2025
Analyst Day

September 12, 2025

Cautionary Notes

This presentation contains certain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Some of the forward-looking statements can be identified by the use of forward-looking terms. Statements that are not historical in nature, including the terms "accelerating," "access," "accessible," "anticipate," "available," "believe," "can," "capable," "deliver," "designed to," "deployable," "enabling," "estimate," "expect," "expected," "future," "goal," "growth," "increased scale," "intend," "impact," "latest," "leader," "leading," "may," "pending," "planned," "scale," "target," "will," "winning," "potential," and other similar expressions are intended to identify forward-looking statements. These statements include those related to the company's expansion in the quantum computing, security, and networking market segments; the company's technology driving commercial advantage or delivering scalable, fault-tolerant quantum computing in the future; the ability for third parties to implement IonQ's offerings in their data centers and to reduce their compute costs; the energy efficiency and sustainability of the IonQ's offerings; the efficacy of new applications of quantum computing; the relevance and utility of quantum algorithms and applications run on IonQ's quantum computers; the size of quantum computing, security, and networking market segments in the future; IonQ's quantum computing, security, and networking capabilities and plans; future deliveries of and access to IonQ's quantum services, computers, and networking devices; access to IonQ's quantum computers including hybrid-enabled functionality; increases in algorithmic qubit achievement; future purchases of IonQ's offerings by customers using congressionally-appropriated funds from the U.S. government; IonQ closing anticipated acquisitions; the success of partnerships and collaborations between IonQ and other parties, including development and commercialization of products and services with such parties; and the scalability, reliability, performance, modularity, commercial-readiness, and architectural advantages of IonQ's offerings. Forward-looking statements are predictions, projections and other statements about future events that are based on current expectations and assumptions and, as a result, are subject to risks and uncertainties. Many factors could cause actual future events to differ materially from the forward-looking statements in this presentation, including but not limited to: changes in the competitive industries in which IonQ operates, including development of competing technologies; any inadequacies in the overall pace of technology development in the quantum industry, including inadequate advances in the state of quantum networking and quantum systems; IonQ's relatively limited history in developing quantum networks; the capability of our quantum systems and quantum networks to provide transformative applications and commercial quantum advantage; changes in laws and regulations affecting IonQ's business; IonQ's ability to enter new markets and exploit new technologies; IonQ's ability to implement its business plans, forecasts and other expectations, identify and realize partnerships and opportunities, and to engage new and existing customers; changes in U.S. government spending or policy that may affect IonQ's customers; changes to U.S. government goals and metrics of success with regard to implementation of quantum computing; risks associated with U.S. government sales, including availability of funding and provisions that allow the government to unilaterally terminate or modify contracts for convenience; satisfaction of conditions to close acquisitions by IonQ and counterparties; IonQ's inability to effectively integrate its acquisitions; IonQ's ability to attract and retain key personnel, including Lightsynq personnel joining IonQ; IonQ's ability to utilize the technology of acquired companies to accelerate the development and scale of IonQ's systems and offerings; and IonQ's ability to work effectively with collaborators in existing or planned partnerships, including the effectiveness of integration of IonQ's technology with collaborators' technology. You should carefully consider the foregoing factors and the other risks and uncertainties disclosed in the Company's filings, including but not limited to those described in the "Risk Factors" section of IonQ's filings with the U.S. Securities and Exchange Commission, including but not limited to the Company's most recent Annual Report on Form 10-K and reports on Form 10-Q. These filings identify and address other important risks and uncertainties that could cause actual events and results to differ materially from those contained in the forward-looking statements. Forward-looking statements speak only as of the date they are made. Readers are cautioned not to put undue reliance on forward-looking statements, and IonQ assumes no obligation and does not intend to update or revise these forward-looking statements, whether as a result of new information, future events, or otherwise. IonQ does not give any assurance that it will achieve its expectations. IonQ may or may not choose to practice or otherwise use the inventions described in the issued patents in the future.

