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IonQ, Inc. (IONQ)

Q2 2025 Earnings Call

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MANAGEMENT DISCUSSION SECTION

Operator: Good day and welcome to the IonQ Second Quarter 2025 Earnings Call. All participants will be in the listen-only mode. [Operator Instructions] After today's presentation, there will be an opportunity to ask questions. [Operator Instructions] Please note this event is being recorded.

I would like to turn the conference over to [indiscernible] (00:00:38) Investor Relations Director. Please go ahead.

Unverified Participant

Good afternoon, everyone, and welcome to IonQ's second quarter 2025 earnings call. My name is [indiscernible] (00:00:54) and I am the Investor Relations Director here at IonQ. I am pleased to be joined on today's call by Niccolo de Masi, IonQ's Chairman and Chief Executive Officer; Thomas Kramer, our Chief Financial Officer; Jordan Shapiro, our President and General Manager of Quantum Networking; Frank Backes, President of Capella; and Dean Kassmann, our Senior Vice President of Engineering & Technology.

By now, everyone should have access to the company's second quarter 2025 earnings press release issued this afternoon, which is available on the Investor Relations section of our website at investors.ionq.com.

Please note that on today's call, management will refer to adjusted EBITDA, which is a non-GAAP financial measure. While the company believes this non-GAAP financial measure provides useful information for investors, the presentation of this information is not intended to be considered in isolation or as a substitute for the financial

information presented in accordance with GAAP. You're directed to our press release for a reconciliation of adjusted EBITDA to its closest comparable GAAP measure.

During the call, we will discuss our business outlook and make forward-looking statements. These comments are based on our predictions and expectations as of today. Actual events or results could differ materially due to a number of risks and uncertainties, including those mentioned in our 10-Q that we have filed with the SEC today. We undertake no obligation to revise any statements to reflect changes that occur after this call, except as required by law.

Now, I'll turn it over to Niccolo de Masi, Chairman and CEO of IonQ.

Niccolo M. de Masi

Chairman & Chief Executive Officer, IonQ, Inc.

Good afternoon, everyone, and thank you for joining us. I'd like to begin today's call with an update from our board, which earlier today announced my appointment as Chairman. Peter Chapman, our previous Chairman, has now stepped down from his position at IonQ. I want to thank Peter for his long time service to IonQ over the last six years and wish him the very best in his retirement from IonQ.

I'm honored to receive this further vote of confidence in me by the board as IonQ continues to extend its leadership in quantum computing and quantum networking. As I take on these additional responsibilities, I am excited to continue executing on our strategic priorities and extending IonQ's leadership position in the quantum era. IonQ is experiencing incredible momentum. And I've never been more confident in our potential as we have look ahead.

With that, let's get into our latest results. We had an exciting quarter at IonQ. Revenue beat the top end of guidance by 15%, and we completed the largest capital raise from a single institution in the quantum industry, growing our net cash position by $1 billion. While our CFO will detail last month's investment from an affiliate of Susquehanna in greater detail, the $1 billion investment was closed at a premium to the prior market close. It is an endorsement of all we have achieved thus far and are poised to deliver in the coming quarters and years.

This quarter, we significantly expanded our global footprint, solidifying our role as the partner of choice by countries building their quantum economies. We signed an MoU designed to advance quantum computing in Japan with AIST's G-QuAT, the country's premier R&D center for quantum and AI. We were also recently named the Primary Quantum Partner by South Korea's KISTI Institute to build their National Quantum Center of Excellence.

In the US, we announced a $22 million deal to build the first commercial quantum computing and networking hub in America with EPB, a pioneering power and telecommunications company. Additionally, our partnership with the US government continues with our selection by DARPA to help inform quantum industry standards.

Beyond building these ecosystem partnerships, we are proving our value on critical commercial applications. For example, we launched a world-first collaboration with AstraZeneca, AWS and NVIDIA that demonstrated a 20x performance speedup for a key drug development workflow, showcasing practical quantum advantage. IonQ is also tackling critical national energy issues in partnership with Oak Ridge National Laboratory and the US Department of Energy. We have developed a new hybrid quantum classical computing approach that helps determine the optimal schedule for power generators to meet electricity demand at minimal cost. This accomplishment establishes a clear path for our systems to address the staggering 60% of energy currently lost due to grid inefficiencies.

As we continue shaping the global quantum landscape, my prepared remarks today will focus on two key areas: first, our tremendous strategic progress; and second, the strides we're making to attract the world's top quantum talent. I'm pleased to report that our strategy has progressed rapidly and gained considerable momentum this past quarter. By our acquisition of Lightsynq and planned acquisition of Oxford Ionics, we have created the most advanced, accelerated and powerful quantum computing road map in the world.

As we outlined on our webinar on June 9, we believe the combination of IonQ hardware and software prowess, Oxford's implementation of an ion trap on a chip provides the team IP technology momentum to achieve 800 logical qubits in 2027 and 80,000 logical qubits in 2030. We already have a manufacturing center in Seattle, and with the anticipated addition of Oxford Ionics in the UK, we have an additional site to expand both core computing R&D and manufacturing for EMEA.

We also announced the close of our acquisition of Capella in July, representing a significant step forward in recognizing our vision of a space-based quantum key distribution network. Frank Backes, CEO of Capella, will speak to this in more detail shortly. All of my colleagues, both veteran and new, are tremendously excited about the power of our talent density and combined capabilities. There is room for upside in our road map as we continue to integrate and operationalize our technologies. But best of all is the truly fantastic combination of low bill of material costs and near limitless extensibility. These attributes of IonQ's quantum computing approach are protected by over 1,000 patents and patents pending, ensuring winning unit economics at every stage of the quantum revolution.

