page, and you'll have the link to get Active Trader Pro right from here, big blue button right at the center of the page. Once you click this, this will ask you if you have a PC or an Apple; this is available on both platforms. You can download the platform from there, this little download right onto your computer's desktop. Once you click the icon on your desktop, it'll have you log in, and it's the same login information you use for Fidelity.com, so if you haven't done so, now's a great time to get it downloaded.

But why don't we go ahead and jump into it here? I've actually already got Active Trader Pro pulled up here, and we're going to be spending the majority of our time here on a chart. If you are new to Active Trader Pro, right, the way we're going to access our charts is just by going to the Charts menu, here at

the top of the page, select Charts. You'll select New Chart, and this will bring you up to a blank page, and as we go through the presentation today, we'll take you through all of the different settings and features here that you can add.

So, allow me to go ahead and introduce Konstantin here, Konstantin Vrandopulo from our Strategy Desk as well, and he'll get us going on the chart.

Konstantin Vrandopulo: Hey Trey. Thank you so much. It's a pleasure to be here.

Thank you everybody for spending the next hour with us. We certainly have a few things in store for you; we hope that you don't walk away, or promise you rather, that you won't walk away disappointed. Trey mentioned the fact that this subject is very near and dear to us, and it certainly is. Both Trey, myself, and all of our colleagues on the strategy team kind think of ourselves as technicians, as chartists. We use these tools every single day, so let's get right into it.

So, Trey has a really nice chart of SPX pulled up. That's the S&P 500 Index. We're going to talk about setting up the chart and the primary settings that are available within. So, as you would notice at the top of your chart, you have several tabs going across. We're going to talk about every single one, but

we'll start with the last one, intuitively of course, clicking on Settings. This allows you to set up the chart type, and our preference of the chart type here on the Strategy Team is going to be candlestick format which allows you to see that information of the open, high, low, and close in a very visually, to us, appealing way, probably one of the more popular ways of looking at charts these days. The default obviously could be customized to any one of these chart types, right from the dropdown.

The second thing that I was going to mention on the chart is the fact that you have the ability to add certain additional things. So, what's important to us? Well of course, if we're chartists, and we're studying technical analysis, we're analyzing price in the substantiated volume behind that price action. So, representing volume or turning that on at the bottom and show-and-hide is going to be important to us. So, we'll go ahead and click on that. You could obviously, if you are trading individual stocks or exchange-traded products that actually do trade in extended hours, meaning pre-market and post-market, you could also add the show extended hours feature, which I'll talk to you about, in terms of your timeframes.

Now there's also, under show and hide this option to show tabs, and Trey, if you don't mind turning that on for now as well just to kind of discuss what it allows for going forward. Remember that colors is fully customizable, not just, you know, to those of us who want to think about, well was it an up day from the open or was it a down day from the open representing green or red, we can change those colors to whatever our preference is. In fact, Trey, I would say historically, you know, if you started charting by looking at *The Wall Street Journal*, or doing it by pencil and paper, you're probably used to looking at them in just the black format, you know, meaning filled or unfilled. But, you know, adding a little bit more color sometimes helps us differentiate those up days versus down days, and also give you the ability to mess with the settings on the gridline opacity which differentiates the different days and hours, as well as the watermark opacity representing just the symbol and its vividness in the background there. Let's go ahead and apply these settings, and what we're going to notice is, at the top of the chart, since we have added the tabs, you would notice that you are actually able to click on the plus tab, just like you would in your modern, you know, daily browser feature, whether you're a user of Chrome or Microsoft Edge or Mozilla, whatever the case, and what this allows for is effectively looking at different charts within the same chart tool. So, you have different chart tabs with different settings for each if you would

prefer, you know, and of course, you can eliminate them if that's not something that you're interested in.

Now Trey, I mentioned earlier that of course the Extended Hours features that you've actually checkmarked and added, the important thing about the Extended Hours feature is going to be the frequency which appears at the very bottom of your chart tool. So, we can look at the timeframes which is today, meaning the intraday chart, two-day, five-day, ten day, so forth and so on, as well as the frequency in which you would like to display your data. So, to display extended hours activity, you would have to be on a frequency that is less than the daily; in other words, if you click on the frequency and change that to 60 minutes, 30 minutes, and so forth, the system is smart enough to recognize that that is actually intraday type of frequency, and it would actually display the data that you would like for extended hours, pre- and post-market. So, remember, all of our indicators that we're going to be discussing a little bit later down the road are going to be dependent on your timeframe and on your frequency for period selection.

So, Trey is going to tell us a little bit more about the draw tools which in my opinion are very powerful in Active Trader Pro.

Trey Jarrell: Yeah, absolutely, Konstantin. I think, you know, I was looking into technical indicators here in a moment. You know, many people don't look at charts. You often, you know, start with the indicators, right? They're a little more exciting, so to say. But there's a lot of power from the drawing aspect here as well, and really, it's helping us identify important price points in the chart, right? Our indicators are also going to help us out with signals, but we want to pay attention to other important price areas.

