

## CONVERSATIONS WITH MIKE MILKEN



**Adena T. Friedman**

President and CEO, Nasdaq

*June 5, 2020*

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**Mike Milken:** Adena, thank you for being with us today.

Adena Friedman: Thank you very much for having me, Mike.

It was the very end of the 1960s. I had gone to Wall Street to work on my philosophy of changing the flow of capital and democratizing capital. When you walked by the Over-the-Counter trading desk, you never knew what you're going to see. There were the pink sheets, the green sheets, all these different color sheets where each market made their market. There was no electronic system in place. Many of these traders actually preferred it where they might have the only knowledge of where markets occurred. A couple years later, the National Association of Securities Dealers Automated Quotations became known as Nasdaq. It changed the world in so many ways. It changed access to capital. It provided much better knowledge and openness of where markets were. People were much more familiar investing because of that. Give us a sense of this company you have

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**led, in good times and challenging times. What is the sense of Nasdaq's purpose mission and the range of its activities?**

Thanks Mike. Back in 1971 when Nasdaq was formed, it really was formed as a disruptor. It was to disrupt those OTC desks that you mentioned, to democratize access to capital just like you mentioned your own mission was, and to automate trading. If you think about 1971, it was really the beginning of network computers. Gordon Macklin, who was the founder of Nasdaq, had a vision to create order out of some chaos, but also to allow for

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companies to raise capital at a much earlier stage in their lives. And to give a much more democratized access to capital, to investors and broker dealers, regardless of where they were located. Nasdaq itself was not centered in New York and it's networked computers were governed so that you could be anywhere in the country and have equal access into the market.

It was really a true disruptor of its time. What's amazing today is that it's the model that exists all over the world. Markets today are global. They're completely networked.

You can be anywhere and you can have access to great companies. Companies large and small can raise capital very early in their life cycle or later in their life. The world has great transparency into the stocks all around the world. That really was the Nasdaq vision that has played out over the last 49 years. Today, we have 20 markets ourselves that we operate in the U.S. and in Europe, but we also provide the technology that powers over 120 other markets today. I would love to have the chance to show Gordon Macklin all the wonderful things that he started, because I think he would be really proud of who we are today.

**I knew Gordon and everyone, particularly myself, was rooting for him to bring discipline, not only to our own firm's Over-the-Counter traders and market-making, but everyone else's in that area. Creation of markets gives people more confidence to invest. I know when I first went to Wall Street in the late sixties and tried to create markets, I needed to set up a trading operation because the liquidity was poor. You needed to identify thousands of potential investors. Likewise, you needed to identify thousands of number of issuers, so you can have a vivid market.**

**During the late 1960s, we actually closed the markets. Not because of volatility, but because of the delivery of the certificate paper was strangling the financial markets. Every time a trade went on, and one person sold and another person bought, you actually physically moved a certificate. Today, almost 50 years later, there were calls to shut the**

**market for a day because of volatility. One of the things that really shines in Nasdaq and your efforts, Adena, was to keep the markets open. Talk to us a little bit about that pressure and where it was coming from and how you saw Nasdaq's mission.**

I agree that it's been quite a journey in terms of the digitization of the markets. Just to give everyone a little bit of a flavor of the amount of volume that flows through our systems today, on our peak day, which was February 28, 2020, we had 55 billion messages flow into our systems and we generated over a 100 billion messages coming out. But if you look at just the trading of US equities trading across all U.S. markets and not just Nasdaq, the total volume in the markets was 19.4 billion shares. That represented almost a trillion dollars flowing through the system in a single day. That is our peak day on dollar value traded, second-highest day on share volume. It does give you just a sense of just how scaled the whole system is today. Imagine trying to do that in paper.

One of the big transformative elements of the markets today has been the ability for vast amounts of liquidity to flow globally in real time; to have trades occur in microseconds, the settlement occurs over a couple of days. I think it's an amazing element of the economies around the world. I think that the issue around that level of volatility though, is of course, large-scale institutional investors were just taken aback by the amount of volatility in the movement and the shares. There were also concerns in Congress and elsewhere: were the market's going to be able to manage through the level of volatility? Were investors going to be able to manage

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through that level of volume? I think the answer was a clear, yes. While there were some calls for the potential for us to take a pause, or to stop trading for a day, or even more than a day, I think that the rational thinking prevailed, which is that the markets are here to serve investors all the time.

