IonQ at Morgan Stanley Technology, Media and Telecom Conference 2026
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Joe Moore: Welcome, everybody. I'm Joe Moore, Morgan Stanley Semiconductor Research. Very happy to have Inder Singh, CFO of IonQ. So thank you for coming. Appreciate you being here.

Inder Singh: Of course. Thanks for having me.

Joe Moore: I think we haven't had you since the ARM Day. So good to see you.

Joe Moore: So you've been in the CFO seat, I guess, a little less than a year, but you were on the board before that. What drew you to the IonQ opportunity?

Inder Singh: Well, I mean, like I said, I was on the Board, I actually joined the Board when the company first went public and quantum computing four years ago, like no one was really talking about it, and it seemed like it had promise but you never know for sure. Over the four years that I was on the board, I got to see the company actually scale. The ability to make us a more powerful computing device year after year after year. Peter Chapman, who was the prior CEO, took it from basically almost zero revenue and created a product that was more powerful each time in the market and then other companies that have gone public around the same time also. And being at ARM, I was like, okay, this could be the future of computing. And wouldn't it be great to have like a front row seat as part of it.

So i was still CFO. We had sold ARM to NVIDIA, who was in that holding period waiting for approval. And this became an interesting company, the more I watched it scale. It had the right engineering talent. It had -- didn't need go-to-market much because, frankly, sales were still pretty small. And mostly, it was like research laboratories in the first few years or so. But to see it come out of the research laboratories. And then importantly, when Peter announced his intent to retire and move on to other things, we faced a CEO succession and I was Lead Director at that time. I was on the Audit Committee. And we were looking at internal and external candidates. And it was hard to find somebody with 10 years of public company quantum company experience; like there were none. And so we looked at all of the other candidates and sure enough, among our choices, we had a really good CEO, who I thought physics major, Cambridge, multidimensional thinker. So early last year, we appointed Niccolo de Masi, as CEO of the company; and today he is permanent CEO.

And so he very rapidly lived up to my best expectations as someone who is not just going to be like a linear executor, but looks at the market more broadly and says like, what are all the different things, quantum or quantum-related that we need to have and kind of like Cisco, if you think about Cisco, the way they became the company, let's try to be that and look at the networking of quantum computers, the security that you need after a quantum computer breaks encryption. The space-based assets you might need to quantum secure, et cetera, et cetera.

And so in September, I moved from the Board to the company as COO and CFO. And it's been pretty amazing. It's been like, I don't know, 5, 6 months, it feels longer than that for sure. But watching the company not only build a machine that each year was faster or had more qubits, but also a company that is building the applications that go with it, because what good is the iPhone without the App Store, et cetera. And then you have a portfolio of products. A year ago, we had one product, and now we have a dozen or more. So many vectors of growth. And yes, as a Board member, you know, you get to see sort of like snapshots of the movie, but never the movie and I wanted to be part of it.

Joe Moore: So maybe as a relative newcomer perspective to the company, can you talk about why investors should care about quantum? And we're not at the point yet where we're doing things that can't be done classically, but it's coming. What types of applications do you think will happen there? And should we think about the market cap of AI as being the territory you're going after? Just why should we care about quantum? Obviously, code-breaking and things like that we get. But the sort of broader use cases.

Inder Singh: Yes, those are great questions. I mean I think the promise of quantum is around doing things that classical computer can't do, right? And so there's this thing called Quantum Advantage and at some point, you reach that where classical computing just cannot do that many number of calculations or that any number of simulations of things before giving you the best answer. And forever, that's been like a bit of a moving target, frankly, right? So NVIDIA isn't standing still. I mean they keep innovating. So classical computing moves as well. But at some point, you cannot simulate a calculation on a classical computer that a quantum computer could do. We're closer to that than we were three, four years ago for sure. It's a humble opinion, maybe a year or two away before you get to that point.

The power of Quantum, as most people may know or not know, is the fact that it's like 2 to the nth power versus 2 times n. So the number of qubits that you add have an exponentially more powerful impact potentially. Quantum computers are right now still of different modalities, right? They're superconducting and there's photonic and there's annealing. And yes, there's ion trap which is what we have. So some start with more errors, some error-correct, so start with less errors. The point of the industry though is that there'll be one or two modalities probably that will succeed in the longer term, to be decided which ones. Ion traps begin with fewer -- and I look carefully at as much as I know. I mean a couple of engineering degrees, but enough to make it maybe dangerous to look at the different modalities and realize that there'll be some applications that work better on one and some better on the other.