And we're going to spend some time focusing on this first menu here in Active Trader Pro which is the Draw Menu and want to talk about a couple of tools in here, starting with the idea of support and resistance. Now, under our draw menu, there's two particular lines that we're going to go to. I'll start with a resistance point here, and you'll notice this is illustrated by horizontal line with an arrow pointing down, and what this is telling us is that we are drawing a line above the current price of the security that we're looking at. The way that we actually plot a resistance line, right, is we can select any point on a chart, click our mouse once, and it's going to plot that line, right? Once we have the line plot on our chart, we can drag this up or down to fit it anywhere that we like.

So why did I draw the line right here in terms of resistance, and what's the significance of this level? So, you'll notice I plotted this here right near the

June highs on the S&P, right? So, what we're looking at here is a reversal point, so we're plotting support and resistance levels, and we're looking at prior levels of reversal, right? So, this is important; this tells us an area where, you know, a stock maybe was trending to, and had some trouble. Or in this case, an area where sellers actually began to take over and push the stock index here in this case back down. These levels can be significant over time, right? As you noticed, a fairly good example right now, what happened yesterday with the S&P, it tried to approach this resistance level again, had a quick touch, and we've had a short reversal off of that. Now does this mean every time we approach a resistance level, we're going to bounce off? Not at all, right? Eventually, right, these resistance points can break, and we can actually use this for signal generation, right? So, price breaking above a resistance point, right, could be seen as a bullish signal here for us, right? We can certainly use other indicators, which we'll talk to you to help us out with confirmation at those points, but this is going to help us understand one of those key concepts, right? We found an area where sellers have begun to take over, right? If they give up on another round, and buyers are able to push through, could be an important thing for us to be paying attention to. It's also important to understand that these levels can be very important for us in the future as well, so if price crosses above this, this particular level may eventually become a support point here, and in fact, if we look back, here back in January

and February of this year, you'll notice that this level that we drew near this high, right, has had some significant in the past, right, some reversals here from the support point also.

So let's talk about the concept of support here as well, and I'm going to go back to the Draw menu for a moment, and this is the point on the chart in our Draw menu just to right of resistance, and this is going to be illustrated by a horizontal line with the arrow pointing up, and this is letting us know we're actually drawing this below the current price here. So, I'm going to select this, and we're going to click a recent point with a couple of reversals here. You'll notice back in June, right, had a couple of points with the S&P held and reversed off, held this level again towards the end of June, and reversed here as well, right? So this is telling us again an important level here from a price standpoint where sellers had pushed down to this level, but buyers were able to overcome this level of support, right, and managed to push the index back upwards towards, to the next level, right? So should price come down and approach these levels, absolutely a level we'll be paying attention to. Can the index, in this case, hold this level or not? And this can also be used in signal generation. Right, if it reverses, certainly positive for us from the bull camp. Or if it breaks this level of support, right, could be seen as a bearish signal for

us here, and something that could be considered, right, when we're thinking about our entry and exit points I hear along the way.

Now with these levels, right, you can adjust these, as I mentioned, by clicking the line and dragging these to other points. You can also modify both of these lines as well, right? If you hover your mouse over and click on our support or resistance line, we could modify these levels and actually specify a price that we'd like to use. So, the level that I hovered over was 3238.38, now maybe we're looking for more of an even number here, or maybe we wanted to identify a specific high or low price, right? We can always type that value in here. We can also update our color, if we choose to go with another scheme, update our line style here. Maybe we'd like to look at a dotted line, or if we need a better visual on it, right, we can always add that line thickness. From here, we can apply those changes, and it will redraw that for us. We can also remove that line, right, maybe we misdrew it, no longer significant here for us. We can always come in and clear that off as well. So very important concept here, and if you're a little lost on the idea of support resistance as we go through today's presentation, we're going to have a couple of tools here along the way that will help you find some of these levels I hear also.

So one other draw tool I want to show here under our Draw menu is going to be the trendline, and you're actually going to find this just to the left of support and resistance, looks kind of like a barbell, right, diagonal line with two circles on each end. And this is going to be a tool that actually helps us identify support and resistance also, but in a trending environment, right? So, a lot of technical analysis is focused on this idea of trend, right? Markets tend to trend; stocks tend to trend as a technician. We're trying to capture those trends I hear. So, what are some ways that we can identify a trend, and identify when a trend may be ending? Well this is where trendlines can help us out. Now the way that we actually draw a trendline, right, is we're going to select a point on the chart, we're going to click and hold our mouse, drag this down and let go at another point, and we're going to also be thinking about looking for those idea of reversal points I hear. So, I'm going to draw one here from a recent downturn I hear that we had in February/March, as everyone probably recalls, on the S&P, right? And you see as I click my trendline, drag it down, you'll notice that along the way, right, price coming up to this trendline, right? So clearly in a downtrend through here, right, throughout the way, doesn't always go straight down. We have some buy days that come up, and all those levels are ultimately approaching this upward trendline. Now eventually, right, price manages to break above this point, and in this case, actually was a signal for a reversal of trend, right, that our downtrend had

ended, and now we've entered into a new upward trend. Right, now these trendlines can be applied to any different timeframe, so we've looked at a relatively short term here. This could also work on intraday type charts, as Konstantin was mentioning, one minute, two minute type of ideas, but can also be applied to very long-term timeframes here as well, right, if you like to look at multi-year charts.

