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The Citadel Conversation

A Conversation With Citadel Securities' Jamil Nazarali, Senior Managing Director and Head of Execution Services, and Larry Tabb, Founder & CEO of TABB Group

The past two decades have witnessed dramatic advances in technology, benefiting financial markets and investors across the globe. In this edition of The Citadel Conversation, we hear from two of the nation's foremost experts on market technology: Larry Tabb, CEO of TABB Group, a capital markets research and consulting firm, and Citadel Securities' Jamil Nazarali, Head of Execution Services. They offer their perspectives on future market structure and explain how technology creates a faster, cheaper and more accessible marketplace for investors at all levels.

Citadel is pleased to share *The Citadel Conversation*, a series of conversations with some of the world's leading economists, policy experts and market analysts. We believe that powerful ideas drive markets around the globe. By sharing insights and ideas from provocative thinkers we hope *The Citadel Conversation* will provide readers with renewed curiosity and informed perspectives.

The views expressed in *The Citadel Conversation* reflect those of the individuals being interviewed. These perspectives are neither endorsed by Citadel nor reflect our view on investments.

Q: How have advances in technology over the past decade or so impacted retail and institutional investors?

Nazarali: Advances in technology have benefited all investors enormously. First, spreads have narrowed. Right after decimalization, spreads were at 3 cents. Now they're below 2 cents. That may not sound like much, but it leaves a lot more money in investors' pockets and less for intermediaries. Second, commissions have come down. If you're a retail investor, you probably remember the days of paying your broker a couple hundred dollars to trade; now you can trade for as little as a few dollars. Institutional investors used to have to call up brokers and pay 5-6 cents a share. Now many trades are done electronically for sub-pennies a share. Retail investors are also getting far better prices. Seven years ago, retail investors paid about 130% of the National Best Bid and Offer (NBBO); today, it's under 100%, which means the average investor gets a better price than the best offer made on the exchange.

Tabb: Jamil has touched on key aspects of this issue. Buy-side traders are more in control of their order flow so they can have a better understanding of where their order goes and how it's executed. Transaction costs are down, which creates a more efficient marketplace. On the retail and institutional side, spreads are down, execution quality is much better and execution times are quicker. I remember when I first got into the industry in 1980, I used to get the worst trade of the day and I wouldn't find out until the next day when I received the execution order. Now, as a retail investor, I consistently get better-than-quoted spreads and much cheaper execution.

Q: Your anecdote from 1980 raises an interesting point. We seem to have reached a new stage in the evolution of markets where the downsides of technology are amplified in the media and in Washington, while the benefits are taken for granted. What do you make of calls for a return to the "good old days" before electronic trading?

Tabb: When we did our first institutional equity trading study in 2003-2004, the biggest problem the buy-side had was with market structure, especially on the listed side. They felt that orders were completely opaque. With no transparency on execution, head traders felt they were always getting ripped off. Today, investors are much more in control. Everything now gets executed in 100, 200, 300 share blocks. Spreads are narrower and brokers can't trade out of these positions any easier than the buy-side traders. The analytics, trading strategies and infrastructure now in place create greater efficiency, but this makes market structure more complex. Overall, even though execution costs have fallen, because of all of these tiny executions propelled by electronic trading, you need to understand where you are in the marketplace in that it's difficult to put your finger on who's the best person to route to, what's the best algorithm to use, how do I best manage my execution?

Nazarali: Larry is right. Trading back then may not have been better, but it was easier. Today with the proliferation of execution venues, the different algorithms, you have a lot of choices which makes it harder. You can get it faster and cheaper, but you have to work much harder. Now there is one aspect in which those days were the "good old days," and that's for the thousands of intermediaries who have been replaced by computers. Ten years ago, the trading floors at the NYSE and the large banks were bustling with thousands of traders who captured those pennies between buyers and sellers. All those intermediaries, individually, made hundreds of thousands of dollars, and they've mostly been displaced by computers. So, one reason we hear about those "good old days" is because part of the financial community believes those really were great times.

Tabb: Five years ago, one of our clients had 150 equities traders. Then it dropped to 60, then 30. Now it's 10 to 12. There are still a lot of sales people but many fewer traders. This newfound efficiency resulting from computerized trading has impacted the way the sell side works.

Larry Tabb, Founder & CEO of TABB Group, a Capital Markets Research and Consulting Firm

Larry Tabb is the founder and CEO of TABB Group, the research and consulting firm focused exclusively on capital markets. Founded in 2003, TABB Group analyzes and quantifies the investing value chain from the fiduciary, investment manager and broker, to exchanges and custodians, helping senior business leaders gain a truer understanding of financial markets issues.

Mr. Tabb has written extensively on the changing market structure, exchanges and regulatory issues as well as new technology trends in risk management, order management, best execution, algorithmic trading, dark pools, liquidity management and advances in emerging technologies.

Quoted extensively and in virtually all industry and general news publications, he has been cited in The Wall Street Journal, Financial Times, The New York Times, CNN, Bloomberg, CNBC, Reuters, Dow Jones News, Barrons and Forbes as well as CNBC, CNN and Bloomberg TV.

