

**IonQ Chairman & CEO Niccolo de Masi**  
**Congressional Joint Economic Committee Hearing**  
**Frontier Technologies, Industrial Efficiency and Pro-Innovation Policies**  
**Tuesday, Nov. 18, 2025**

Chairman Schweikert (SHWYkurt), Vice Chairman Schmitt, Ranking Member Hassan (HASSen), Vice Ranking Member Beyer (BYer), and Members of the Committee, thank you for this opportunity to discuss the promise - and importance - of quantum technology to the future of our nation's economic and national security - and why it must be understood not only as a scientific pursuit, but as a new economic engine for the United States.

**Introduction**

I am Niccolo de Masi, Chairman and Chief Executive Officer of IonQ, a quantum computing company founded in 2015 in College Park, Maryland. Our roots trace back to Dr. Chris Monroe's pioneering research at the University of Maryland and Duke University. We build quantum computers using trapped-ion technology, a platform known for its accuracy, scalability, and energy efficiency.

Quantum computing represents one of the most profound technological shifts of this century. Where classical computers rely on billions of tiny transistors that process information in binary form - ones and zeros - quantum systems manipulate information at the atomic level. Using quantum bits, or qubits, they can represent multiple states simultaneously, exploring vast solution spaces that would take the most powerful supercomputers today millions of years to evaluate.

This ability is already changing the trajectory of how we approach materials science, drug discovery, logistics, and secure communications. For decades, computational power has been the fuel for innovation. Quantum extends and dramatically accelerates that compute curve - and is expected to compress research timelines, unlock new physical limits, and amplify the capabilities of artificial intelligence.

**Where the Industry Stands**

Quantum has entered a decisive phase of acceleration. After years of steady foundational research, the field is now characterized by rapid technological breakthroughs and an unprecedented wave of public and private investment. Governments around the world have collectively committed more than \$50 billion dollars to national quantum strategies - funding not just research, but full-scale infrastructure, supply chain development, and workforce training.<sup>1</sup> In the United States, quantum is now formally listed by the White House alongside AI and semiconductors as a core national R&D priority, signaling its strategic importance for competitiveness, productivity, and security.<sup>2</sup>

Momentum is visible across both policy and industry. Public programs are unlocking private capital at record pace, with each state-level initiative or national lab partnership triggering follow-on investment from corporates and venture funds. A concrete example is DARPA's Quantum Benchmarking Initiative (QBI), which is testing whether an industrially useful quantum computer can be achieved by 2033. IonQ is among the companies advanced to Stage B, and we look forward to the next year of work with DARPA to translate technical benchmarks into field-ready capability - validation that can accelerate investment and deployment.<sup>3</sup>

The number of companies raising capital or completing mergers has climbed sharply, reflecting a sector moving from experimentation to industrialization. In parallel, global corporations - many of them end users rather than suppliers - are building internal quantum teams, investing in hybrid AI-quantum infrastructure, and starting to specify clear commercial requirements for procurement.<sup>4</sup>

### **Quantum as a Core Economic Engine**

Across history, foundational technologies have reshaped the global economy by expanding our capacity to compute, communicate, and create. When nations and industries invest early in such technologies, they lay down infrastructure that multiplies productivity across every sector. The initial outlays into talent, facilities, and innovation hubs generate self-reinforcing ecosystems - clusters where research drives entrepreneurship, where supply chains mature, and where the returns compound for decades.

Quantum technology sits firmly in this category. It has the potential to do for the twenty-first century what semiconductors did for the twentieth: power new industries, reinvent scientific discovery, and strengthen economic resilience. Combined with artificial intelligence, quantum computing offers an unparalleled opportunity to solve problems once thought computationally unreachable - accelerating material design, drug discovery, energy optimization, and complex financial modeling. Together, these technologies compress innovation cycles and amplify scientific output across the economy.

Analysts now estimate that direct revenues from quantum technologies could reach tens of billions of dollars annually by the mid-2030s.<sup>5</sup> Leading analysts expect the economic impact from quantum to exceed trillions of dollars globally within the same horizon, creating hundreds of thousands of jobs.<sup>6</sup>

Investment drives immediate construction, hiring, and R&D spending. These activities stimulate demand in associated industries such as precision optics, photonics, cryogenics, and semiconductor fabrication. As systems scale, supply chains deepen and knowledge transfers across sectors - from aerospace to life sciences to advanced manufacturing. The result is a cumulative growth engine that sustains high-value jobs, strengthens regional competitiveness, and attracts sustained private investment.

Regions and nations that move first tend to build long-lasting competitive advantages. Early investment allows them to establish centers of excellence with top talent, attract global partnerships, and anchor supplier networks that can dominate for generations. The strategy is not about short-term stimulus; it is about planting a durable industrial base. Quantum computing and AI together can be the backbone of that transformation - a modern productivity engine that will define leadership in the next wave of the digital and scientific economy.