I'll draw one other quick example of a trendline, right, if we are looking at say an upward trend, right, we can also connect these different points here, but with an upward trend, we're going to be connecting from the bottom, giving us an idea of support. I'm going to look at a very tight timeframe here from May to those June highs. Going through this level here, and we'll kind of bring our line up right along the other way, starting at this point, we had a breakup maybe above a recent resistance, and as you see as price goes up, managed to hold this line day in and day out throughout, eventually broke down, right, giving us an indication that perhaps our short-term trend here in this case has reversed or at least paused, right? So very powerful concept here for us to help us identify some of these important points along the way. You may notice when I'm drawing these trendlines here as well that at the very top or bottom at the end of our trendline, there's a percentage that pops up, right? This is actually giving us the percentage change here in price over that period

of time, so this is also a great, just measuring tool, right, if you'd like to quickly see, what was my percentage increase or decrease on a given trend, or between given trades, right, you can use this tool very quickly as a measuring tool here as well, right? Last thing here on trendlines, we can go ahead and modify these as well, just clicking on the trendline, we can change color, line style thickness. We do have the ability to extend these to the left and right here as well, which is very powerful, right? This idea of support/resistance, these levels could be important again in the future. If we want to track this out to the future, we certainly can by extending that out to the right. We could also snap this to a price here as well, which helps align it to recent closing prices here, or other recent ticks. We can remove this from this area here as well or apply our changes. I'm going to go ahead and remove these trend lines here, and we'll clean things up a little bit for the next tool here, which is one Konstantin will talk to us about here, that will help us identify maybe some other support and resistance points I hear along the way.

Konstantin Vrandopulo: Yeah, so Trey, great commentary there on the importance of trend in technical analysis, kind of identification of those higher highs and higher lows connecting lower highs in a downtrend and higher lows in an uptrend. So, let's talk about support/resistance in a slightly different fashion, the application an ancient way of thinking about potential retracement. So,

we're going to use the Fibonacci retracement tool, popularized of course for the original Fibonacci sequence back in 1200 AD by Leonardo Fibonacci, the Italian mathematician. And it's pretty peculiar, Trey, that this concept has found its way into financial markets. I guess we just took that idea, understood that it appears in nature, that plenty of structures around the world, especially some old bridge structures actually follow that similar sequence, and we just westernized it and said hey, why don't we apply it to charts and see if there's any merit to it. The interesting part is that I don't know which one is which, but it might have become a self-fulfilling prophecy effectively because a lot of people are paying attention to these things. So Trey, when we were identifying a downtrend, we're going to be using that Fibonacci retracement tool identifying the most recent peak, and we're going to use, you know, the S&P 500, maybe the February 19th high, and then we're going to drag it down and drop it onto the March 23rd low, and that was the effective low in the marketplace. So the important thing about the Fibonacci sequences is identification of two points of importance: a peak and a trough, and if you were thinking that there is a potential for, you know, the price action to reverse or correct, or countertrend move, you would want to be looking for some horizontal levels of potential resistances on the way higher. So in this case, of course, we know that the S&P 500 has rallied very, very strongly off of the lows, but you could see with these Fibonacci sequences, the 23.6%, the

38.2%, the 61.8 especially being the golden ratio in the Fibonacci sequence have actually acted as relative areas of battlegrounds being buyers and sellers of this huge, you know, 20-plus trillion-dollar market cap. I would also say, Trey, that you know, the 50% is not a Fibonacci sequence per se, but it's the halfway point, you know, comes to us from the original Dow theory, but you could also add some values to the Fibonacci sequence. So, what you could do is actually highlight the downtrend line in Fibonacci and add a value to it. So for those of you who are using Fibonacci sequences for projections, potential extensions and so forth, like Trey is just adding right now, a more commonly used Fibonacci sequence, you know, kind of variance is a square root of the golden ratio of 61.8% which is 78.6%. You can just click on add value, and that would add that line onto the chart for us as well, and you can see that the most recent price action, especially over the past week or so has been basically acting right up against that level. Again, you could add extensions, you know, 123-6, 138-2, one to the top side of it and so forth, and see areas above, right, of where price has not gone yet.