Today's Agenda

01	**Welcome: IonQ Quantum Leadership**
02	**Quantum Computing Roadmap**
03	**Lowering Cost-Per-Qubit**
04	**Creating an Ecosystem: Photonic Interconnect**
05	**Quantum Networking Ecosystem & Quantum Networking Demonstration**
	Question & Answer Session
06	**Enterprise-Grade Applications & Ecosystem**
07	**Customer & Partner Momentum**
08	**Financial Updates**
09	**Fireside Chat: Why I Joined IonQ**
10	**Concluding Comments**
12:30pm	*Lunch & Tour of the NYSE Floor*

01

IonQ Quantum Leadership:

How IonQ Leads the Industry – and Stays Ahead

Niccolo de Masi
Chairman & CEO

IonQ’s Proven Quantum Leadership:
The Last Decade

Historic First-Mover Advantages Cemented Decade of Leadership

IONQ

Hardware & Software Leadership

APR 2017

IonQ System Powered On

Yb trapped ion system (Room Temp, 15 ions)

OCT 2018

IonQ Compiler Software Built

World's premier compiler based on published results

Commercial Leadership

Amazon Braket

AUG 2020

Deployed on AWS Braket

Commercially available QC on AWS's Cloud

Microsoft Azure

OCT 2020

Deployed on Microsoft Azure

Commercially available on Microsoft's Cloud

Google Cloud

APR 2021

Deployed on Google Cloud

Only commercially available QC on all 3 major public clouds

Applications Leadership

Ansys

MAR 2025

Milestone Materials App

12% speedup on engineering simulation

AI

APR 2025

Milestone Quantum AI App

3% edge with LLM quantum fine-tuning model

aws AstraZeneca NVIDIA

JUN 2025

Milestone Pharma App

>20x faster time-to-solution with hybrid workflow

Unprecedented Momentum
Positions IonQ to Lead the Next Decade

Revenue growth nearly doubling YoY since IPO

$100M+ AFRL deals pioneering enterprise-grade quantum networking

Historic strategic acquisitions fueling 1,000+ patent portfolio moat[1]

Orders-of-magnitude hardware error reduction

36 Quadrillion times larger computational space than IBM

Largest $1.075B quantum deal to acquire Oxford Ionics

1. Includes owned or controlled patents granted and pending as of May 2025, including those from IDQ (in which IonQ owns a majority stake), and Oxford Ionics (which IonQ intends to acquire pending closure pursuant to terms aligned in June 2025)

IonQ Secures Regulatory Approval from the UK Investment Security Unit for the Acquisition of Oxford Ionics