The markets are open to give investors constant access to the capital that they've chosen to commit into their investments. If you close that market, you're losing that trust with that investor. It's really, to me, a trust factor. As well as the fact that companies at that moment had huge, huge needs for capital to manage through the beginning of what they were seeing was going to be a significant downturn in their business. If we had closed the markets, they would not have been able to gain access to that capital when they needed it the most. I think that both the Congressional leaders, as well as a business leaders and investors, all agreed that

keeping the markets open was one of the most important things we could do during the period of volatility.

When we talk about the importance of markets and the access to capital that brings, in the late 1960s I went to work for a firm that was the leading equity-research firm in America. I had pointed out, and people felt at that time, that there was either investment-grade or government bonds and stocks. There was nothing in the middle. But 99% of all the companies in America, and most of the companies on Nasdaq, are non-investment grade. The question was, how do we create markets in debt? It took quite a while, but I eventually convinced them by showing them history and the performance over long periods of time and even the Depression. I also went through their recommended stock lists; most of the stocks that they felt were the growth stocks and the best stocks in the future were non-investment grade. Most of the stocks they have in their sell lists were investment grade. The question was, if they're willing to invest in those equities, obviously we should be making markets in debt.

The stock market, is really a market of stocks. Whereas Nasdaq is up again this year, there are great variances in how markets have done. The Russell 2000 down almost 20%, the Nasdaq biotech index is up 11%, the S& P down eight to 10% and the Dow Jones down 14% to 15%. Understanding the market of stocks, I thought we might just step back and talk about your role at Nasdaq as it relates to some of the industries of the future. One of them is bioscience. This is an area I personally been involved with for 50 years. When we think of bioscience, most people think, particularly during COVID-19, it's your health, it's medical research. But it's also the future of energy, agriculture, the environment, and what we're learning about bioterrorism; in this case, the virus is bioterrorism. It will also be the future of computers based on biological mechanisms and data storage. What has been Nasdaq's approach to bioscience companies? When I see the index is up 11% this year, after being up substantially last year, how have you approached convincing companies to come and list on Nasdaq?

The bioscience industry is actually one of the great success stories of the public markets. If we're going to go back in time when Nasdaq was formed, one of the differences that we made in the industry was allowing companies to go public before they were profitable. At that the time, that was not heard of. If you wanted to go public, you had to be a profitable organization. We changed that paradigm completely. That opened the ability for new technology companies to go public, for new companies just trying really progressing the economy into a new direction, to come out and tap public investors. That has been one of the hallmarks of Nasdaq's success. I think that at the end, that then really translates very well into bioscience, because biotech companies can take years to prove whether or not what they're researching and developing ultimately works, for one thing, and has applicability in the broad market. Yet they tap the public markets before they even generate revenue. They often are called pre-revenue companies.

There's a whole ecosystem of investors out in the world that invest really solely in biotech and bioscience companies, and they have a portfolio play. They might be thematic around cancer research, or they could just look at it as a basket of opportunity. They use the public markets at a much earlier stage than a lot of other industries do. Because we've always been supporters of earlier-stage companies coming in and finding

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public investors, we have become the home to bioscience: 94% of all biotech companies list on Nasdaq. If you're listed on Nasdaq as a biotech company, you're included in the Nasdaq Biotech index, which now has billions of dollars of assets under management, which then of course gives them great long-term investors in their stock. We've developed expertise in that investor ecosystem to help them target investors with our investor relations services. We give them governance tools that help them manage their companies as they're growing. We do events and other things that are geared towards that clientele. I think because of all of that, we have become the home to healthcare. And we're extremely proud of that.