For investors, I think right now, there are a lot of companies that are private that want to go public, some that are private, they want to stay private, that are public already and available in the market. For me, it's a question of is there a company that is building not just the iPhone, if you will, but the iPhone and the app store at the same time. The ability to do the application that runs on that computer each successive generation and what we've tried to do with IonQ is to be that, build enough applications ourselves to make it relevant either in life sciences or the acceleration of drug discovery or [inaudible] science, not everything. And then also be able to keep that going. So each successive generation with a road map that you can invest behind. So if we are only in quantum computing as we were a year ago, that would be interesting itself. But what Niccolo has done quite rapidly is add the networking piece, as I said, the quantum security piece, as I said, the sensing piece and the other elements that you may need for different kinds of solutions for different types of customers.

Joe Moore: Okay. Those time frames of maybe being a year or two away, I feel like a lot of your quantum competitors seem to point more to several years away. I guess, is that -- would you make the case that your technology is just going to be ready sooner? Or is there just a different -- are we different definitional things about readiness, just on how do we think about that?

Inder Singh: Yes. Joe, that's a great question. I think there are a couple of sort of like leading indicators I always look at, right? So when something moves from the lab to a commercial deployment, that's a good sign. When something is a repeat purchase by a customer that says, I'll buy your last generation, this generation and the next generation potentially, that's a validation. When you start demonstrating, for example, as we did with AstraZeneca, the ability -- and by the way, that was in partnership with NVIDIA, right? So -- and you can argue which was the accelerator to the other. And I think it was a QPU, probably the accelerators over GPU. There are things you can do in the QPU that you cannot do as efficiently on GPUs and vice versa. So that kind of hybrid computing beginning to be deployed more and more is what I'm seeing. And to me, that's another litmus test for has something reached the ability for it to be deployed in more places. I'm seeing more AI factory and data center operators say we want QPU in there, too. And so those kinds of patterns,

along with the use cases that I mentioned around AstraZeneca, protein folding with [inaudible] and then applications that we will build for an energy grid operator, for example, that is one of our customers who bought our network first and then the computer and wanted us to help them build an application to optimize the electric grid.

So data center operators come on and maybe you saw recently, data centers are falling off the grid just as fast because they sense the electrical current being- imbalance of some sort and they go to a backup power. So grids are having to deal with sudden drop-off loads as much as well. If you're a grid operator, you've got to keep it up no matter what. So those are the kinds of things that I think are real applications today. And for us, like every successive generation, which is one a year, the road map that we've built now with a semiconductor base going forward versus lasers in the past, allows us to maintain the cost advantage, I think, of the promise of quantum computing and also introduce more things in a more predictable way using a foundry system that's been built over years and years and years now.

Joe Moore: Okay. And then the kind of world-changing applications that you talked about on the earnings call, would that be AstraZeneca? Would that be- like what are those?

Inder Singh: I think those are good examples of them, right? And when I say world-changing is a very big thing, right? But like looking for the causes of chronic diseases, trying to find how protein folding either affects disease of the brain or memory or not. These are real life things that have already begun to be tried. Some of them get more capable, the more qubits you have, as you know. And then others become enabled by more qubits down the road. So our road map that we've published is a five-year road map. It goes from 100 qubits, which is the next-generation machine rolling out now. It's our fifth generation machine, the sixth generation moves to semiconductors. And that's where we think that you now start to get economies of scale, lower cost potentially. And then the energy consumption, as you all know, and you know this from all the work that you do on semis. GPU clusters, AI factories, use a lot of energy. Quantum computers of the kind, like ion-traps that we build, don't.

Joe Moore: Yes. Maybe talk about the modalities and why ion-trap -- I mean it's always seemed to be aesthetically appealing to have something that can just sit in a box on my desk and do stuff rather than build low-temperature superconductors. But obviously, there's success on all modalities at this point. Like it's -- for a technology that's getting relatively far along, there still doesn't seem a clear-cut consensus on which modality is best.