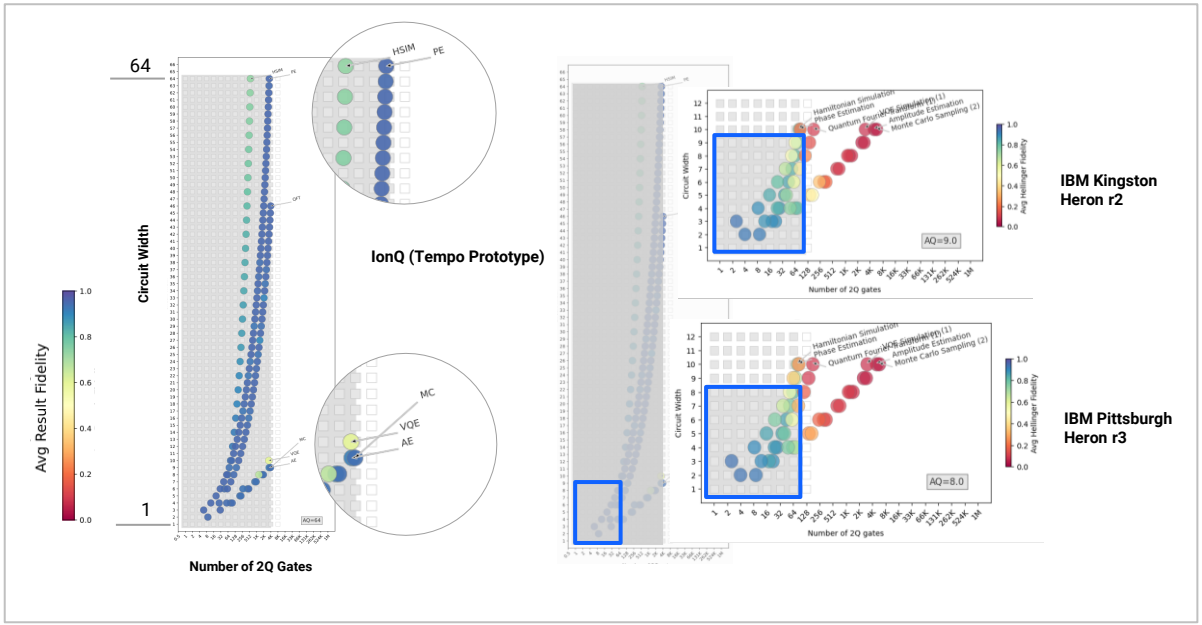
The Best Solution Across Every Unit Economic Vector

	IONQ	Superconducting	Business Impact
Cost per System (2 million physical qubits)	**<$30M** BOM Cost	**>$1B** BOM Cost	Others have no public plans to reach 2M physical qubits. Their estimated **BOM costs are >30X more expensive vs. IonQ's**
Power	 Wall Socket Minimal Cooling	 Dilution Refrigerators / Cryostats Nuclear Reactors	Other systems require massive, specialized infrastructure **driving up energy costs and limiting deployment**
Footprint	 Standard Datacenter Racks	 Football Field	Other systems demand room-sized or football field–scale facilities, **blocking datacenter integration and slowing adoption**

Source: IonQ BOM cost estimates by Kearney; Superconducting data taken from publicly available information using reasonable extrapolation assumptions

36 Quadrillion Times Larger Computational Space

Algorithm Qubit Comparisons



IonQ #AQ 64 prototype system has a computational space **36 quadrillion times larger** than **IBM's current highest performing quantum system**

Source: IonQ preliminary internal data; 3rd party independent research

IonQ’s Enduring Quantum Leadership:
The Next Decade and Beyond

Integrating the World's Best Talent & Technology

Quantum World Record Holders

Dr. Chris Ballance
CEO, Oxford Ionics
Oxford Ionics

World Records:
99.999% 1Q Fidelity
99.97% 2Q Fidelity

Dr. Chris Monroe
Chief Scientific Advisor & Co-Founder
Duke University | NIST University of Maryland

World Records:
First Demonstration
of quantum logic gate
& multi-qubit entanglement

Dr. Mihir Bhaskar
Head of Distributed Computing, IonQ
(formerly CEO, Lightsynq Technologies)
Harvard University | AWS Center for Quantum Networking