**There are various ETFs or other investment vehicles that people have created around your index if they chose to invest in the Nasdaq biotech index. How does that work? How do you give the rights to people to launch ETFs or funds or pooling funds against your industries?**

Today, we have over \$200 billion of assets under management tied to the indexes that Nasdaq creates. We have probably two different flavors of general categories of indexes that we create. One are benchmark indices, and the other are smart, beta indexes. On the benchmark side, that would be something like the Nasdaq 100, the Nasdaq Composite, the Nasdaq Biotech, the Nasdaq Semiconductor, where it's really more of a market cap-weighted index. It's pretty straightforward, systematic around an industry or a sector. And of course the Nasdaq 100 is the top 100 non-financial companies listed on Nasdaq. It's a pretty straightforward calculus of who's involved.

The great thing about indexes is that they're, generally speaking, created through a very formulaic calculation. It's not like you're adding a lot of your own judgment into the decision as to how the indexes form. Instead you're creating a set of rules that the index must follow in terms of what is included in the index and what's not included. That gives great transparency to investors; they'll know all the time why a company is in the index or why it's not, and they can see at any moment what's in the index and what's not. We send that out every day. It really is a transparent way for investors to choose to invest in the market, but not have to choose to do all the research on an individual stock.

But on the newer side, you have smart beta indexes. I think that's in some respects, a misnomer. I like to call them outcome-oriented indexes, meaning you're choosing an investment outcome. It might be that we have a Dividend-Achievers index that is really looking at companies that have increased their dividends consistently over a long period of time. We have a momentum index called Dorsey Wright, which really follows the momentum model in terms of choosing which stocks are in the index. Then we have a series of others that we've created, technology-oriented indices that are geared towards other outcomes. We're really proud of the fact that we have this very diversified set now; about little under 30% of our AUM is in smart beta indices, and just over 60% is in our benchmark indexes.

We create the index, but we then partner with an asset manager. It could be a firm like Invesco or First Trust. We work with them and we turn these indexes into an investible vehicle through this concept of an exchange traded fund. It's, I think, one of the most creative things that has been generated in our industry, where it's a very tax-efficient investment vehicle that you can trade all day long. It's super liquid and it allows you to make a dramatic bet on the market as opposed to having to do individuals names. As you know Mike, having been in the research business, there are so many things that can drive the success of an individual stock that you really have to do a lot of work behind that. But if you are investing in an index, you're really choosing more with the thematic way to invest in the markets.

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I think in many ways, as I reflect on the building of the fixed-income market, convertible-bond market, preferred markets or the equity markets that I was involved with, the creation of these markets gives individuals who don't have the time, the ability or the staff to do basic research about a particular area; whether it's semiconductors or bioscience, you've given them those opportunities.

When I think of your firm, Adena, I actually think of it as a technology firm. In this challenging period of COVID-19 as it's unfolded over the past three to four months, my assumption would be since you were a technology firm, that your 4,000 to 5,000 employees were able to transition to working remotely and interact with each other from a technology standpoint. Has that occurred?

Yes, it has. We saw this coming because of what was happening in Hong Kong and China. We have operations there, and we quickly moved to restrict visitors. Then we went to a split-team environment and then moved to work from home environment over a period of just a couple of weeks. It was a smooth transition, I think, partly because the entire industry has been investing a huge amount in remote management capabilities on the back of other tragedies that have occurred particularly around the New York area. 9/11, as well as the Superstorm Sandy, both of them just decimated New York City. I think that the result of that was that we suddenly lost connectivity and we couldn't operate efficiently. We all knew that we had to make sure that we were no longer that reliant on a

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single location. We're proud of the fact that we were remained operational throughout both of those situations, but the industry did not.

Therefore we and the industry invested enormous amounts in allowing our employees to work from home. We tested it over many years, of having them work from home during the trading day, making sure we operate all of our markets from a home environment, and replicating all of our infrastructure into a remote

capability. When COVID-19 happened, it was an easy decision to allow our employees to stay safe while we were maintaining the operations of our markets. What happened in March would not have been possible five or 10 years ago. I think the investments the whole industry has made to allow for electronic trading, remote capabilities, is really remarkable. It is a testament to the investments we've made over the last decade.