### **The Technology Itself**

At IonQ, we've steadily moved from early prototypes to our fifth generation of systems. Our newest machine, Tempo, isn't just faster on paper - it opens a much bigger problem-solving space. Plus our new machine makes us the only company to achieve "4 - 9's" fidelity. In plain terms: it solves tougher problems, more reliably.

Why does this matter for businesses? Trapped-ion systems run at room temperature. They don't need giant refrigerators or exotic facilities, so they use far less power, fit in standard data centers, and plug directly into modern AI workflows. With electricity demand soaring from AI, that efficiency is a strategic edge.<sup>7</sup>

IonQ is a full-stack quantum platform - Compute (Tempo systems tackling optimization, simulation, and machine learning workloads), Sensing (precision tools that detect tiny signals for navigation, timing, materials, and industrial monitoring), and Networking (secure links that connect quantum devices for distributed computing) - working together to deliver end-to-end capability that moves customers from pilot programs to real impact faster. Taken together, these elements of our total platform are laying the groundwork for a new, secure, quantum internet.

Enterprises are responding accordingly. There are now hundreds of large companies exploring quantum technology or purchasing quantum systems.<sup>8</sup> These include leaders in pharmaceuticals, materials science, energy, finance, and logistics - industries with clear computational bottlenecks that quantum can begin to address. One example of our recent achievements includes a quantum advantage demonstration in computational engineering, speeding up training of neural networks, and a 20x speedup in computational drug design achieved in partnership with AstraZeneca, Amazon Web Services, and Nvidia.

### **National Security and Resilience**

Quantum also plays a vital role in national security. As quantum computers advance, they will eventually be capable of breaking current public-key cryptography.<sup>9</sup> Commendable steps to mitigate this risk have already been taken and IonQ supports full funding and acceleration of that transition.

Beyond software-based encryption, we are developing hardware-secure quantum networks that use the principles of quantum mechanics to transmit data that cannot be intercepted without detection. Combined with quantum sensing technologies - capable of ultraprecise timing and navigation in GPS-denied environments - this creates an integrated architecture for secure, resilient information systems.

### **Closing**

Quantum is no longer a speculative field - it is becoming the backbone of the next generation of computing and security infrastructure. The combination of quantum and AI represents a once-in-a-century opportunity to redefine productivity growth, industrial competitiveness, and scientific progress.

As with semiconductors in the 1970s or the Internet in the 1990s, the question is not whether the technology will mature, but where the value will accrue. If we act decisively, we can ensure that value accrues here, in the United States.

This is an opportunity to build not just new machines, but a new economy - one defined by high-wage jobs, secure supply chains, and accelerated innovation. That is what it means to treat quantum as a core economic engine.

Thank you for your time, and I look forward to your questions.

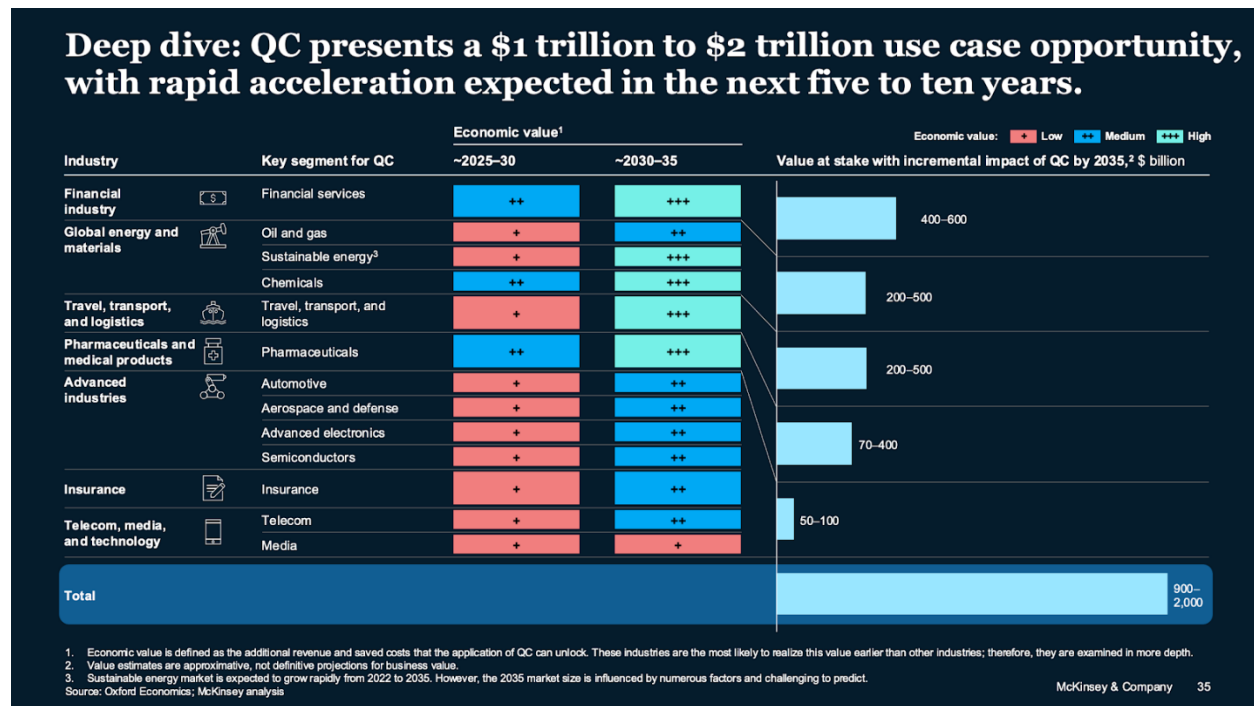
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## Appendices – Footnotes