Our road map assumes Oxford Ionics can reach 2 million qubits per chip. However, our ambitions are to continue increasing ion density and driving down costs on Oxford Ionics chips to someday have 10 million ion traps on a single chip. Then using IonQ's modular scaling approach, we will break the single processor barrier. By connecting two quantum processors via Lightsynq photonic interconnect technology, we plan to scale to tens of millions of logical qubits and deliver immense computational power.

IonQ's founders have been working on ion traps since the mid-1990s. We find that many announcements from competitors today reflect the progress our founders had made by 2010 or even as far back as 2001. Our lead enabled us to put our machines on all major hyperscaler public clouds in 2021. Today, we have developed applications aimed at delivering commercial advantage for customers and partners such as NVIDIA, AWS, AstraZeneca, Ansys, General Dynamics, Oak Ridge and many more. We are vertically integrated with decades of engineering improvements under our belt and decades more to come.

The beautiful thing about IonQ's quantum computers is they have worked since before we went public, and we've sold powerful systems for running real-world applications that customers are taking advantage of today. We expect our bill of materials cost to remain in the eight figures even when we have 80,000 logical qubits and millions of physical qubits.

We think constantly about unit economics, as the history of computing shows that smaller, energy-efficient, easily operable, low-cost computers always win. It is, of course, also enormously helpful to have the most powerful and useful computers as well, ones that have the highest fidelity and the lowest errors, so the most impactful applications can run on them.

We also made very tangible progress on delivering our #AQ 64 benchmark, the primary technical milestone we set for 2025, and all indications are that will be reached in the near term. Meanwhile, our quantum networking vision has expanded considerably this past quarter with the acquisitions of ID Quantique, Capella and Lightsynq.

We believe our quantum networking solutions will be table stakes, not only in a world where RSA encryption can be cracked by quantum computers, but also today to protect against the best resourced classical cybersecurity foes.

Capella extends both our quantum computing and quantum networking vision into space in a critical race to secure our nation against global bad actors. Our networking products are production-grade and are used by some of the world's household name financial services, telecom and government agencies. IonQ quantum networking offers the ultimate in communication security. It's based on a simple law of physics, any attempt to eavesdrop on the quantum channel disturbs the single, guaranteeing immediate detection. This isn't just a better firewall. It's a better paradigm that provides our customers with absolute certainty that their communications lines are secure, something no classical system can offer.

Moving on now to talent. I'll begin with the wonderful news that our Co-Founder, Dr. Chris Monroe, has assumed the role of Chief Scientific Advisor. He holds the current world record for remote entanglement generation and trapped ion technology, an achievement that opens the door to scalable quantum networks. He'll be spending significant time with our other world record holder in this area, Dr. Mihir Bhaskar, former CEO and Co-Founder of Lightsynq. Dr. Monroe, of course, also previously held a world record for qubit fidelity, a record currently held by Dr. Chris Ballance at Oxford Ionics. It's, of course, both exciting and delightful that IonQ now has world record holders in all our key scaling vectors collaborating on a daily basis to accelerate our momentum towards full fault tolerance.

On the networking side, we're also very pleased that ID Quantique's founder, Dr. Grégoire Ribordy, will remain in his role post close to continue building on his 20 years of leadership in quantum networking. Based in our Geneva office, Dr. Ribordy is a giant of the QKD space and has been shipping ever more impressive generations of his quantum networking equipment for over a decade now.

World-renowned quantum researcher and industry figure, Dr. Marco Pistoia, joined us from JPMorgan Chase, where he previously ran all technology research at the biggest bank in the world. Dr. Pistoia is uniquely able to support our global efforts in financial services from both quantum computing and networking perspectives.

Dr. Rick Muller has joined us to head up Quantum Computing Systems development. As many of you know, Dr. Muller was formerly the Director of IARPA, our nation's Intelligence Advanced Research Projects Activity organization, which is tasked with leading high-risk, high-payoff research for the intelligence community. Dr. Muller is also a distinguished researcher originally from Caltech with over 20 years of experience at Sandia National Labs.

Finally, I'm excited that Paul Dacier has joined the company as Chief Legal Officer and Corporate Secretary for IonQ. For over 26 years, Paul was the General Counsel of EMC Corporation, where he was instrumental in driving significant growth for the company. During his tenure, revenue grew from $170 million to $25 billion in 2016, employees grew from 750 to 68,000, and the company's market cap grew from $100 million to $55 billion.

As I've said before, I believe talent is the proverbial Warren Buffett weighing machine, most relevant to any company's long-term prospects. It's tremendously validating and an outstanding vote of confidence in IonQ's progress to have such towering world-class talent depart from highly respected roles to become our colleagues at IonQ.

With the support of our market-making talent, our customer ecosystem continues to grow as we build the world's leading quantum computing and networking offerings. We expect to derive our long-term success from our ability to land and expand with both our computing and networking solutions.

As a final comment, with the strongest balance sheet thus far in IonQ history, we have the ability to continue leading, pioneering and growing our ecosystem in both quantum computing and quantum networking worldwide.

I now hand you over to Jordan Shapiro, President and General Manager of IonQ Quantum Networking, who will touch on our networking highlights this quarter.

Jordan Shapiro

President & General Manager-Quantum Networking, IonQ, Inc.

Thank you, Niccolo. I'm excited to share that after announcing the formation of our quantum networking division last quarter, we are already making significant progress in positioning IonQ as a leading provider of the quantum Internet. The takeaways for today are as follows: One, quantum networking provides the ultimate in cybersecurity today for customers' intent on long-term security for data transmission, protecting against sophisticated classical threats from bad actors worldwide. Quantum key distribution, or QKD, is the only provably secure protection against potential future hacking attempts made by quantum computers.