Jamil Nazarali, Citadel Securities' Senior Managing Director and Head of Execution Services

Jamil Nazarali is Head of Citadel Execution Services (CES), one of the leading retail market makers in the United States. Mr. Nazarali also oversees algorithmic trading and Apogee, Citadel Securities' alternative trading system.

Prior to joining Citadel Securities in 2011, Mr. Nazarali was Global Head of Electronic Trading at Knight Capital Group. Previously, he was a management consultant at both Ernst and Young and Bain and Company.

Mr. Nazarali serves on the Board of Managers of Direct Edge Holdings LLC and the Board of Directors of NYSE Liffe. He is also a member of the New York Stock Exchange Electronic Trading Advisory Committee and the Nasdaq Quality of Markets Committee.

Mr. Nazarali received a bachelor's degree from the University of Western Ontario and an MBA from the University of Chicago.

Q: In the last several months, we've seen a wave of Congressional scrutiny on computerized trading in the wake of the Knight Capital glitch and the Facebook IPO. Larry, you've said the first job for Congress in terms of enhancing market efficiency and protecting investors is to "do no harm." What are some of the potential pitfalls when it comes to over-regulating technology in the markets?

> *"A half second is an eternity in the market. If network providers slow down market infrastructure, even by fractions of a second, you will go from a market where everyone wants to provide liquidity to one where no one wants to provide liquidity, which will make it a lot harder to trade."*
>
> \- Larry Tabb

Tabb: Let's start with the "do no harm" principle. The easiest example is the discussion on holding periods. In Europe, there are proposals to hold orders in the market for half a second. Some network providers are looking at switching infrastructure from 60 nanoseconds to 6 nanoseconds. Half a second is an eternity when you are breaking it into milliseconds, microseconds and nanoseconds. If my order gets locked up for half a second, the only way it gets definitively filled is when the market moves the wrong way and I can't cancel my order. As a result, the person who placed that order will increasingly widen the spread to the point where I can be pretty confident I'm not going to be picked off. So, you go from a market right now, where the incentive is to provide liquidity, to one where all that high-speed technology is pointed toward taking out the prices that are furthest away from the market...when the market's moved. You go from a market where everyone wants to provide liquidity to one where no one wants to provide liquidity.

Nazarali: I completely agree. Some of the regulation is data driven and good for the market. However, the kind of regulation that most worries me is what Larry just described, which is really driven by populist sentiment and a misunderstanding of the market. It's very difficult for the layperson to understand the harm of holding a quote for a half-second. As Larry pointed out, a half-second is an eternity in the market. There are countless examples where frictions in the marketplace have resulted in worse liquidity. The London Stock Exchange (LSE) is a great example. Several years ago, LSE had fairly antiquated market technology. Investors were charged a fee if their cancellation-execution ratio exceeded a certain amount and this created friction. In response, LSE changed their pricing mechanisms and found that their spreads ultimately narrowed. During this interval, however, LSE went from being the leading exchange in Europe to losing something like half their market share since they were so slow in removing the friction. When you put these frictions in the marketplace, it clearly results in worse prices for investors.

Q: Let's broaden the discussion to the issue of market structure reform. We've seen an explosion of trading venues in recent years – 13 exchanges, 50 dark pools, internalizing brokers that match buyers and sellers. Has the complexity of our market structure reached the point where we can't effectively monitor and regulate it?

Tabb: There are so many places today to get orders executed. Each pool and each internalizer has its own way of doing things and they aren't necessarily transparent. Each of the 13 exchanges has different rules for order types. Dark pools don't have to post their order types. For analysts, it's hard to understand all the different ways you can be matched in a dark pool. It becomes really complicated and you multiply that with time stamp issues, especially in a market that is moving in milliseconds and eventually nanoseconds.

Nazarali: I have a slightly different view. Historically, regulation has been focused around the exchanges because that's where most trading took place. Those days are gone and, as we discussed earlier, from the individual investor's perspective, that's for the better. We now have to continue to evolve our regulatory system for today's more complex marketplace. Some see complexity when they look at the market, but I see competition. As competition among brokers has intensified, commissions are continually going down and now exchanges have to compete for business like never before. So, I agree with Larry that complexity has made it more difficult to regulate and we have to change our mindset. However, I think competition has been very good for the market and investors.

Tabb: Competition has been great. For retail investors and for people investing up to a couple thousand shares, this is the greatest market ever. But if you're trying to get into larger positions, with all the dark pools and different venues, the more trails you have, the more breadcrumbs you leave. We need to balance that. If I am trying to buy a million shares of a liquid stock, maybe the price should go up; maybe I shouldn't be able to buy it at the cheapest bid-offer price.

Nazarali: As a whole, over the last few years, academic studies have shown implicit trading costs, shortfalls, etc. all going down over time. But if you are not careful and you don't understand the system well, you will not reap all the benefits of the last few years.

Q: Do you think the current market structure has driven the expansion of algorithmic trading?