Now, Trey, I just wanted to say as well that it's important to, you know, think about support and resistance levels as potential areas, so we're not thinking about it in terms of just price, while SBX is currently trading at 3,170. What does that really mean? If we're looking at price as where potential buyers and

sellers are setting up to take action, right? We're observing prior historical battlegrounds and are saying, well, those potentially could be areas of interest for us. Now you know, our price is supposed to be just ping-ponging between two levels. No, absolutely not, right? Prices tend to trend. So, what we could do as technicians normally is react to the interaction of price with those areas, and they're not absolute by any means.

Let's go ahead and apply a trend for maybe indicators as well, and what you would notice here is that Trey is doing the same sort of analysis but identifying two points in an uptrend, a most recent low, as well as the most recent high, and you would be looking for those retracement horizontal levels on the downside. On this uptrend, you see the 23-6 has been coming in in play pretty well right around that 3,000 level that we've identified as well.

Trey Jarrell: Yeah great points here, Konstantin. Just, it's a great way to add some of this layer to your support/resistance, right? Many of these points, you may be comfortable identifying on your own, but it's nice to have a tool and a method we see a lot of those points that Konstantin showed us on the reversal that can add to our analysis here as well.

I'm going to go ahead, as we go along, we're moving some of these features as we add them, just to help keep the chart clean for everyone. Very likely if you're following at home, you certainly can incorporate this all into your analysis and keep all these up there. We just want to make sure everything is easy to view, the concept that we're talking about. But we're going to go ahead and move into the indicators here next, right? And indicators are going to help us out, also with this idea of signal generation, right? We can create an entry and exit plan here with technical indicators. Now with indicators, one thing you'll notice is there are quite a few of them out there to say the least, right? You'll find our indicators in Active Trader Pro here, and you'll notice this is a left-to-right scrolling menu here, and I believe we have about 70 or 80 that are in here right now. So, seems like an area that can get very overwhelming, but you know, the easiest way to think about it is indicators are categorized by type, right? So, some of the common types that we're going to be looking at are trend indicators, momentum indicator, volatility indicators, or volume indicators. Now, if we're creating a process with technical analysis, right, we're generally only going to have maybe one of these types on our chart, right? So, we're not trying to use all 80 of these indicators, right? We're not trying to add ten different momentum indicators, right? We're choosing one that fits into our trading style, right, that generates signals based on timeframes that work for us. So, we're going to go through a couple of the common indicators here

today, but if you're looking at an indicator and you say, you know, this is generating way too many signals, or not generating enough signals, you know, it doesn't mean we should eliminate that indicator type. Just means we have to find one that fits a little bit more specifically into your trading plan. And I'd like to point out one quick resource here for everyone before we begin adding indicators, and Active Trader Pro under our help menu, under learning center, we have a selection on here for a technical indicator guide. Now this technical indicator guide is a great resource here that lists all of the indicators that we do have available here, and gives a great writeup, right? So, I'll have some examples as to the signals that that indicator generates; it'll talk about the timeframes; it'll talk about the calculation. So, if you'd like to read further about any of the ones we discussed today, or if you'd like to find some other ones, this is going to be a best starting place for you. And this tool does allow you to sort by that indicator type, so you can start out by doing some research on the various indicator types there that work for you and going through a few of those explanations.

But I want to start out with a common indicator here. I know one that we get quite a few questions on, and it's a momentum indicator that's known as the relative strength index here, or RSI. And once I click this, it's going to plot on the bottom of our chart. So, this is a momentum indicator, right? Momentum

is designed around the idea of looking at the speed and change of price movement. So very important to understand, indicators, all these indicators are based on price history, right, or volume history, right? So that's all these indicators are looking at are various price points in the past. This particular indicator, created by Welles Wilder, and looks back at the last 14 periods. This is an oscillator, meaning that the values that are plotting in here actually are going to always be between 0 and 100.

So, the couple of lines that we see here, versus the blue line, this is our actual RSI, and you'll notice, much like price, you'll see this trending up and down as we go along. There's a green sort of resistance line here at the level of 70, which is known as our overbought level. And there's also a red line down here at the bottom, at the 30 level, which is known as our oversold level, right? So, when prices are said to be above 70, security's overbought, low 30, oversold. Now, we want to be very careful with this interpretation here, because often if you hear overbought, might sound a little scary; might sound like it's time to be getting out of a stock. But this is an indicator that is meant to be used in conjunction with trend, right? So, if we are in a very strong uptrend, it's certainly possible, right, that this security could remain overbought for lengthy periods of time, right? Same if we're in a downward trend, just crossing into oversold. Doesn't mean it can't continue to be oversold and extended beyond

that. So, we do have to pay attention to that. So generally, what we're looking for for confirming trend, we want to see RSI moving in the direction of trend, but also as prices are hitting higher highs, we want to be seeing higher highs in RSI, right? The same if we were on the short side of things, on a bearish trade, right, if we were playing a downward trend, and we're seeing lower lows in price, we want to see lower lows in RSI. RSI can also be used for signal generation as well, right? Some common signals that are generated is if price actually crosses below this overbought, right, consider it a bearish signal for us, right? So not that it's in overbought, that it's crossing back below this 70, right? Bullish signal would be if we crossed from oversold back above that 30, here out of that oversold territory, right? So, it can be used for signal generation as well. And one of the really powerful things about RSI here, and very recent example too is the idea of a diversion. So, confirmation is price hitting higher highs, RSI hitting higher highs, but what if we don't have that confirmation, right? What if prices hitting highs that RSI isn't confirming?