Two, IonQ's QKD products are the only ones in the world to have any form of formal security certification. Three, IonQ is the only company offering commercial quantum networks at scale today that leverage quantum entanglement, meaning they can be used to connect quantum computers and other quantum devices. Four, IonQ's quantum computers are the only systems that are being developed with quantum networking built in.

As Niccolo mentioned, our QKD products are already being used in production by leading governments, financial institutions, telecom providers, energy companies and enterprises. Customers buy QKD because it is the only technology that uses the principles of quantum physics to ensure that no one can steal their data. Software techniques like post-quantum cryptography algorithms, while offering some protection, are not provably secure. Over time, their security is decreasing and vulnerabilities are rising.

Our customers trust IonQ because our QKD products are already manufactured at scale, fit into a one-unit-high rack mountable server and are used every day to protect information across the globe. Moreover, our cutting-edge Clavis devices produced by ID Quantique received the world's first ever security certification for QKD earlier this year via South Korea's National Intelligence Service.

Meanwhile, IonQ is the only company building the quantum Internet at commercial scale. We are working with customers to bring all forms of quantum edge devices onto our quantum networks, from security endpoints to quantum computers. IonQ customers will soon be able to cluster quantum computers for extremely powerful processing, send ultra secure data from one quantum computer to another, and seamlessly transmit data from quantum sensors to quantum computers.

A key milestone in this road map is our ability to build quantum networks over standard telecom fiber, which requires technology to convert wavelengths from these quantum devices to wavelengths compatible with classical networks. We are working on that technology with customers today and expect to be the first company in the world to achieve it. Across all dimensions, the infrastructure for the quantum Internet is being built here at IonQ.

Now, I'd like to hand the call over to Frank Backes, CEO of Capella.

Frank W. Backes

Chief Executive Officer, Capella Space Corp.

Thank you, Jordan. As both Jordan and Niccolo have highlighted, we are witnessing a revolution in the global computing and networking landscape, driven by the maturation and deployment of quantum technologies. Today, I'd like to offer the perspective of the space sector on how quantum-enhanced space systems and sensors are poised to transform the future of computing and networking infrastructure, integrating advanced capabilities into everyday applications.

Newly a part of IonQ, Capella is focused on taking quantum technologies into orbit. We design, manufacture, own and operate a proliferated constellation of low earth orbit satellites that we plan to outfit with quantum communication devices, quantum sensors and one day quantum computers. We believe that our quantum-enabled satellites will be highly differentiated in the market, paving the way for a new generation of ultra secure, extremely powerful computing and networking infrastructure with a global footprint.

Capella has already proven we can put production-grade satellites into orbit. Today, we are producing streams of earth observation data with a constellation of satellites that operate day or night through clouds and in other challenging conditions, bringing critical information to leading defense, government and enterprise customers.

IonQ will be expanding Capella's proliferated low earth orbit constellation to meet global demand. The integration of IonQ technologies means we will be able to collect and process data in never before seen ways and transmit that data in a way that is provably secure even from the threat of quantum computers. We are committed to pioneering the new frontier of quantum technologies in space, providing our customers with an accelerated path to secure, high-performance and resilient solutions for the future.

Now I'd like to hand the call over to Thomas Kramer, IonQ's CFO.

Thomas G. Kramer

Chief Financial Officer, IonQ, Inc.

Thank you, Niccolo, Jordan and Frank. It has been truly an exciting quarter on the commercial front, and our financials are no exception. Let's walk through this quarter financial results in more detail.

As Niccolo mentioned, we had a fantastic quarter, recognizing revenue of $20.7 million, beating the high end of our guidance by 15%. In addition, we are making new investments to accelerate our road map as well as entering new segments of the market, and we expect to continue to invest in the ecosystems that support our customers. Accordingly, we saw an adjusted EBITDA loss for the second quarter of $36.5 million, compared to a $23.7 million loss in the prior-year period.

To understand the key drivers behind that number, let's turn to our expenses. Total operating costs for the second quarter were $181.3 million, up 201% from $60.3 million in the prior-year period, but within our plan for the year. To break this down further, our research and development costs for the second quarter were $103.4 million, up 231% from $31.2 million in the prior-year period. Recall that we are investing heavily in R&D and growing our R&D head count to support our road map and customer commitments.

Our sales and marketing costs in the second quarter were $10.9 million, up 77% from $6.1 million in the prior-year period. This increase was due to us growing both our marketing and sales teams as we continue investing in our commercial efforts. Our general and administrative costs in the second quarter were $48.1 million, up 269% from $13.1 million in the prior-year period. These increases were primarily driven by an increase in professional

services and payroll-related expenses. All of this resulted in a net loss of $177.5 million in the second quarter, compared to a $37.6 million net loss in the prior-year period.

Accounting for warrants can be confusing, so we have always pointed out the impact they have on our results. This Q2 loss includes a noncash loss of $39.6 million for the second quarter related to the fair value of our warrant liabilities. This is a pure accounting artifact that is not representative of the operating performance of our business.

These results also include growth in stock-based compensation expense related to our head count growth, which was $99.2 million for the second quarter compared to $21 million in the prior-year period. This elevated stock-based compensation expense was due primarily to incentives issued to newly acquired and hired employees.

Turning now to our balance sheet. Cash, cash equivalents and investments as of June 30, 2025, were $656.8 million. As we announced previously, in July, we raised $1 billion in an equity offering priced at a 25% premium above our closing price for the prior trading session. This investment, to our knowledge, is the largest investment by a single investor into quantum computing and networking, and we are honored to be the recipient.

The equity offering also included seven-year warrants at $99.88 per share, a strong indication of confidence in IonQ's longer-term prospects. Our pro forma cash balance as of July 9, 2025, was $1.6 billion, making IonQ the most well-capitalized pure-play quantum provider in the market today.