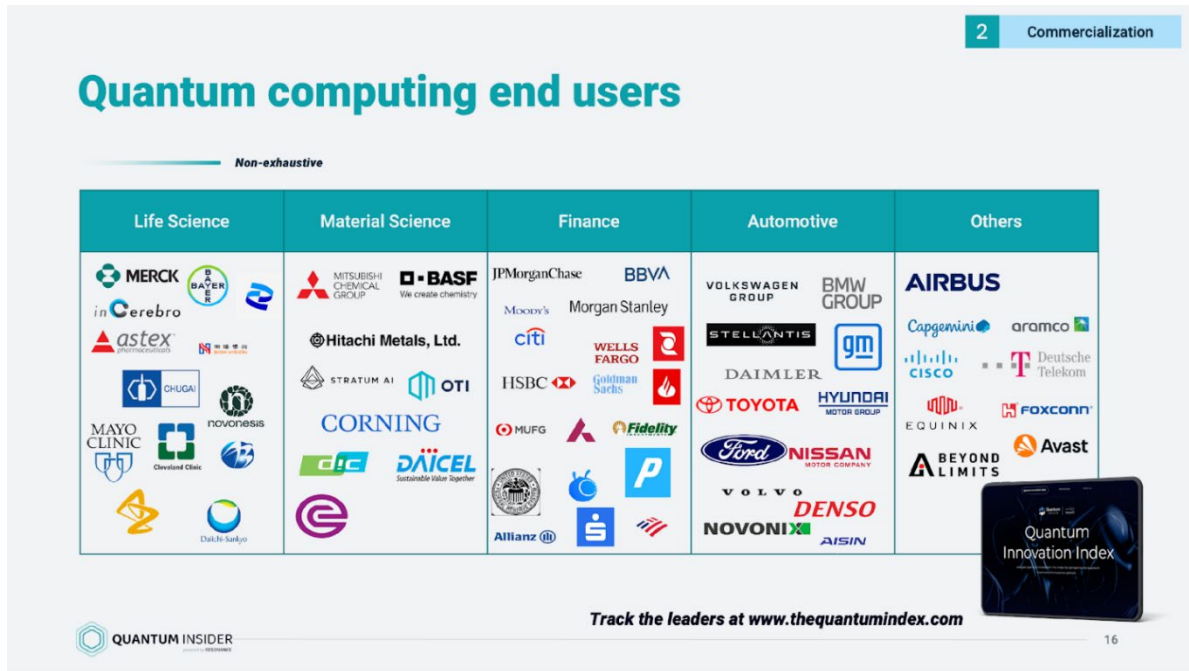
- 1 [McKinsey Quantum Monitor 2025](#)
- 2 [White House Memo dated September 23, 2025](#)
- 3 [DARPA.mil/quantum-benchmarking-initiative](#)
- 4 Quantum Insider analysis, sourced from Intelligence Platform
- 5 [QED-C State of the Global Quantum Industry 2025](#)
- 6 [McKinsey. Quantum Monitor 2025](#)
- 7 [IEA Reports: Energy demand from ai](#)
- 8 Quantum Insider analysis, sourced from Intelligence Platform
- 9 [Transition to Post-Quantum Cryptography Standards, NIST](#)