So, I'm going to scroll the chart back here just a little bit, and we're looking towards basically the end of 2019 to our February peak, right? As we went through this period, you see, I'll just highlight the area again on the chart that I'm taking a look at, right, we see S&P, right, clearly climbing in price. Higher highs, higher highs. What's happening with momentum, right? What's

happening with RSI as we through this period, right? You'll see it's doing the opposite, right? You hit a higher high here in December. With the next higher high in price, you had a lower high on RSI, and then we hit our all-time highs here again in February; another lower high on RSI, right? So, this is giving us an indication, kind of a red flag that perhaps a trend may be changing here, right? We need to be thinking about our exit strategy at this point, right, thinking about at what point are we determining our trend is changing. And in this case, right, very powerful signal, because what happened with the S&P, right, after this third higher high, a lower high in RSI was really right at the start of the selloff, right? So, having this tool at your disposal, where paying attention to these signals can be very powerful, and in this case, you know, worked out to be a very powerful signal. So, we can probably spend hours on RSI, but I want to save time for a few other ones here, Konstantin. I know you had a couple of trend indicators that you wanted to look at here for us today as well.

Konstantin Vrandopulo: Yes Trey, Fidelity does offer a plethora of trend indicators really, but we're going to focus on the most simple one, the one that probably is used the most. It certainly is used by all of us on the Trading Strategy Desk. We're going about simple moving averages and how to add them onto the chart. So, we would go up to the top in indicators. Obviously, you can scroll

down to the Ss and select the SMA, Simple Moving Average, or you can also just type in your indicator of interest into the type and search. So, a couple of ways of actually adding them. So, what we're going to be doing, Trey, is adding three of them onto the chart. And this is the most common question that we get, is all right, well the default one that I had, defaults to the 20-day moving average. What if I want a combination of 20, 50, and 200 maybe, short-term, intermediate, as well as long-term? So, you add three different SMAs onto your chart, and then they appear as overlays, as these little bubbles at the top of the chart. You can click on the bubble and change the timeframe at the very top. So, clicking on the dropdown modifying one to the 50-day period, one to the 200, and then leaving the third one at 20. That is going to give us three moving averages. Kind of goes along the idea of identification of trend; trend is the most important thing in price terms. Higher highs and lower lows in an uptrend, lower highs and lower lows in a downtrend. So, what we're observing here is elimination of some of the day-to-day noise that we're seeing in the market, but rather taking an average of a certain timeframe. And so, we know that sometimes trends don't necessarily have a linear slope, right? Trey drew a few trend lines for us that had relatively linear slopes. Sometimes prices move in a parabolic fashion. Well, what if the price is moving in a parabolic fashion? We want to make sure we're using some of a trend indicator that would actually follow that strength, right, in trend.

So, what is an SMA? Let's just, looking back in this case, we have a daily frequency. We're just adding, let's say 20 days versus, worth of closing prices on the S&P and dividing it by 20. And so, each day that a new data point comes in, the old one falls out and they move around. So it's going to be important, an important indicator for potential crosses, so understanding the short-term action only to pass month, right, 20 trading sessions over the past 50 days as well as over the past 200, and recognition of where price is currently relative to those lines, right, to those values as well. It's price interacting with them. If so, then is it respecting them as potential levels of support, or potential levels of resistance? It's priced currently above them, or below them. So, you're starting to apply similar concepts of trend identification, potential areas of reversals, similarly right, through this kind of moving average prospect to eliminate some of the day-to-day noise and broaden out the spectrum a little bit.

Trey, I would like to kind of build maybe on this concept of trend, and this simple moving average indicator. One of the most popular ones that, you know, currently is used for the volatility pillar in technical analysis is Bollinger Bands, and that is the one that is basing its standard deviations off of the 20-

day moving average. So why don't we leave that 20-day on and add the Bollinger Bands and talk about volatility?