World Records:
First Demonstration
of memory-enhanced quantum
communication

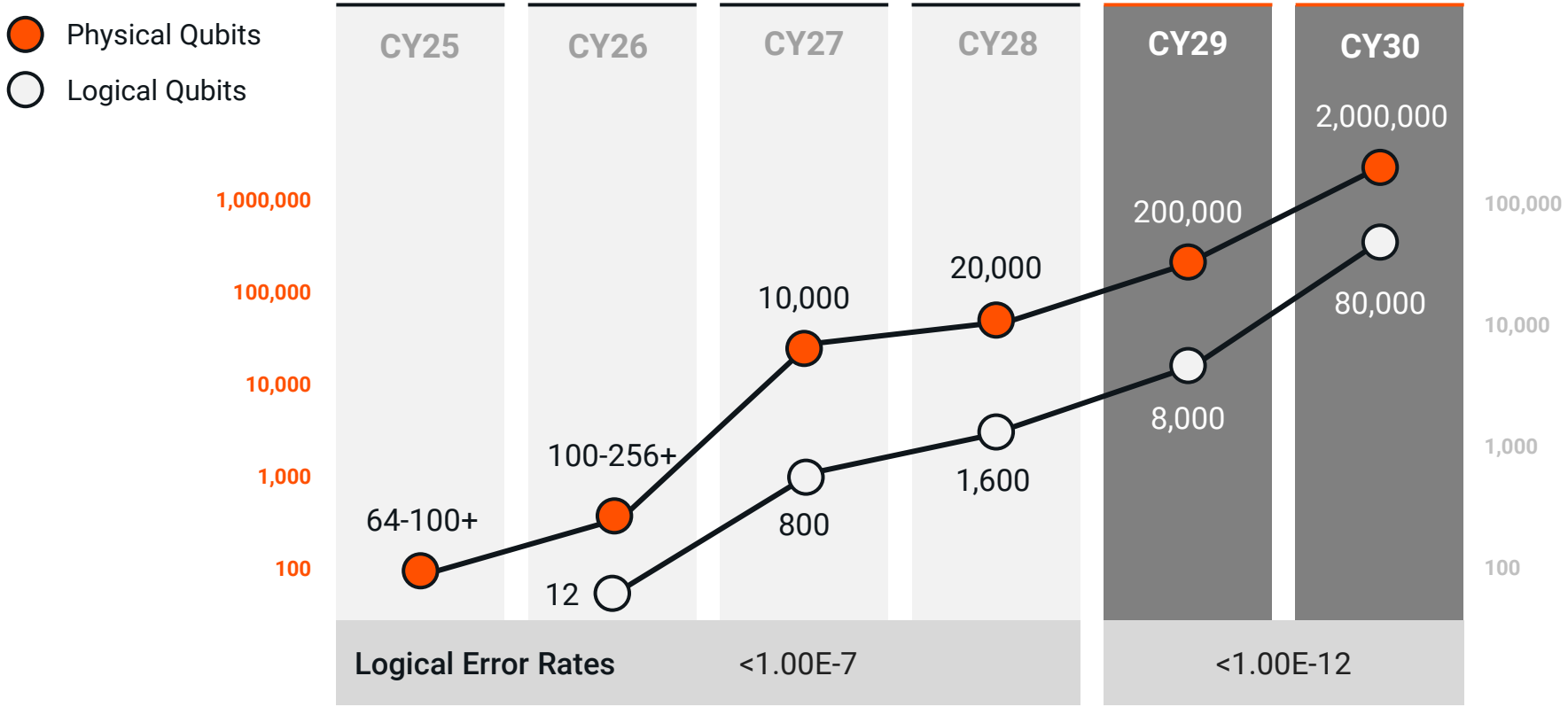
Domain Leadership

Marco Pistoia
SVP, Industry Relations
JP Morgan Chase | IBM

Rick Muller
VP, Quantum Systems
IARPA | Sandia National Labs

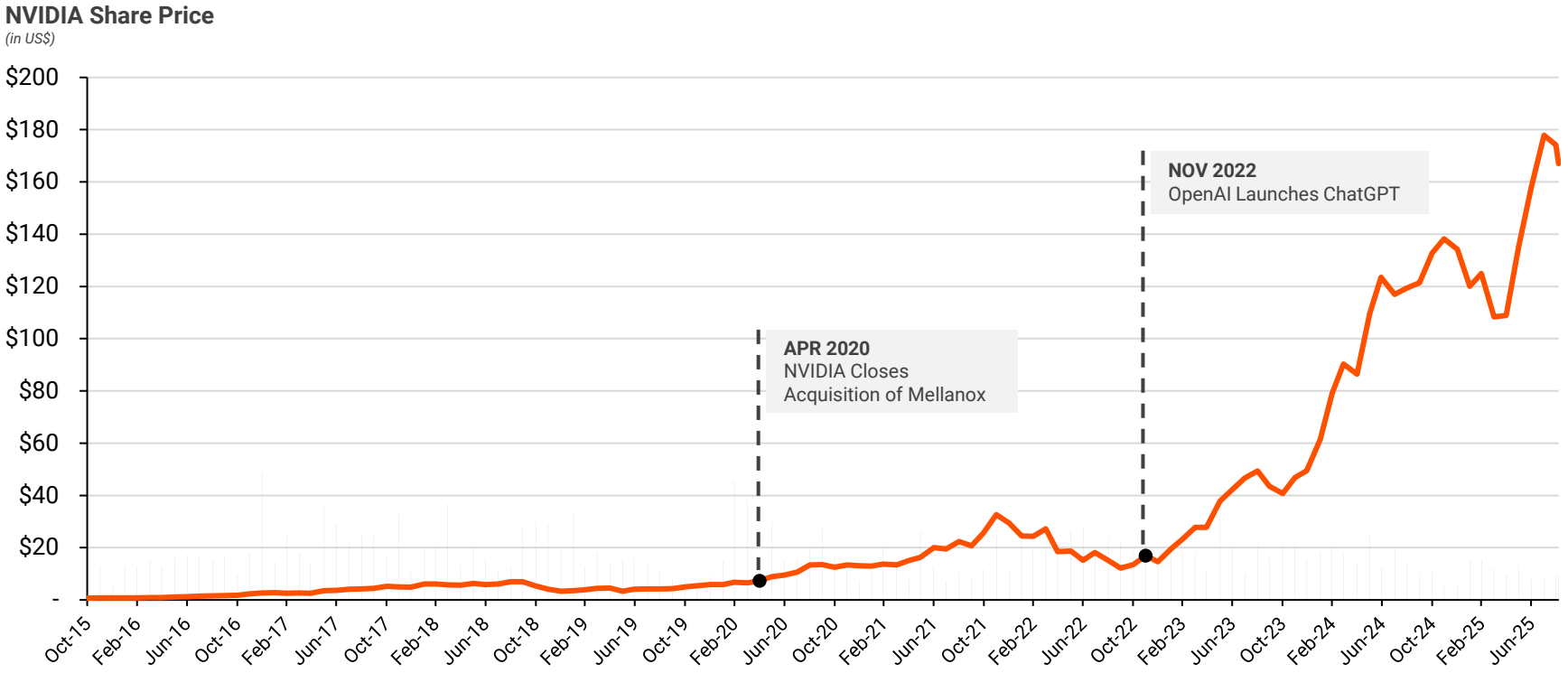
Robert Cardillo
Executive Chairman of IonQ Federal
National Geospatial-Intelligence Agency (NGA)

Leading Quantum Computing Technology Roadmap



Datacenter Scalability Matters

Building the Hardware and Software Stack to Support Quantum Cloud Growth at Scale



Source: Capital IQ

We Are Delivering Early Quantum Advantage Today

IONQ

PHARMA

AstraZeneca

Drug Discovery

20X
Faster time-to-solution than best previously published implementation by AWS

SIMULATION

Ansys

Computer Aided Engineering

Up to 12%
Improvement over classical heuristics | 2.6M vertices & 40M edges by AWS