Inder Singh: Yes. I think -- and that's fair. I think that there are some who are choosing superconducting, and that's great. I think that it requires, as you say, not just cooling, but like down to 0.2 degrees Kelvin. I'm told that it sometimes takes a month to turn a machine like that on and get it a temperature down. The -- but again, it could be something that is a long-term solution. There are others that are like still require scientific breakthroughs, photonics tend to be one of the hardest ones, for example. In the case of ion-trap whether lucky or smart, the founders of this company like 30 years ago, whenever they thought of this, and wrote the paper on, it started with ions which exist naturally in nature and don't have to be created. Have a charge to them so you can actually say to an ion, do this, do that, so make it dance, if you will, entangle it, use it for computation.

It naturally has fewer errors to correct to begin with. And then- so you don't have the overhead of error correction as much. And then you have the ability to build applications that as we're doing ourselves as a company, scale with the qubit count that you've developed. And it's the logical qubits or not the physical qubits that companies talk about often, I think. Joe, you know this, it takes standards sometimes for everyone to talk the same language. Those standards don't exist currently. And I think that makes it easy for investors, companies, customers who get confused which one is better? This one says they have more physical qubits. This one says I have that. To me, in the end, it's all right, which application can you run first on which machine? And that's kind of what we're trying to do, do both, build the machine, build the application.

Joe Moore: And how does having that full suite of networking sensing software that you've acquired, how does that help you to get there?

Inder Singh: Yes. It's -- so I worked at Cisco. And one of the things that I've learned is obviously like be agnostic, like connect anything to everything. And number two, make sure that you have everything in one roof and then you can start with a customer buying 1 aspect of your portfolio moving to another. So we already have examples of that. We have a customer that is an electric grid operator that had built a dark fiber network, high-quality infrastructure and said, I want to actually put a quantum network on top of this and provide more connectivity to my growing list of enterprise customers in my region. And then said, we now want to buy a quantum computer, so I can deliver more services and applications to them as an additional revenue source.

And we've had others that start with quantum computing and stay with quantum computing and don't need the networking. We have in Chicago, for example, a computing device deployment, leading to, okay, I need to connect to this other place as well. Our networking solution, which we're selling today globally, connects our computer to anyone else's computer. So it's agnostic. And a lot of the work we did over the last four or five years was learning how you do that? How do you take a quantum computer, put it onto a telecom network, same signal being carried as DWDM and other things and then translate it back to the frequency that you need to have for quantum computing.

The other elements around sensing, which is around making sure that GPS, which can be jammed, it has a replacement of some kind in certain environments where, for example, the U.S. can depend on PNT, position navigation timing, and not face the same jamming, that was an idea that came to us from a customer, and maybe more than one customer who actually said, "Well, if you had that capability, we'd look at you, too." So they may start in one place and end up in another place. The cross-selling opportunity, I think, those things, when they start to flow through your P&L and your revenue start to grow, and we just reported, as you know, $130 million we guided for this year as well. And then organic growth continues to be 80% or better and I indicated 2016 (sic) could be even 100% perhaps. That means your core business is growing and these other businesses are driving more opportunities for growth.

Joe Moore: And maybe talk about that 80% organic growth. And I guess, how much should we even be focused on revenue as kind of the real value of the company? I mean, obviously, this technology is kind of at a development stage. It seems most important to hit the proof points but you have a lot of revenue as well and the fact that you broke out organic revenue growth is helpful to understand how much came from acquisitions. So what's driving the organic growth rates that you have? And how much should we care about it?

Inder Singh: Well, look, as usual, product cycles drive revenue growth, right? So the fact that we keep investing in R&D, which for also like a mantra, we have to stick to. For my ARM days, one of the learnings was like 80% of every dollar you spend should be on R&D. We're not there yet at IonQ. We're trying to get there. But the idea is keep investing in innovation, and you know this better than anyone. And that's how you maintain your advantage for customers. Ultimately, that's what we're trying to deliver. And then hopefully, of course, for investors. The organic growth -- some of the metrics that I provided on the earnings call was actually from listening to investors Okay. So it was my second quarter reporting earnings. In the first quarter, I did sort of like a listening session around what else would you like to hear? And the questions were around, like, are you buying things because your organic revenue isn't growing? Or are you still selling mainly to labs? Are you still U.S., et cetera, et cetera.

So each of the data points was designed to like provide transparency into the revenue sources, and we talked about commercial, we talked about international growth, and we talked about organic growth. I'll add more metrics as we go along. If it feels like- help investors understand like how are you getting all of this growth.