Trey Jarrell: Yeah, absolutely, Konstantin. And certainly, one that we do get quite a few questions on here as well. Again, very useful indicator in terms of measuring volatility, right? Volatility can be a very important part of understanding the actual movements in the security here and can also then be used for confirmation of our trends, can be used for signal generations here as well. So, I'm going to go back to the indicators. We'll select Bollinger Band here, and once we do the Bollinger Band; you'll see again an overlay plotted on the other chart. Now, Konstantin added the 20-period moving average to help us with trend. Our Bollinger band, right, is actually using a 20-period simple moving average, but it's also plotting two standard deviations above and below, right, which are what the outer blue lines of our Bollinger Bands are representing here, right? Much like our SMAs, our Bollinger bands can be modified, right, by selecting this bubble at the top, choosing "modify." If you want to change the color, change the opacity, or, right, if you happen to be a longer-term or even shorter-term type of trader, right, you can adjust the period of moving average and standard deviation. So, for example, if you are someone that uses a 50-period moving average more frequently, you may up it to another common timeframe here, the two-and-a-half standard deviation,

right? So, you can make those adjustments here as well. But this again will be used for a couple of different reasons. First is actually looking at the width of the bands themselves, right? So, when bands begin to tighten, right, as price is beginning to restrict, right, it tells us that it's a period of low volatility, right? So, this is important because this is raising our likelihood that there may be a sharp price move here in our future, right, or at the beginning of a new trend, right? And probably the tightest point that we see here, if I kind of just scroll back here for a moment, you can probably see the very large difference here between what our market looked like in January and February, to what we looked like in March, right? So as bands begin to tighten, telling us that perhaps another signal that our trend may be beginning to end, a new trend is beginning to begin, right, which we saw here with the steep selloff, right? Now in periods of high volatility or high price movements, our bands are going to begin to widen. As those begin to widen, this is another sign that perhaps our existing trend may be getting close to an end, right, which we saw here as well. We see these real extreme ends in width. I hear started to contract, maybe didn't feel like it's the most of us from a volatility standpoint here, but you know, you did see this subsiding here in price, bands beginning to tighten, I hear and once again you see this large restriction here in prices back in May, after the sideways action, price constricting, and then eventually breaking out to the upside. So, one thing we pay attention to, the width in bands here. The

other thing too is we can actually generate signals from Bollinger Bands from breakouts above or below our upper and lower bands, right? And great example would be at the end of this tightening period, what happened with price, right, we actually began to break above this upper band, right? Price basically held our upper band up here until about June 8th, a couple of days action below, and trend ultimately pulled back here for us, right? So, thinking about these time frames too, right, this is looking back at 20 periods, so this is a shorter term, and we're measuring some of these shorter-term trends. Now one thing we have to be careful of with Bollinger Bands prices, you'll notice at times do tend to bounce back and forth between the bands, right? So, there is potential opportunity, for example, in a sideways trend, and the idea being if we reverse off the bottom band, maybe an entry, reverse off the top band, maybe an exit. But we want to be very careful with this here is because in these sideways trend submissions, volatility's tightened if you're trading these bands. Eventually the breakout, and the breakouts can be severe, and generate a signal that's going against yours. So, in using this, always important to have this exit strategy in place, right, and you'll think about how this relates in terms of the overall trend.

So, we'll pause there on the indicators. That was three common indicators, probably the ones that we get the most questions on as the way we want to

bring those up. And again, if you found maybe any of these aren't generating type signals or timeframe, head to that technical indicator guide here. That's going to be a great place to learn about some of the other indicators of these different types, multiple ones out there here for you. So, Konstantin, any final thoughts on indicators here before we jump on to the next section?

Konstantin Vrandopulo: Yeah Trey, what I would want to mention as well is that Active Trader Pro's customizability allows to actually look at indicators on top of indicators. So, one of the common ones, since we didn't mention volume much, if you could bring back up the volume tab at the bottom, why don't we go ahead and add a 20-day moving average to our volume? So, maybe the daily volume activity is not that much of interest to us; they might be higher today or, than the following day, or the prior day, rather. But what we'd be interested in is in the context of what's happening to price today, is it happening on higher volume than, let's say one month's worth of action in the past? So in the S&P 500 for example, we just added the 20-day, 20-period moving average onto the volume indicator, and you see very clearly, visually, when the action is appearing, right, on higher volume than it has been occurring over the past 20 trading sessions, maybe identification of the fact that that particular activity is being participated in with many more participants than usual, or at least that has been usual over the past 20 trading sessions.

Remember that each individual indicator is highly customizable, and you can add indicators on top of indicators, so really, giving you the ability of that customization here in Active Trader Pro.

Trey, what I would like to talk about as the last point here is that once you've sped up your chart the way you want it to look, once you've added all of these indicators that are of interest to you, what you want to do is make sure not to forget to save the chart. So, the top-right, to the right of the Settings tab, we have this little old-school floppy disk icon. So, you'll click on that, and at the bottom, you'll have the ability to click on "Save Chart." If you do that, the chart will ask you, what about it do you want to save? Do you want to save everything that you have done, and what do you want to name this chart? Do you want to make it your default? You save all the chart settings on all the indicators that you've added? Do you want to add events and timeframes and frequencies? If yes, right, you name this chart, you know, "My Preferred," "My Daily," or whatever the case might be, and you can pull up that same chart with all the settings already prefilled for another underlying on a different day from the dropdown in the charts menu at the top. So, it gives you really that, you know, that power to make sure that you're not recreating all of your work every single day. This is probably one of the only tools that you would have to

make sure that you save separately besides having your Active Trader Pro save your lay out at the end of, you know, of your trading day.