Continuing now to our financial outlook. We are increasing our revenue guidance for the full year 2025 to be between $82 million and $100 million, and expect revenue for the third quarter to be between $25 million and $29 million.

Last quarter, we projected an adjusted EBITDA loss of $162 million for the full year 2025. Pending the close of the Oxford Ionics acquisition, we anticipate that integration and our continued investments into accelerate our road map will result in an increase to our cost base for the year. We envision this will widen our adjusted EBITDA loss up to 30% or a total of $211 million.

Now back to you, Niccolo.

Niccolo M. de Masi

Chairman & Chief Executive Officer, IonQ, Inc.

Our customer ecosystem now includes not only the winning quantum computing road map, but also the clear global leader in quantum networking. We, in fact, expect our unit economics advantage in the fully fault tolerant era to be 1 to 2 orders of magnitude lower than competitor efforts. IonQ has commercialized considerably faster than start-ups who do not have our 30-year heritage. We were first to operate on all three of the Google, Amazon and Microsoft public clouds five years ago. Looking forward, we believe our unit economic advantages will underpin IonQ's long-term market share leadership.

IonQ also intends to accelerate its investment in our application road map, which we outlined in our June 9 webinar. Given our unparalleled unit economics at scale, we have a clear opportunity in the coming years to profitably address long hypothesized quantum classics such as the traveling salesperson problem as well as Shor's algorithm.

I'll now turn this over to the operator for Q&A.

QUESTION AND ANSWER SECTION

Operator: Thank you. We will now begin the question-and-answer session. [Operator Instructions] First question comes from Quinn Bolton with Needham & Co. Please go ahead.

Quinn Bolton
Analyst, Needham & Co. LLC

Q

Hey, guys. Congratulations on all the progress again this quarter. I guess, I wanted to start with the revenue that came in better than expected. That's great to see. You guys are diversifying the revenue stream now with the quantum key distribution, quantum networking efforts. And I was wondering if you could give us some sense, how much revenue are you starting to generate from the non-quantum computing efforts in the business. And then I've got a follow-up.

Niccolo M. de Masi
Chairman & Chief Executive Officer, IonQ, Inc.

A

So, thank you for those words and a great question. We are continuing to deliver on our plans for the year, and the beat on this quarter was primarily due to two projects for existing customers where we've been able to accelerate the pace of implementation.

Quinn Bolton
Analyst, Needham & Co. LLC

Q

And were those mostly on the quantum computing side or could that include, like, the Air Force Research Lab on quantum networking? Just some sense on the mix. Is it still predominantly quantum computing?

Niccolo M. de Masi
Chairman & Chief Executive Officer, IonQ, Inc.

A

It's an excellent question. But as we've said in previous quarters, many of these projects, and particularly the AFRL one, contains both sides of the coin. It's quantum computing and networking.

Quinn Bolton
Analyst, Needham & Co. LLC

Q

Got it, got it. And the second question is you guys on the – I guess, in June, announced the acquisition of Oxford Ionics. You were selected for the DARPA Quantum Benchmarking program back in early April. And I guess, as you guys have pivoted the road map now or accelerated the road map with Oxford Ionics, can you just sort of address how are you feeling about progressing from Stage A to Stage B in QBI?

Niccolo M. de Masi
Chairman & Chief Executive Officer, IonQ, Inc.

A

Yeah. No, I'm happy to take this. It's Niccolo. Well, look, the fantastic thing about the talent density and the technology that we've assembled at IonQ is that actually Oxford Ionics itself was also put into the DARPA QBI initiative earlier this year. So, IonQ is in a fantastic position overall. Both ourselves and our announced acquisition, obviously, are considered fantastic businesses in their own right. On a combined basis, we think it's, of course, an even stronger offering.

So I think it's safe to say that we continue to progress as two shots on goal, if you will, until the acquisition closes. But once it closes, we'll be progressing as a single unified road map that we think is extremely powerful. When you think about not just how many logical qubits we're going to have pretty soon, but also the unit economics involved, we feel very good about our prospects both in Phase B and ultimately in Phase C.

Quinn Bolton
Analyst, Needham & Co. LLC
Q

Excellent. And maybe last, Niccolo, just any update on the timing of the close on Oxford Ionics? Can you just give us an update where you are on any regulatory approvals that you need? Do you still expect to close that transaction later in calendar 2025?

Niccolo M. de Masi
Chairman & Chief Executive Officer, IonQ, Inc.
A

Yeah. We absolutely do still expected it to close later. This is, of course, subject to regulatory approval in the UK. And that is proceeding constructively, but we are not able to give a precise date on this call, although I think it's safe to say that both Oxford and IonQ, of course, look forward to a closing as soon as possible.

Quinn Bolton
Analyst, Needham & Co. LLC
Q

Excellent. Thank you.

Operator: The next question comes from Troy Jensen from Cantor Fitzgerald. Please go ahead.

Troy Jensen
Analyst, Cantor Fitzgerald & Co.
Q

Hey, gentlemen. Congrats on all the progress and milestones here.

Niccolo M. de Masi
Chairman & Chief Executive Officer, IonQ, Inc.
A

Thank you.

Troy Jensen
Analyst, Cantor Fitzgerald & Co.
Q

Hey. So, Niccolo, maybe for you, first of all, 80,000 logical qubits by 2030. At that level, can you just talk about what type of encryption are you guys cracking? Or how advanced is the quantum computer at that point?