I think people are constantly focused on what's wrong and haven't really focused enough on what's right and what has worked. The internet has worked.

Telecommunications has worked. Power has worked. Distribution of food has worked, and so many other things have worked. One of the things that we really underestimate is how important these financial markets are. Anyone who had an investment anywhere in the world was able to liquefy if they needed cash, if they needed to de-risked their portfolios. There are millions of people – you have no idea who they are – who are either choosing to invest their pension, their endowment or their foundation. Do the people at Nasdaq fully understand this service they're offering?

I think that their understanding in their passion for our mission has never been stronger. It's really been an emotional experience for us to watch our markets really operate the way they have, to make sure that the flow of capital continues to flow through the economies all over the world. It wasn't just our own markets, but all of those other markets where we provide technology; they were experiencing remarkable surges in

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volumes as well. We were just extremely proud of the fact that we were able to partner with them and make sure that their markets operated seamlessly throughout this experience. Knowing that it's really hundreds of millions, if not billions of people, who are able to continue to have access to their hard-earned money. They could also express themselves in the markets by making investments. That mission is just fundamental to who we are. The ability for us to power economies through our markets is something we talk about a lot, but I think people really get it. We lived it. And that dedication, that passion, really showed through and still showing

through every minute of the day. Our people are working extremely hard right now to make sure that not only are we're keeping these markets operational, but we're now continuing to drive for our future because we are an important technology provider to the industry. We continue to drive to a future where we can leverage the latest technologies available to us to be able to modernize markets all over the world.

I think one great example is we worked with the CSD [Central Supplier Database] down in South Africa to use the blockchain to create an e-voting capability for proxies. They can basically have perfect records of voting on all their proxies now through a DLT solution. They actually had their first vote yesterday using the new technology, which in a work-from-home environment when everyone is having to work remotely or other elements of the system aren't working as well, is a great testament to how new



technologies can continue to support the markets going forward. Those are the types of things that make our team just incredibly excited.

**I went back and looked at World War II and books written about what would be called cooperative capitalism, where government and business are joined together in maximizing the needs. I think people underestimate what happens in a normal environment, but during a time of crisis, you often see unprecedented levels of cooperation between business and governments. I know this ties into this concept, which you believe strongly in, and that's cooperative capitalism. Can you discuss that with us, and why is it so important?**

Absolutely. I agree with you, Mike, that the level of collaboration and cooperation among private companies and between private companies and the government has been underestimated and under reported for a long time. In fact, I remember talking to a reporter recently. I said, 'you talk about all the things that you'd like to see go better, but you don't often talk about the things that are going well.' I gave him several examples of companies that have done really great things for the communities around them; companies that have taken their technology or their capabilities and try to improve the societies around them. They have organized huge philanthropic activities in the communities around them. And he said, 'well, that's just not news.' But that undercurrent has always been there. I think right now you're seeing as some pretty extraordinary actions taken by companies and by governments to support their citizens.

In the United States, we're seeing the government take unprecedented action and move very quickly with the fiscal stimulus, as well as the Fed really pulling out every tool in the tool kit to support the liquidity and the capital flow that is so critical to making sure that companies and individuals have access to capital during this very difficult time. You're also seeing companies converting their manufacturing plants to create masks or other PPE or ventilators.

One story I love to talk about is the grocery store chain that bought all of these vegetables and fruits from farmers that would otherwise rot because the farmers weren't able to leverage their normal supply chains. They bought them all up and donated all of that food to the food banks where they operate around the country. I just think that is such a great example of companies coming together and saying, 'I'm going to do what's right for the community around me right now, because I know that if we do work together, we will find our way through it.' That's now making the news because it's a good example of capitalism working in collaboration with government to find a way to broaden society. I'm really hopeful that some of this continues; this is a sea change in the way that we think about companies and the roles they play. I think that we're going to see continued dedication to communities going forward even after this crisis is over. And hopefully also some more shared science. I think, just imagine what we could create if that were to happen.