Joe Moore: Because I hear both the positives and the negatives, but you're kind of like -- it's like judging too much -- being too judgmental about revenue when we're sort of -- nobody's claiming that we're doing something yet that's a breakthrough, like we're kind of getting there. but like that's when you get paid really. And so everything up until that point is going to be development. And it's going to

be -- there's some related party and all that, that goes into any kind of development relationships. But I feel like it's really the technology proof points that I mostly would care about.

Inder Singh: Yes, you're absolutely right. And I think that the fact that we have now put most of the scientific breakthroughs behind us, achieved for 49 Fidelity, for example. So other modalities still have some more work to do. I think what we now have to do is ensure that we can get from where we are today, which is our fifth generation machine with 100 qubits to 256 qubits at the end of this year, 10,000 qubits next year, 20,000 qubits, up to 2 million qubits. And I think that is a road map that we have been working hard to derisk and execute, if not accelerate.

So some of the things we've done are to ensure that we can achieve those sooner and move things to the left. The more you move stuff to the left, the earlier you can deploy some of the game-changing applications you're talking about.

Joe Moore: Yes. And I don't mean any of that critically. It's just at this point, it feels like really, this is a technology that isn't really that economic yet. And so the development is going to be what drives the revenue. I guess in that context, you're going to be at GTC later this month at NVIDIA's developer conference. And obviously, NVIDIA, I've sort of seen this evolution from sort of being dismissive of quantum to actually embracing it and potentially making a lot of money from it because he's got a lot of coprocessors that sit in these quantum systems. How do you think about that relationship? How do you think about the advances that they're making? And is that something that will help you guys move forward?

Inder Singh: Yes. We've been working very, very closely with them, as you can imagine. I mean our customers also want us to work very closely with them, right? So they may start with an AI cluster, AI factory data center. And then some of the customers are saying, "I want to put the GPU next to it." And so we work closely with them to make sure interoperates with CUDA-Q, of course, but also like AstraZeneca was done jointly with them, right? And it was an effort that AstraZeneca benefited from. It allows us to take that and replicate it with other pharma companies also. So I see like a QPU, GPU environment where some things are done best forever on GPUs, perhaps, other things better done or best done on QPUs. And so I don't think one is replacing the other for sure. I think one is going to be augmenting the other.

There may be quantum-only deployments. I can see those happening as well. But like more and more data centers around the world, we announced KISTI in Korea, for example, and they have a GPU supercomputer that they've deployed. They wanted the quantum computer to work with it, sit next to it. And that's what we're deploying there. So yes, we're going to be at GTC. You'll hear more about what we're doing with them. But I see that as a long-term partnership.

Joe Moore: Okay. Helpful. Speaking of long-term partnerships, can you talk about the role of the U.S. government and obviously a big federal priority in quantum? How is that helping you guys?

Inder Singh: Yes. Look, I think there are many dimensions to that question for sure. So I'm going to take it one at a time. I think one that you're referring to is what DARPA is doing right now in terms of A, B and C sort of like I call the good housekeeping seal of approval process to say this modality, this technology is ready to be deployed. There are customers that, I think, in the government that depend on that and look at that for validation of the technology. We work very closely with DARPA, of course. And we've gone through A and B and C lies ahead. What we're starting to see -- I'm starting to see is customer engagement already start to happen with government customers because they've seen you go through A and B. They will continue to look at it, of course, and whenever C happens, they'll either have waited for that decision that to happen or maybe made up their choices even earlier.

It's good to see that. And it's good to be frankly among that process. The other is the QBI,and certainly, that allows multiple agencies to also coordinate and makes it easier. I think that -- and you may see this as well in what you look at, virtually every country that we have met with, I have met with is putting quantum up there among their top 5, if not top 10 priorities as a nation. And

yes, they want AI. Yes, they want the ability to do genomics and other things. And yes, they want quantum also.

So it's not just the U.S. It's like virtually every government in the Middle East and Asia. We've hired a new CRO, Scott Millard, he comes from Dell. He worked directly with Michael Dell and helped scale their AI business from like nothing to $20 billion-ish and more. You follow them even more closely, I'm sure. And he's bringing this very disciplined scientific approach to say, pursuit and capture, target the right customer, right employee. But I love about one thing he said was like, follow the AI money, follow the AI money because that's where you're going to need a quantum computer either now or in the future. And he was right. We're starting to see that play out.

Joe Moore: Okay. There's a lot of AI money.

Inder Singh: Evidently, yes.

Joe Moore: Seems to me. Okay. And then any other countries to highlight? You said other countries outside the U.S. are critical.