Niccolo M. de Masi
Chairman & Chief Executive Officer, IonQ, Inc.
A

Yeah. I mean, Troy, I think we have the leading logical qubit road map bar none on a global basis. And I say that not only because of the sheer number of logical qubits, but also the cost of a machine of that size, which is very low compared to competitors you might run into, Troy, that probably will have machines that would cost 10 or 100 times more for a similar number of logical qubits.

We published an application road map on June 9 on our webinar, and we showed you every year on a road map what we can do from an application perspective. So we're showing what we can do even at 1,500 logical qubits.

We're showing what we can do at 10,000 logical qubits. And we're showing we can do, of course, at 80,000 qubits.

What I think I would highlight is these are just the known application areas that we've identified that we already are working on. As you've seen throughout the compute space, Troy, from CPUs to GPUs to now our QPUs, most of the upside in value comes from problems that you haven't thought of addressing yet. And it comes – it kind of emerges, if you will, as an emerging phenomenon as you start solving problems with ever more doubly exponentially powerful machines, as IonQ has.

So I think there's tremendous upside in the app road map from quantum AI and quantum machine learning in particular. We've already made some industrial AI applications as far back as World Quantum Day on April 13, 14 earlier this year. We're continuing to make progress with a number of partners, not just in the AI space, but, of course, the drug discovery space. You saw announcements from us on protein folding as well as, of course, with AstraZeneca.

You've seen announcements with partners looking at the energy grid and optimizations there. And of course, we work closely with the Electric Power Board of Tennessee in Oak Ridge National Labs already. So I think it's safe to say that we've got a commanding lead in solving useful applications today, even on just 36-qubit systems. Imagine where we're going to be in the next year, year-and-a-half, two years as we move to 256 qubits and, at some point soon, 10,000 physical qubits in combination with our friends at Oxford Ionics.

It unlocks a whole world, frankly, of value add for every industry category we're in already today. We think that you can start to do useful Shor's algorithm work probably in the 2027 time horizon if you look at our road map, low thousands of logical qubits starts to become interesting for us on the encryption cracking front. The traveling salesperson problem, I believe, is about 1,000 logical qubits as well. And so a lot of work in logistics optimizations will get unlocked in the next 18 months or so.

And obviously, I think [indiscernible] (00:34:10) Troy, our app team is growing as quickly as we can find the talent. We recognize that it's a unique set of skills to be able to run quantum applications on our machines and then translate those for each of the verticals that have slightly different problems that we've gone after. But as I mentioned in my prepared remarks, it's a key investment area for us. So we recognize that the path for growth for us goes right through our applications in all these different areas.

Troy Jensen
Analyst, Cantor Fitzgerald & Co.

Q

Great answers. Thank you for that. Just like a follow-up on kind of couple of things together here. Just can you talk about just the acquisitions you've done? I think it's like six now, integrating all these businesses. I've seen companies struggle doing one or two acquisitions. You guys doing a lot at the same time here. You got lot of money now on your balance sheet. Thoughts on kind of more consolidation? Or if you could just address that topic, that'd great.

Niccolo M. de Masi
Chairman & Chief Executive Officer, IonQ, Inc.

A

Yeah. I mean, look, we have – a couple of things. So I've made more than 50 acquisitions in my career as a public company leader across over a dozen public companies. And so I'd like to think we get better at these things over time. You heard from Frank Backes, who is actually on this call, Frank and I were very focused on cultural fit early on. We're all professional managers of our firm. We both want to make the industrial logic work. It's the

same with Oxford Ionics and Lightsynq and our friends at Qubitekk and Entangled Networks from earlier this year and last year.

And what we're finding actually is one plus one doesn't just equal three, it equals 13 or 30. And there is mutual curiosity at when we merge with new entities. Everyone is aligned and, of course, taking stock in an enlarged IonQ. And so, everyone is able to both work together to rally on our biggest revenue opportunities, but also to continue growing their business in its own right.

So we're investing in the infrastructure. We need to make sure integrations go well. We've got experience on it, whether it's IT through to the actual technical road maps and, of course, the soft side, if you will, of making sure that people have similar cultural definitions and understandings of success. But honestly, we don't lose any sleep about this because there is so much to gain together. The teams are proactively excited and reaching out to one another and doing the integration, honestly, on their own in a lot of ways.

So yeah, I mean, look, we will continue to monitor the landscape. We now have two big growth vectors for our business, right, computing and networking. Networking, we're doing both on the ground, but also ground to space, space to space and space to ground, the most vulnerable pieces of our communications infrastructure.

And I think we're finding that new opportunities are unlocking themselves, frankly, every week. We have put together a unique asset and business here, right? No one else in the world can do networking on the ground, in space and computing. And right now, sovereign nations in the friendly world want more of everything that IonQ has to offer. And so we're supply limited, not demand limited, if that makes sense.

Troy Jensen
Analyst, Cantor Fitzgerald & Co.

Q

Yeah. Great. All right, guys. Keep up the good work.

Niccolo M. de Masi
Chairman & Chief Executive Officer, IonQ, Inc.

A

Thanks, Troy.

Operator: The next question comes from Joe Moore with Morgan Stanley. Please go ahead.

Joe Moore
Analyst, Morgan Stanley & Co. LLC

Q

Great. Thank you. I wanted to ask about Chris Monroe coming back. I am getting kind of questions about it. It seems like it's great news. He's, obviously – you characterized his capabilities, but it caused some consternation when he left. And just maybe if you could address, is there anything to sort of read into the fact that he left and then came back now? Thank you.

Niccolo M. de Masi
Chairman & Chief Executive Officer, IonQ, Inc.

A

Well, I'd like – look, it's Niccolo. I'd like to say that there's something to be read into all of the tremendous talent that's joined IonQ in the past quarter. So, whether it's Rick Muller or Marco Pistoia, Chris Monroe, Paul Dacier, we've also added a long list actually of VPs to the business in the last quarter in areas from business development through to actually acquisition integrations. And so, I think everyone is recognizing that A's want to work with A's and talent success helps attract yet more of it.