Now Trey, another thing that I would like to talk about is, for those of you who like exporting chart images or chart data, you can certainly do that as well, and that's that second icon at the very top to the right of the floppy disk. You're going to go ahead and click on that, and it gives you three options. You could either export it in the CSV format, the Excel file format, or actually as an image. The difference, of course, for those of you who are unaware of the CSV format, it's just a plain text format that has separate values and commas, and the XLS is a binary file format. So, if you're exporting the data, the dates, the highs, the lows and the closes into Excel for example, those are going to be great ways to do that, as well as given the ability to export the images, just so you could take a snapshot in time of your work and then come back to it at some point.

So, I think we're at that moment here, Trey, to talk about some of the help that maybe if we're new to technical analysis, where could we get some help? Do we have resources here at Fidelity that provide us the help that is necessary if we're beginning, so we have an idea-generating tool and maybe an algorithm that identifies some of the things for us, instead of us searching for them on our own?

Trey Jarrell: Yeah, absolutely. And two tools that are going to come to mind here, we'll touch on both of these here, and really what we're focusing on is this "Technical Analysis" tab in Active Trader Pro. But before we jump into that, I'll need to get quick example here, and I'm going to run back to just our stock research center page, and if you're not familiar with this page, you can find it in Active Trader Pro under News and Research Stocks, and Stock Research Center. But this is a section at the very bottom, we'll find a list of securities here under our bulls and bears of the day. Now this is actually powered by an analyst firm, Recognia. Recognia actually scans the market for different technical patterns, technical indicators that are actually taking place here today, right? So, it's a place for you to identify some potential opportunities here, right? Its patterns are built on this concept of support and resistance, and trend, identifying important price points, but can help us identify price targets, and exit points here as well. So Recognia has a couple ideas out here every day. Here, there's a couple of filters in here. They're not only looking at the pattern, but looking for a certain amount of volume here, and filtering out some of the penny stocks, things like that as well. If you like this idea as we're going through this, keep in mind these can also be scanned in our stock screener where you can actually add additional criteria, so if you want a list of maybe every type of pattern it's generating, or you'd like to focus on specifics,

or incorporate your own criteria, you can absolutely do that here as well. So, we're going to grab one of these patterns. Let's take the one in the middle here, just to pick a random one, LVS is a security, and the pattern right now is a diamond bottom. If we hover our mouse over it to the right-hand side, we're going to get a small picture of a chart of the diamond bottom. But this is around charting in Active Trader Pro, we want to show you how you can find this pattern here in Active Trader Pro. We'll use this example of this security that's popped up here today. So, we're going to go back to the chart. We're going to put the symbol in here at the top left, and we're going to go over to this Technical Analysis menu here as well. Once we go to Technical Analysis, we're going to have three selections: Patterns and Events, Support & Resistance, and Stops. I'm going to select the Patterns and Events. So, we get a pretty detailed menu on here. First section on here allows us to choose our trading horizon, right? So, we can choose up to three different time frames: short-, intermediate-, or long-term. I'm going to select all three for the sake of our example here today. Below that, we can choose between active events or anticipated events. Keep in mind with pattern recognition, right, we're often trading a breakout, so we're waiting for a signal to be generated, so if you're looking at anticipated events, be careful about jumping in too soon. Right, you want to wait until you get that final confirmation. And we also have four different types that we can scan for our classic patterns, candlestick patterns,

oscillators or indicators. We're going to use this classic patterns example here, and we're going to go ahead and click "Apply." You know, as I just "Select All," all of these patterns will now be scanned here by Recognia. At the bottom of our screen, a new window is going to open up along the bottom, and this is going to show us various patterns that have been scanned for and generated over the six-month period that we're looking at now. We're going to be looking at this most recent time frame here; you'll notice a number four, and if we hover our mouse over it, this actually lets us know not only the one that popped up on the scan on the main page here, there were actually four different patterns that were generated here today, right? We're going to go ahead, and we'll select the diamond bottom here. You'll have a little bit more information, target price range, price period. We can View Details here. The View Details is great because this will give us a little bit of a writeup. If you're unfamiliar with this particular pattern, you can learn more about it. But what's really great on here is we can actually add this to a chart here for a moment. The lead outs, maybe our Bollinger Bands and moving averages here for just a moment so everyone can see this nice and clear, and what we're looking at with this pattern, you'll notice these first two lines are indicating the trend coming in to a pattern, right, downward trend. The bottom is forming here in this diamond shape, and this signal is generating, but it actually breaks up above this resistance point, right? So, getting a full signal here from this

particular tool. Keep in mind pattern recognition, right, when we're looking at what Recognia has out there. Right, this isn't looking at analyst opinions or fundamental detail, right? Simply running a scan on a potential pattern that's taking place and giving you a signal. As always, you may want to incorporate your own analysis here that you're using before you justify placing the trade but gives you an excellent starting place with some ideas that are happening here in real time.