Tabb: I think it's a chicken-or-the-egg scenario. When you think about the exchange, it was created for two reasons: network economics and regulation. Exchanges were built basically to bring people together. Now with fiber optic lines, it doesn't cost anything to get traders together. If that's the case, then exchanges can actually break apart and create multiple exchanges. So technology enables that and glues it together.

Nazarali: I agree; they feed off each other. I would add one issue, though – Reg NMS. I think Reg NMS has been great for the marketplace. It allows smaller venues to compete. Prior to Reg NMS, if a small venue posted a better price on the exchange, the exchange could trade through it and ignore it.

Q: What's the future of market structure? Do you see a greater proliferation of dark pools and alternate trading venues? Where will exchanges fit in?

Nazarali: The line between exchanges at one end, alternative trading systems (ATS) somewhere in the middle, and brokers on the other end is starting to blur. You have ATSs being owned by brokers; brokers doing some of the executions on ATSs; and ATSs becoming almost exchange-like in their size and scope. And now exchanges themselves have dark pools. The SEC recently denied NASDAQ the ability to use a new algorithmic order type. In essence, NASDAQ wanted to do what broker-dealers traditionally do. The SEC's ruling said to the investor community: "Hold on a second, the lines are blurring a little too much."

Tabb: I agree. The question will be: what is the implication? You can easily see the exchanges going to Washington and saying, "Look, you allowed brokers to create dark pools and ATSs, but now you're saying we can't do what they do?" I'm not sure where the lines get drawn in the future. Will all ATSs become exchange-like? Or will they break down? I don't think the game stops because of the SEC's recent ruling.

Q: Do you see the NYSE's acquisition as an effort for exchanges to stay relevant in this new market structure?

Tabb: The acquisition is more derivatives-oriented. We're talking about equity market structure. The SEC has substantially undermined the ability for equity exchanges to be significantly profitable because anyone can pretty much create an exchange or ATS, and establish their own guidelines on what they charge. The only real benefit the exchange has is market data and now that's under threat. But if you look at the futures side, they're vertically integrated and if they can't make money on the trading side, they can make it on the clearing side. With Liffe and ICE together, it creates competition against the CME.

Q: What are some of the most effective steps exchanges can take to reduce the likelihood of another Knight Capital or Facebook IPO issue?

Nazarali: One thing we'd really like exchanges to have is a kill switch. If they detect the glitch we saw with Knight Capital, they can stop the activity from becoming much worse. Exchanges may be losing market share, but they still have one critical role that no one else can come close to and that is price discovery. Knight Capital can't happen in a dark pool because it's not going to move all the prices. The exchanges have this central gate-keeping capability to detect and turn off this type of activity.

Tabb: Now if you go into the discussion that the SEC had on kill switches, it very quickly devolved into this huge effort to try to link all the exchanges with a sub-second kill message. Jamil, do we need anything that robust? Or do we need a hotline that just says, "Shut me off?"

Nazarali: We definitely should have a hotline. We should also have an automated mechanism that stops trading. I worry that some firms may not even realize they have a problem until the exchanges step in.

Tabb: Another thing we should mention is the circuit breaker, or limit up, limit down, which has been effective in tests. But those systems are still months away.

Q: Let's get back to the role of the retail investor. There is so much talk about the retail investor in the media, and it tends to come off as a populist issue. What is the state of the union, so to speak, for the retail investor today?

Tabb: For individual retail investors buying up to a few thousand shares, as I said earlier, this is the best market ever. Front-page stories arguing that the market environment is worse for retail investors or suggesting they shouldn't have confidence in the market are wrong. Investors should have confidence in the market because of the many advantages technology gives them. The challenges in the market are in the small-cap space. Twenty years ago, when it cost $200 dollars to get in and $200 to get out, retail investors had to make a conscious decision if they really wanted to buy or sell a stock. Today, people are mining tweets or near real-time news stories – and if there's the faintest hint of a problem, they bail. For big companies, it's probably not material, but if you're a small or mid-sized company, you don't want investors to flee because someone posted a tweet that's completely ludicrous. What happens to these smaller enterprises? How do they raise capital? There has been a discussion to widen the spreads of smaller companies, creating greater incentives to provide research and creating more market-maker opportunities for them to provide liquidity. This was all built into the JOBS Act. I support creating a pilot program to benefit small-cap stocks. I'm also for having an official market maker for small-cap stocks.

Nazarali: Never in history have investors been able to trade as quickly, cheaply and transparently. Having said that, I think there is a perception (incorrect though it may be) that the playing field is unlevel and that technology has disadvantaged individual investors. Part of that story has been perpetuated by those displaced by the technological evolution. Plus, this false notion just makes a good story. Any academic study, anyone who sees the data, would agree that there's never been a better time to be a retail investor. As an industry, we need to do a better job helping people understand why this market benefits investors and how we're harnessing technology to make trading better. Firms like Citadel are co-located on all the exchanges. We have connectivity to all the dark pools. We have technology on par with the best of the best. Rather than put retail investors at a disadvantage, we're putting these major investments in technology at the service of retail investors. We ensure they are playing on a level field with the entire market.

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