I think Chris, spending more time with us is a tremendous vote of confidence, not just in our computing road map, but also our networking road map. I think it speaks very highly of what he thinks about Chris Ballance and Mihir Bhaskar as well. And I think you're seeing that you've got four world records, if you will, held by individuals who are all at IonQ, both on the fidelity side as well as the networking side. And they want to continue pioneering the future together right here at IonQ, right?

So we're excited to have everyone. We welcome ever more world-class talent. I think we've attracted some in the organization that haven't been announced today, but continue to join us from nation's finest laboratories. And on a global basis, we're always on the lookout for the very best, most experienced, everywhere from networking to computing to applications.

So I'd say, look, in summary, it is I think a vindication of our strategy. We're excited to have Chris here and we're excited to have everyone else that we've announced today, all working together, because we recognize that we're at the intersection of pioneering technology that has never done what we've done in the last decade or two. And the next 5 years, 10 years has even more to be built together.

Joe Moore
Analyst, Morgan Stanley & Co. LLC

Q

Very helpful context. Thank you.

Operator: The next question comes from Richard Shannon with Craig-Hallum. Please go ahead.

Tyler Anderson
Analyst, Craig-Hallum Capital Group LLC

Q

Hi, everybody. This is Tyler on for Richard Shannon. I was wondering can Lightsynq be ran at room temperature for compute or sensing purposes? And if so, what is the plan for those? And I'll let you go from there. And I have a follow-up. Thank you.

Dean Kassmann
Senior Vice President-Engineering & Technology Division, IonQ, Inc.

A

This is Dean. So the overall technology that Lightsynq has in their quantum memories does require cryogenic – kind of mild cryogenic temperatures to be able to achieve. And so they're similar to the cryogenic enhanced vacuum systems that are used in other trapped ion systems. And so it's not super exotic, but it does require lower temperatures to be able to realize that quantum memory.

[indiscernible] (00:41:09)

Niccolo M. de Masi
Chairman & Chief Executive Officer, IonQ, Inc.

A

We're always developing the next generation of all of our hardware. So as Dean put it, mild cryogenic we hope becomes milder, and we hope the size also of these repeaters shrinks and it should every generation also.

Tyler Anderson
Analyst, Craig-Hallum Capital Group LLC

Q

Yeah. And then just for you and everybody else, I do understand that diamond memories tend to be cryogenically cooled. I was just wondering if it wasn't cooled, would it be used for compute or sensing or if that always had to be? Okay.

And then when you're considering the combination of Oxford Ionics and IonQ, what is the plan with these two different processors? Is this – are we keeping these separate? Or are we putting these together? And then what are the goalposts for Emergence? And if you can comment on Iceberg Quantum and how that relates to QBI?

Dean Kassmann
Senior Vice President-Engineering & Technology Division, IonQ, Inc.

A

So, Tyler, on the two different technology stacks, we are absolutely integrating them together. As we look at our integration plans moving forward, right, being able to what Niccolo indicated is putting more qubits on a chip as well as the technology for the quantum memory and doing photon capture on those chips to be able to network them together, that is absolutely coupled technology on the computing side as we kind of scale out. Those different pieces come in at different parts of our road map as we move out to thousands and millions of qubits, but they're definitely intertwined as we move forward.

Tyler Anderson
Analyst, Craig-Hallum Capital Group LLC

Q

Okay. Thank you. And I'll now hop back in the queue for now.

Operator: Thank you. The next question comes from David Williams with Benchmark. Please go ahead.

David Williams
Analyst, The Benchmark Co. LLC

Q

Hey. Good afternoon, everyone. And congrats on all the really great progress. And I guess maybe first, Niccolo, can you kind of run through, just kind of given how much progress you've had, all the exciting things that's going on at IonQ? Is there a way you'd kind of rank order what gets you most energized and maybe where you're most excited?

Niccolo M. de Masi
Chairman & Chief Executive Officer, IonQ, Inc.

A

There's so much goodness going on in the last six months, I don't actually think of it that way. I think that we're in the business of quantum in every sense. And quantum for us is both on the compute side and the networking side. And we care about having the leading technical road map on both sides of the house. We also care about being the leading commercialization player or partner, if you will, on both sides of the house.

And we believe that the interconnection of the two provides a moat that is very difficult to counteract or surmount if you are a competitor of ours. The fact that we can build the world's best quantum networks, quantum computers and we can build the repeaters and we can maintain information security as it's transmitted between quantum computers gives us a phenomenal range of solutions to sell to nations and Fortune 100 companies.

If you look at the acquisitions we made and the talent we've attracted, you can see that we are investing on both sides of the house to do exactly what I said. We want to make sure we always have the leading technical road map, the best unit economics and to make sure we continue to win market share. And we'll continue to invest to achieve all three or four of those objectives.

I've been delighted with every acquisition that we've consummated since I assumed this [indiscernible] (00:44:46) position, and I've been really delighted with the acceleration in global technical talent and talent in general that we've been able to attract. And we're just getting started here, right? I've been in this role for six, seven months on a full-time basis. And so I think it bodes very well for the future. We want to carry on doing what we've done in the last two or three quarters – in the next two or three quarters and the next 20 or 30 quarters.

The reality is, I think people tend to underestimate how much progress we are making on a monthly, quarterly and annual basis. They tend to underestimate the progress that quantum computing at IonQ is making because of the double exponential nature of improvements in every generation. And they underestimate the need for quantum networking because of the threats, if you will, from not just bad state actors in the classical sense, but because there are bad state actors that are working on so-called Q-Day and cracking RSA2048. And so, both sides of our business, on the ground and up in space, are poised I think to have inflection points in the coming quarters and years.