Inder Singh: Yes. I mean there isn't a country in the world that probably doesn't want to have something. As these machines become more powerful, and I mean like beyond 100 qubits, probably 256 qubits, maybe 10,000 qubits. At some point, I think we start seeing similar export control questions that we need to deal with, so we are starting from the get-go and saying, let's assume that regime is in place already. Let's ensure that we're selling a computer to a country where we would be able to like support that customer over a long period of time. So there are some countries we will just not do business in, as you can imagine. There are many countries, however, that are wanting it. We can do it. But even then, we'll check with the U.S. to make sure that this is going to be something that we can support for multiple generations of machines over time.

Joe Moore: Okay. You talked on the earnings call about demand exceeding supply. Can you talk about that a little bit and how you think about the supply chain to serve that demand?

Inder Singh: So like there is no manufacturing foundry process for classical computer machines. So we had to build our own factory. -- right? So all of the generation -- the five generations that I've talked about, including the current one, we build in Seattle. And so we design between College Park and Seattle and build and then deploy at a customer site. So we're a manufacturing company as it is. The demand we're seeing for the 100 qubit machine that's rolling out this year, is higher than we had anticipated based on prior demand projections for earlier-generation machines. I think the applications and the machine may be hitting the spot for many and more customers because they want them to do that.

So I started on September 5, I think. By September 10, we had already started deciding what we need to debottleneck either in our ability to manufacture or in our ability to deploy. Both are equally important. And again, the COO focuses a lot on that to make sure that we can meet the demand. And yes, absolutely, the demand for them for more tempo machines than arguably we can manufacture today. Thankfully, that facility in Seattle does have an extra floor that we also own with plenty of real estate if we had to expand. However, as we move from laser-based machines, which are prominent these days, to semiconductor and electronically controlled ion-traps, we can start moving into a classical semiconductor foundry with older nodes, not our own factory. So at some point, the manufacturing can be stopped in Seattle and moved over to an existing foundry.

Joe Moore: That's helpful. So I just have 1 more question and then we can open it to the audience, if there are any. Your cash balance, $3.3 billion. How do you feel about that? Do you want to raise more? The company does continue to be acquisitive. Just how do you think about the cash balance and the uses of that cash?

Inder Singh: Yes. Look, I think having a strong balance sheet, having cash, gives you a line of sight to being able to invest for the longer term. One of the pitfalls of all public companies is the 90-day cycle and the obsession with this year's financials. And like what will the world think if I spend more on R&D, et cetera, et cetera? The ability to have enough cash to think like multiple years not just for

acquisition or even just organic investment in R&D infrastructure and so on, gives you the confidence, but also it gives your customers the confidence that if they purchase something for you, you're going to be around for a while. In my experience, probably in yours, that's very, very important to have.

Joe Moore: And you are competing with IBM, Honeywell, people like that, that have a lot of resources as well?

Inder Singh: They do. Of course, they do. I respect IBM in everything that they do, right? And I want them to keep investing in this area. I hope they'll keep investing in this area because we need to have an industry. You can't just have an industry with one company. So IBM, of course, superconducting, their solution, of course, what's not to like. The- again, like what we're focusing on is a bill of materials that is less than $30 million. As the machine gets more powerful, we start making it on semiconductor base, it should get cheaper, not more expensive. Ours plugs into the wall. Superconducting needs a little bit of a grid.

Joe Moore: That is cool. Yes, I have to say, I just seen them facilitate. So it looks like it just plugs in just set right next to my desk.

Inder Singh: But the point is that when you think about a customer who wants to invest for the longer term and thinks they're getting the 100 now, the 256 then and 2 million eventually, they're going to be living with that investment choice for a long time. And with Quantum or as with anything, it's not just about the initial cost of the machine that you buy, it's also the running cost once you have it. And the cooling alone, keeping everything low temperature, helium 3, et cetera, et cetera, et cetera, TCO compare -- for an intra type thing to an equivalent like I call it, generic superconducting is not even in comparison in terms of TCO. Not everyone is thinking of a TCO always. But I do think that over time, that will become a compelling argument for why doing really, really high-end computing with lower energy consumption and lower cost, frankly, becomes an advantage.

Joe Moore: Okay. Great. Let me see if we have questions from the audience. Okay. If not, we can wrap it up there. Inder, thank you very much.

Inder Singh: Awesome. Thanks for having us. Really appreciate it.

Joe Moore: Thank you.