Konstantin Vrandopulo: If we're talking about, you know, a diamond pattern, right, there's a lead-up into it and the potential breakout, what's going to be important for us to recognize as well is that we're always thinking about entries into new positions, whether they're long or short, from the risk-first, profit-second perspective. Yeah, surely, we've identified maybe a potential breakout that is going to lead to additional price appreciation potentially, but what we need to focus our attention on is the risk management piece to make sure that if this pattern is invalidated by price action, we have an exit strategy in mind.

So, Trey, what I wanted to do is click on "Technical Analysis" and focus specifically on the stops that allows the algorithmic review, effectively, of what Recognia sees as potential areas of importance for risk management on the downside. Now Trey, if you would click on that line that was drawn in for me

and go ahead and modify it. You would also notice that you can actually modify kind of the risk management parameters. So, if I am entering a long position, of course, we're thinking about our stops being below the current price. If I'm entering into a short position, I would think about my stops being above the current price. And you can change the distance from current price, and that's going to depend on the type of trader that you are. So, you're going to be doing tight, medium, or loose. Let's go ahead and put on tight here and go ahead and apply, Trey, and in my view, if we're thinking about LVS in particular, notice how that stop actually correlates the most recent below in terms of touches, and maybe correlates to a relative important level of support for this underlying to actually hold, if there was to be any downside moves in the short-term. If we break down below, obviously, that whole diamond pattern is going to be invalidated, and we're going to be at the risk of additional price depreciation in the short-term. So, thinking about, right, a potential idea, using some of the Recognia tools, but also using some of the Recognia tools to identify your risk mitigation techniques on the downside if you don't have a process for that yourself already.

Trey, it would be a great place, as well, to talk about maybe real-time analytics, you know, very quickly to just kind of implement the ideas, idea generation

piece in real time, about all of those indicators and techniques that we've discussed so far today.

Trey Jarrell: Yeah, absolutely, Konstantin. So, just a brief mention on this tool here, and I'm going to minimize a few windows to clean this up. You may have noticed as we're going through this bold I at the bottom right, sort of lighting up in blue. I'm going to go ahead and select that, and it's going to bring up our Real-time Analytics Tool. So, what this tool actually allows us to do is scan the markets, or scan our existing positions and watch this for technical signals that are currently being generated, right? The way this tool is going to work at the top-left, first we can make a selection, if we would like to look at, say example, our current positions or watch lists, or if we'd just like to scan an index, like the S&P, S&P 100 or Nasdaq 100. Below this menu, there's another one. Right now, we have two or more selected. We can come in here, and these are all of the different signals that are generated, right? So, we can look for things such as new highs, market divergences, and as you see, I've preselected some of the indicators that we've talked about today, such as RSI, Bollinger Band breaks, and SMA crossovers. So, if you found yourself gravitating towards using any of these indicators, well, you may be looking for some new ideas for trades. This is going to allow you to do just that. Right, once you click "Apply," it's going to scan the market for any of those signals

that are being generated; we've got quite a few here today. As the name implies, real-time analytics, these are popping up here in real-time, so as we're watching this tool, ideas will generate. You can actually click on any of these ideas to get a quick description about that particular indicator. You can even build it quickly into a chart, right? If we select "Chart," and we'll pull up this particular signal here, which was a security KSU, that is showing an upper Bollinger Band breakout. Right, and we'll see that taking place here, upper Bollinger Band having a breakout here today. Again, we really aren't trading just off of one indicator, so this gives you a great place to start. Look at this with your other indicators as well, that can help you come up with some ideas here in real-time.

END OF AUDIO FILE

Any screenshots, charts, or company trading symbols mentioned, are provided for illustrative purposes only and should not be considered an offer to sell, a solicitation of an offer to buy, or a recommendation for the security.

System availability and response times may be subject to market conditions.

Investing involves risk, including risk of loss.

Real-time analytics uses historical information to generate alerts about potential opportunities. It should be used in conjunction with your own research and should not be the

sole basis on which to make investment decisions. Past performance is no guarantee of future results.

Technical analysis focuses on market action – specifically, volume and price. Technical analysis is only one approach to analyzing stocks. When considering what stocks to buy or sell, you should use the approach that you're most comfortable with. As with all your investments, you must make your own determination whether an investment in any particular security or securities is right for you based on your investment objectives, risk tolerance, and financial situation. Past performance is no guarantee of future results.

Recognia and Fidelity Investments are independent entities and are not legally affiliated.

939537.1.0