[0P2YK7-E David Wlliams Q

Great. Fantastic color there. And then maybe just for you, Thomas. Given these acquisitions, how should we think about the OpEx trends and maybe the breakeven point there? Is there a potential maybe to accelerate the path to profitability maybe faster than what you thought previously, just kind of given the different revenue bases and opportunities you have in front of you?

Thomas G. Kramer A
Chief Financial Officer, IonQ, Inc.

I think that our primary objective is to accelerate the road map and also to find and delight customers, because this is a giant space and whoever gets there first, and we are the leading contender, will reap huge rewards. We, obviously, will take great care when we decide what to spend on. But right now, we've been able to contract our road map so much that this will save us a lot of money in the long term.

David Williams Q
Analyst, The Benchmark Co. LLC

Thanks so much. And best of luck on the quarter.

Niccolo M. de Masi A
Chairman & Chief Executive Officer, IonQ, Inc.

Yeah. Look, I'd add to that. I think Thomas is spot on, right? I mean, when you look at competitor announcements that have come out subsequent to our June 9 webinar, you've seen big companies putting out announcements about being five years behind us. And I think they're the closer competitors, honestly, in the quantum computing space. It is a commanding lead that we have been able to build in the last six or seven months.

Operator: The next question is from the line of Kevin Garrigan with Rosenblatt Securities. Please go ahead.

Kevin Garrigan Q
Analyst, Rosenblatt Securities, Inc.

Yeah. Hi, all. Let me echo my congrats on all the progress. Hey, going off of Troy's acquisition question, any other areas of the business you can point out where you might still be missing a piece of puzzle?

Niccolo M. de Masi
Chairman & Chief Executive Officer, IonQ, Inc.

A

Well, look, I mean, I always like to jokingly say that although I'm a physicist, I never finished the PhD. And so our superpower here is I'm not trying to defend my PhD dissertation at any point of the week. I'm happy to defend the PhD dissertations of our fantastic engineering leadership and physicists that we've both hired and acquired, right? And so we're in the early ages and era, if you will, of the quantum revolution, which is the biggest revolution in computing and networking, I think, since computer networking got going, frankly, 80 years ago.

And so, as we become a bigger business, as Thomas rightly pointed out, where we see opportunities to bring road maps in and move things from – moving things to the left effectively in our road maps, we'll always look at that. We have a fully-fledged vision, obviously, for the quantum Internet that we talked about on the last couple of calls. On the quantum Internet someday will be not only quantum sensors that are capturing information, but quantum computers that are processing that information, performing calculations and quantum networks that allow you to transmit that information and keep it safe throughout the whole system. And so, that overall vision is a North Star, if you will, for us. And we intend to be the leader in the quantum Internet and all of its components as that plays out and as there's an acceleration in spend, not just from governments, but from Fortune 100 and Fortune 1000 companies ultimately.

Kevin Garrigan
Analyst, Rosenblatt Securities, Inc.

Q

Okay. I appreciate that color. And then as a follow-up, I'm still getting a lot of investor questions regarding the intersection of quantum and AI. So wondering if you can give some details on the collaboration with AIST that is focusing on real-world quantum AI applications and what some of those applications are?

Niccolo M. de Masi
Chairman & Chief Executive Officer, IonQ, Inc.

A

Well, let me talk more generally than just on AIST, right? So, if you think about what we announced back in April at World Quantum Day, we showed real-world industrial AI examples in categories like reducing defects in steel and, of course, training generative adversarial networks to learn faster. And we're continuing to see great progress there, right? I mean, you can actually look at most of our application successes this year through the lens of machine learning. Whether you want to call that AI or branded AI, it depends both up to you and on the specific application. But I would argue that when you have 20x speedups in computational drug design with NVIDIA, AWS, AstraZeneca, you're very much demonstrating machine learning and AI through our quantum systems.

The pieces of problems that we're able to take down today and deliver quantum advantage on continue to expand. They are still pieces of problems and workflows as opposed to a one-stop shop for a workflow from soup to nuts from start to finish. And so you can see that we're collaborating with hyperscalers and the world's biggest GPU makers because we realize that together we can deliver the one-stop-shop soup to nuts solution for companies in many verticals, right?

And I think you'll continue to see that, frankly. So you'll see us partnering with industry expertise. You'll see us partnering with GPU and cloud leaders. And you're also going to see us expand the lens of subsectors that we're going to work in from logistics to a fair amount of pharma into areas like financial services. We hired Marco Pistoia, who we're honored is working with us not only because he's generated a lot of IP himself, but also because, of course, he knows more about the financial services industry and quantum computing and quantum networking than probably anybody on the planet, right?

And the great thing about financial services is that, ultimately, you don't need a lot of infrastructure to address really valuable problems really quickly. I talked back at the IPO about financial services and the fact that there's whole chunks of it that have been postulated for a decade or two to be perfect for quantum computers. We are now at the point whereby our quantum computers are big enough to start delivering that quantum advantage at scale and at speed, frankly.

And so we are investing across the verticals that you've seen in our investor deck and we've talked on prior calls, but we continue to look for new verticals. And the delightful thing about our quantum computers is we're finding they can deliver better answers earlier every time we approach a new vertical than was previously forecast, right? And that'll continue to be a trend here. I think early achievements, early signal detection, if you will, in every area, I think is going to be a hallmark of what you see in the coming quarters from us.

Kevin Garrigan
Analyst, Rosenblatt Securities, Inc.

Q

Got it. That makes sense. Okay. Great. I appreciate it.

Niccolo M. de Masi
Chairman & Chief Executive Officer, IonQ, Inc.