## Appendices – Select Exhibits

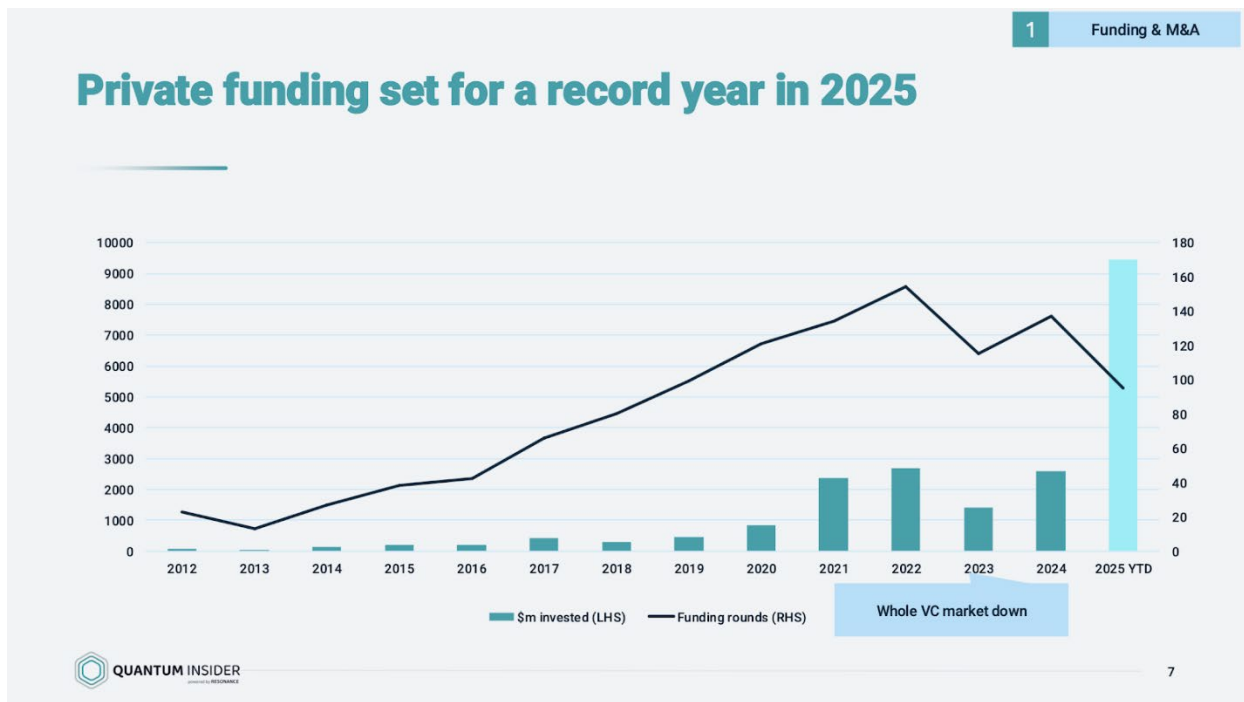
### Quantum computing economic impact (McKinsey Quantum Monitor 2025)



## Quantum enterprise engagement (*The Quantum Insider public keynote 2025*)



## Quantum capital raised (*The Quantum Insider public keynote 2025*)



The amount of capital raised and number of mergers and acquisitions has climbed sharply (*The Quantum Insider public keynote 2025*)

## M&A / consolidation a sign of a maturity industry

2016-2022					2023-2025				
Year	Company 1	Company 2	M/A	Deal Size	Year	Company 1	Company 2	M/A	Deal Size
2016	KEYSIGHT TECHNOLOGIES	Signadyne	A	N/A	2023	IONQ	Entangled Networks	A	N/A
2019	rigetti	O'Branch	A	N/A	2023	BLUEFORS	CRYOMECH	A	N/A
2020	KEYSIGHT TECHNOLOGIES	Labber QUANTUM	A	N/A	2024	SANDBOX.io	GOOD CHEMISTRY	A	\$75M
2020	FORMFACTOR	HPD	A	N/A	2025	IONQ	Qubitekk	A	\$22M
2021	KEYSIGHT TECHNOLOGIES	(qb) quantum benchmark	A	N/A	2025	IONQ	IDQ	A	~\$250M
2021	HONEY & SCHWARZ	Zurich Instruments	A	N/A	2025	Pasqal	AEPONYX	A	N/A
2021	Honeywell	CCQ	M	~\$300M	2025	IONQ	oxford ionics	A	~\$1B
2022	Pasqal	Qu & Co	M	N/A	2025	Quantum Design	OXFORD IONICS	A	~\$81M
2022	QUANTUM MACHINES	QDevil	A	N/A	2025	IONQ	VA	A	N/A
2022	ColdQuanta	SUPERTECH	A	N/A	2025	IONQ	Caspella Space	A	N/A
2022	QCI	QPhoton	A	N/A	2025	IONQ	LIGHTSYNQ	A	N/A
2022	Pasqal	MYCEOFFER	A	N/A	2025	IONQ	STRANGENORIS	A	N/A
2022	SANDBOX.io	cryptosense	A	N/A	2025	IONQ	Quantagonia	A	N/A

## Quantum national investment commitments (*McKinsey Quantum Monitor 2025*)