Adena, as you pointed out, this goes on unnoticed every day. In the case of many hotels that have been shut down throughout the country, where they have no customers, they have kept their kitchens open to feed the local community, for people who need food, for their food banks, or children that used to be on free lunch programs when the schools were open. It's been an amazing thing to see. In the 21<sup>st</sup> century, if you want people to believe in your company, you need to have a purpose. You need to have a mission. And not only that, your own employees need to know what you stand for. None of us are an island.

But let's talk about capital for a moment: There's still a need for capital. There is a need for companies to get listed. When you go public, there are certain advantages you have. I actually wrote my master thesis on this in the late sixties, early seventies, about the ability to adjust your capital structure to the type of company you are and the environment you're in. Those companies that are listed on Nasdaq or other exchanges today actually have an environment [advantage] over those that are not public. Many people felt that there were advantages to being private. But during this period, having a public security, an equity that you can issue more securities with in need of capital, is important. How are you reaching out for new listings and those companies that need capital during this period of time?

First of all, I do agree with you. I think the public markets are here for you every day. During good times, you can leverage your equity capital for acquisitions or provide equity capital to your employees so that they can own your company with you. That's a great creator of wealth for your employee base. Then in bad times, they're there when you might want to try to de-lever or de-risk your company. You might actually need to raise capital to continue your operations. The banking system is there to support you in many respects. They also there to help find creative ways for you to get that capital you need because you have what we call permanent access to capital. The public markets are there to support you during those critical times. That is one of the great benefits to being public.

We still are having companies tap the public markets and go public. The first few that came out, the beginning of the crisis were biotech companies. Bioscience companies that continue to have great innovations that they want to bring to market. They found that there were still very receptive investors for that. We've also seen some technology companies come out – and we actually have a pretty healthy pipeline of listing candidates over the coming weeks and months – that continue to see the public markets is their path to the future. That sense of access to permanent capital has never been stronger in their minds.

I do think though, to be honest, that it's really a combination of the private markets and the public markets that make the economy work. I don't want ever to diminish the role of private capital. I think that early capital coming into companies when they're first forming and in their earlier stages is absolutely critical to allowing that fast innovation. I think that

there are also some companies that are misunderstood by public investors, and so they can go into private equity hands and get rehabilitated or change in a way that's harder to do out in the public domain. There are roles for private capital and public capital, but I do think the public markets have really shone through as being here and available at all times. That's one of the key testaments to who we are.

**Adena, your experience at Carlyle gave you a great appreciation of what private equity does. At this time, there are far more companies controlled by private equity in America than our public. That's probably the case now in most of the developed economies in the world. But it's during a crisis that quite often, these challenges come forth, that we see the advantages. The United States beginning in the late 1970s, has been financed by public and private markets. As you've pointed out, banks today own a very small percentage of bank loans. Most of them have been held now by the ultimate investor, whether they're insurance companies, pension funds, family offices, sovereign wealth funds or mutual funds. What have you been hearing from your companies and investors during the past few months?**

It's been really interesting to talk to different companies. I think that the companies that are impacted heavily by the virus, any company that I call is in the “experiential industry” – that could be a restaurant or, or an airline or hotel company or someone who creates experiences for people – I think they've obviously been hit extremely hard by everything that's gone on. They are working as hard as they can to support every effort to create a safe way to reopen the economy. They are also working very hard with the banks and with the markets and governments to find ways to sustain themselves throughout this time.

Then you talk to other companies like in tech, where they've had just this surge of activity flowing through their systems. They've had to scale up their systems extremely quickly to support the demand. They've noticed that their technology is going to be extremely relevant, not only throughout this crisis, but into the future. There's really kind of a tale of two cities there. I also would say that every single one of those CEOs is on a common mission to find a path through this. Whether you're doing well or you're really not, there is a common goal, which is to find a path forward and to make sure that the economy is able to sustain itself. That's been pretty remarkable in terms of all the CEOs working together on the investor side.