A

Thanks, Kevin. Thank you.

Thomas G. Kramer
Chief Financial Officer, IonQ, Inc.

A

Thanks, Kevin.

Operator: Thank you. [Operator Instructions] The next question is from the line of Richard Shannon from Craig-Hallum. Please go ahead.

Tyler Anderson
Analyst, Craig-Hallum Capital Group LLC

Q

Hi, guys. Thank you for taking my follow-up. So how many QPU deployments are there between IonQ and Oxford Ionics worldwide? And considering you're securing data in flight, is there any plan to secure stationary data as well?

Niccolo M. de Masi
Chairman & Chief Executive Officer, IonQ, Inc.

A

Yeah. So I think the short answer is we have sold all the systems that we've ever made at IonQ, and we continue to do that. Oxford, I think, has sold a system that has been publicly disclosed. I think it's safe to say that there is incredible demand for our 256-qubit system that's around the corner and our 10,000 qubit systems on a combined basis.

The quantum networking question you're asking about securing data on the ground, absolutely, right? I'll turn this over to my colleague, Jordan, but we're obviously selling entangled quantum networking solutions and QKD solutions every day, and we've announced a number of the larger ones. But our businesses have already got quantum networks deployed in places like Tennessee and Korea, and we continue to see incredible demand from household name financial services and telecoms, organizations that recognize, as I jokingly like to put it, our

quantum networking solution customers are the ones that are not in the news for data breaches, right? And so I think as people recognize that increasingly, we will see the demand and market penetration skyrocket, honestly. And as soon as there is a whiff of a bad state actor, if you will, making any progress whatsoever on RSA2048 cracking, I think you're going to see orders of magnitude step changes in networking demand.

Jordan Shapiro A
President & General Manager-Quantum Networking, IonQ, Inc.

That's right. And that's data in transit, not data at risk, but that's where QKD offers a massively powerful advantage for our customers in defending. And it's a particularly weak point in their security architectures today and one that we can help them shore up.

Tyler Anderson Q
Analyst, Craig-Hallum Capital Group LLC

Awesome. Thank you, guys. And then with the combined companies between Oxford Ionics and IonQ, is there a way to run all of these gates in parallel? And how many of these – could you effectively run the whole system in parallel using the electrical control? And what does that effectively do to your gate speed? And then also, I just want to say, I'll get off after this, but congratulations on the road map with the logical qubit counts. That's definitely [indiscernible] (00:56:09).

Niccolo M. de Masi A
Chairman & Chief Executive Officer, IonQ, Inc.

Awesome.

Dean Kassmann A
Senior Vice President-Engineering & Technology Division, IonQ, Inc.

Thanks, Tyler.

Niccolo M. de Masi A
Chairman & Chief Executive Officer, IonQ, Inc.

Well, thank you. I'm going to turn this over to Dean. But I think the good news is the short answer is gate speeds are going up considerably as part of this road map and acquisition and merger. But, Dean, over to you on the electrical control.

Dean Kassmann A
Senior Vice President-Engineering & Technology Division, IonQ, Inc.

Yeah. Thanks, Tyler. So, overall, the electronic gate control and the overall move from kind of the 1D architecture to the 2D and just the inherent way those electronic gates work allows for just a massive, I would say, increase in parallelism that can occur as you execute 2-qubit gates. And so you can expect overall throughput to really go through a step change as you go and introduce high-density kind of 2-qubit electronic gate control.

And this is coupled with what Niccolo was saying is that there – it's also just inherently faster from a gate speed perspective. And so when you're working with the qubits in those qubit-based traps, they're just simply faster. And so those two coupled together represent just a massive, I would say, overall throughput increase that really just drives also the unit economics that Niccolo was also mentioning before.

Tyler Anderson

Analyst, Craig-Hallum Capital Group LLC

Q

Got it. Thank you, guys.

Niccolo M. de Masi

Chairman & Chief Executive Officer, IonQ, Inc.

Thanks, Tyler. Thank you. All right. Well, I'm going to wrap up by saying that we're pleased to have announced another quarter of progress here at IonQ. Just to recap a couple of our highlights. Firstly, we closed our quantum networking acquisitions of Lightsynq and Capella and announced the pending acquisition of Oxford Ionics, which accelerates our expected compute road map. We will achieve 800 logical qubits in 2027, 80,000 logical qubits in 2030 and expect hundreds of thousands, if not millions, of logical qubits beyond that.

Secondly, we're attracting and hiring world-class talent from all walks of expertise, which we believe is the greatest indicator of long-term success that we can provide. Thirdly, we raised $1 billion in additional capital to enable IonQ to maintain its decisive lead as a full-stack quantum computing and quantum networking company. Fourth, we expanded our global footprint with key government and commercial partnerships, including MoUs with Japan's AIST G-QuAT and South Korea's KISTI, and a world-first partnership with AstraZeneca, AWS and NVIDIA, delivering a 20x drug development speedup. We're investing to proliferate our satellite constellation with a road map to quantum networking and computing in space. And last but not least, we beat the high end of revenue guidance for Q2 by 15%.

We believe the steps we have taken in 2025 to date will ultimately set the stage for IonQ's long-term leadership in both quantum computing and networking, both of which we believe to be crucially important to the future of our country's national security and national economic security. With our closed and proposed acquisition and well-fortified balance sheet, we believe we have a clear path to millions and eventually tens of millions of qubits, leading to computing power previously unimaginable from a classical standpoint.

Join us now and be the first to gain commercial advantage in your industry by leveraging the massive power of our quantum networks and computers. Thank you all for your time today, and have a great week.

Operator: Thank you. The conference has now concluded. Thank you for attending today's presentation. You may now disconnect.