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***“There is passion around creating more opportunity, not only for women, but for people of all backgrounds. There are huge benefits to diversity of thought, diversity of backgrounds, the ability for us to understand our customers better by having people inside our organization that are akin to our customers. I think this is hugely important, and I do think there's been a lot of progress.”***

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At first, you could definitely say that there was some panic selling, no doubt about it. Then there was this moment of rationality, which was okay, let's really think about how long this is going to last. You're seeing the Fed come in with a lot of support. You're seeing certain companies actually do well. There started to be more discerning attitudes towards 'how do I reprioritize my portfolios?' And then of course, there's the common view that we all know: once we get through this, once the fear is gone – because there are valid [medical] treatments that, of course the Milken Institute is helping to support, or a vaccine that is effective – that fear will be gone.

As much as we like to read about how the world's always going to be different, I actually think that a lot of things will go back to being the way they were. We are going to want to go out to restaurants. We're going to want to see our friends. We're going to want to go to concerts. We're going to want to travel and see the world. All of those things will come back. I think the key is to make sure that the economies are in a condition so that people can afford to do that. That's the big challenge that we're all trying to work through in the hope that we can see our path to the other side of this without too much economic damage. It's been quite a remarkable time, but that sense of mission across every element of economy has been there, and I've been really impressed by that.

**One other area I want to touch on is equal opportunity for all individuals. The Milken Institute and on other activities on a dedicated basis have been very focused around the world for opportunities for women. What I have noticed in this effort is there's kind of a generational issue. My wife has a different view in that she grew up in that period of time where there were few women in professional schools. Our daughter has a totally different experience. She sees her friends: half the classes in business, medical, law school are women. What has been your experience?**

When I went to business school, it was only 25% women. It was noticeable that there were not a lot of women in the school. Most of the women, at least at that time, were going into the fields of accounting or human resources. There were very few of us in the product management and financial classes. I used to have debates with my father about that, because the investment industry is very clear that they have a long road to go to really create a more open environment for people of different backgrounds, including women. That surely was the case. We actually had a lot of dinner discussions about how do you accelerate the change? It's a hard thing to do.

But once I got into the financial field, it's been a great experience. People at Nasdaq have always been very supportive of the needs of the individual. I worked part-time for four years after my kids were born and my manager let me do that, and he promoted me twice during that time. That just kind of gives you an example of how advanced their thinking was even back in the nineties. I think that in general, being in a technology company, being in a regulated business where there's a lot of risk management

capabilities, as well as the financial skills marketing and other things, there's just a lot of different opportunities for women to excel at a place like Nasdaq.

Then going to Carlyle, the tone from the top was excellent. They really were extremely supportive of finding ways to bring more women into the firm and give them the right experience. It's been a change. I think it's gone from talking about it, to starting to demonstrate it, to really walking the talk in our industry. There is passion around creating more opportunity, not only for women, but for people of all backgrounds.

One of the things that Nasdaq has done in recent years is launch our Diversity Inclusion and Belonging team. We now have 10 affinity groups within Nasdaq, or we call them employee networks of people, with different history. It could be Southeast Asian employees, or it could be parents. We have an accessibility network. We have a green network, we have a women's network. We have a network for African-Americans and other backgrounds. I think that really helps because not only do they find other people that they can talk to and share common experiences with, but they also then can give me a better understanding of what it's really like: what do we need to do more of to support each of these groups so that they feel like not only do they feel included, but they really feel like they belong at Nasdaq.

That level of communication and organization among the employees, I think, has been hugely helpful to Nasdaq. But I think it's happening all over the industry. I do believe that those types of things are making a big difference and opening our eyes to the benefits of diversity. There are huge benefits to diversity of thought, diversity of backgrounds, the ability for us to understand our customers better by having people inside our organization that are akin to our customers. I think this is hugely important. I do think there's been a lot of progress.

**The ability to see the world through other people's eyes is exceedingly important to success, particularly for a leader. I want to thank you for joining us today. We also want to thank you and your team for all you've done to provide capital to companies and businesses throughout the world, and for keeping financial markets working; not only for Nasdaq and your markets, but for all those markets around the world that run on your technology.**

Thank you very much, Mike. I really appreciate it.

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