AUTOMOTIVE

HYUNDAI

QML and Chemistry

Landing and Expanding
Relationship & Capabilities

QUANTUM NETWORKING

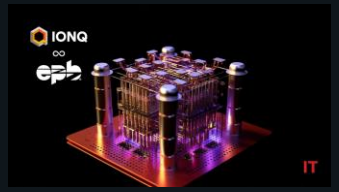
AFRL

Military-Grade Networking

$54.5M
Project for commercial quantum networking over next 4 years

QUANTUM NETWORKING

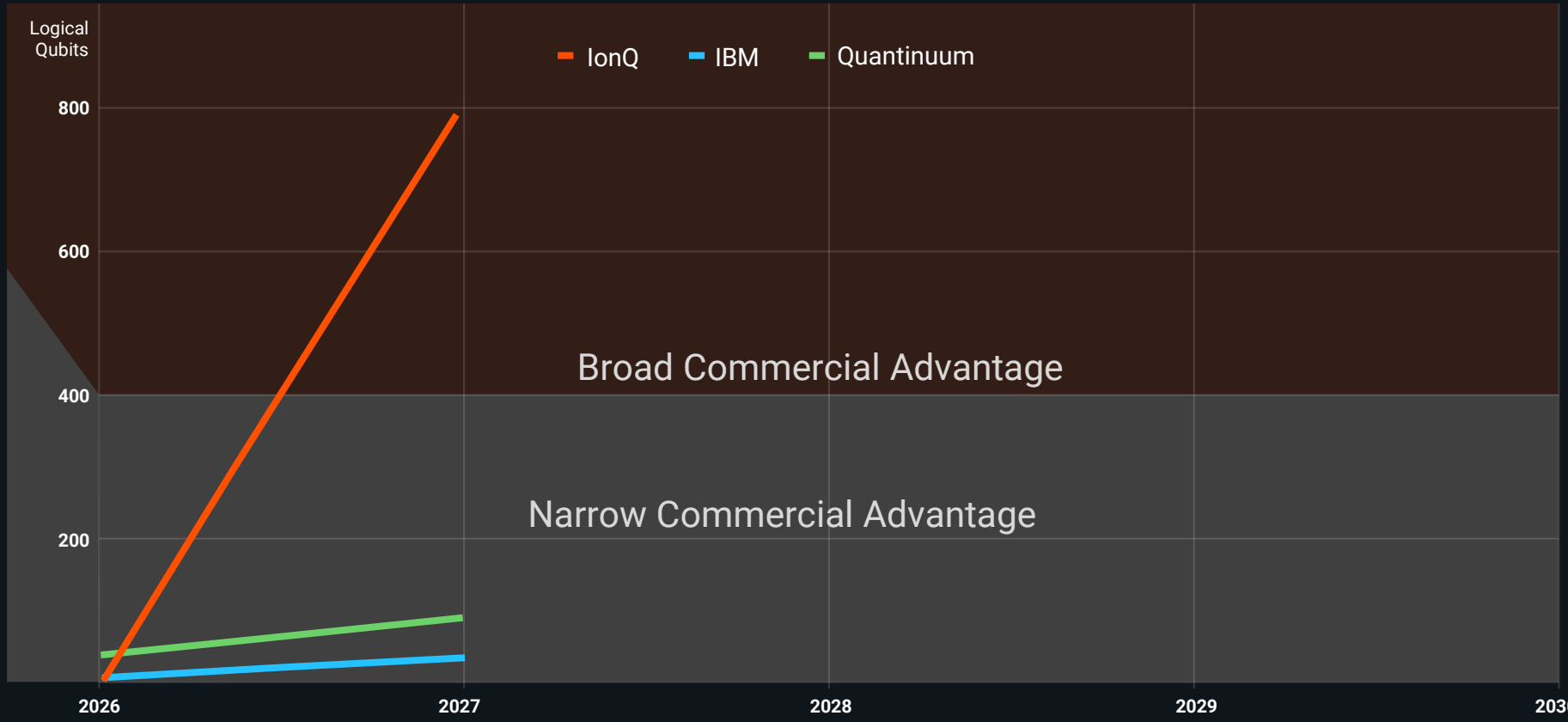
eqb Quantum℠



QC Economy Networking Hub

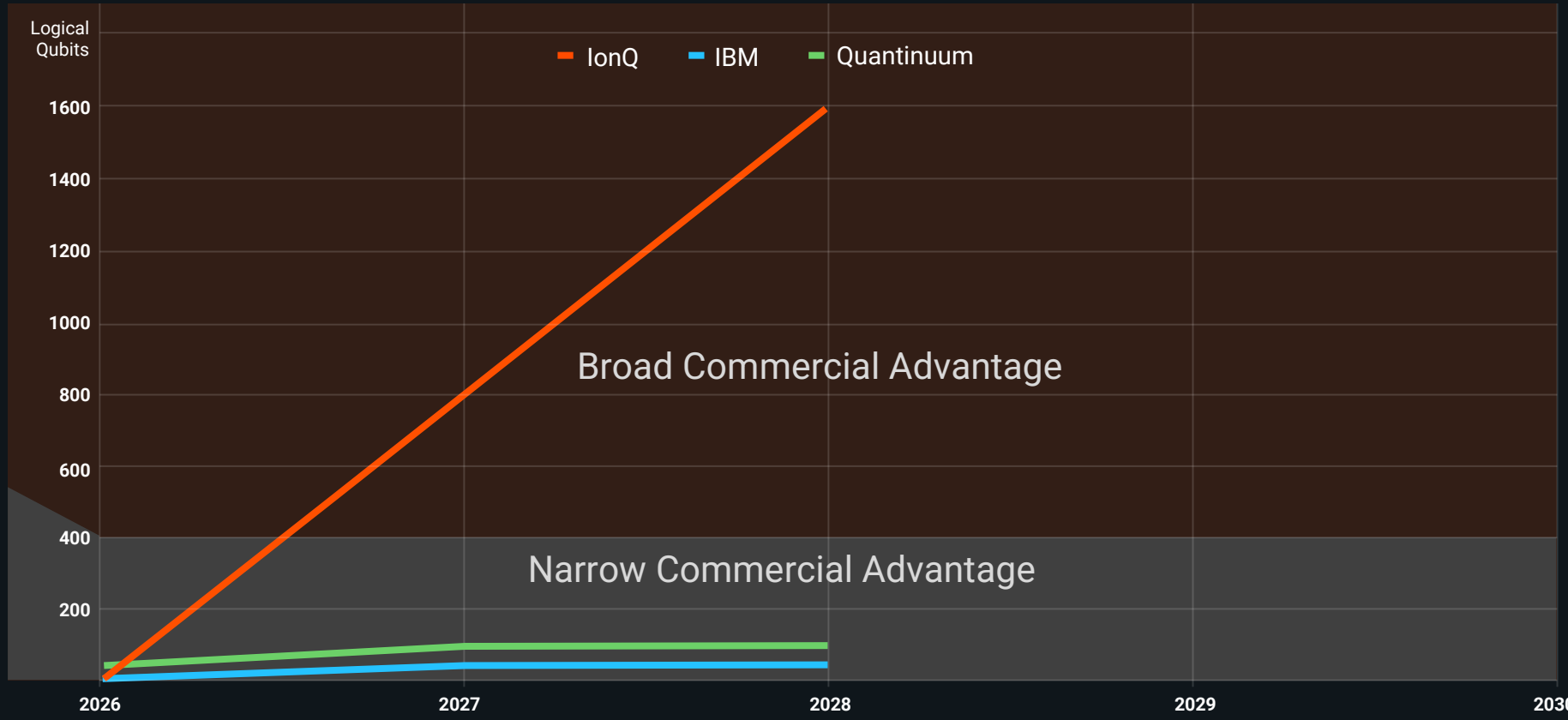
IonQ Forte Enterprise
Nation's first networking hub

Exponential Edge in Logical Qubits and Fault Tolerance Race



Note: Figures derived from publicly available roadmaps from IBM and Quantinuum, with reasonable approximations used where data was unavailable.

Exponential Edge in Logical Qubits and Fault Tolerance Race



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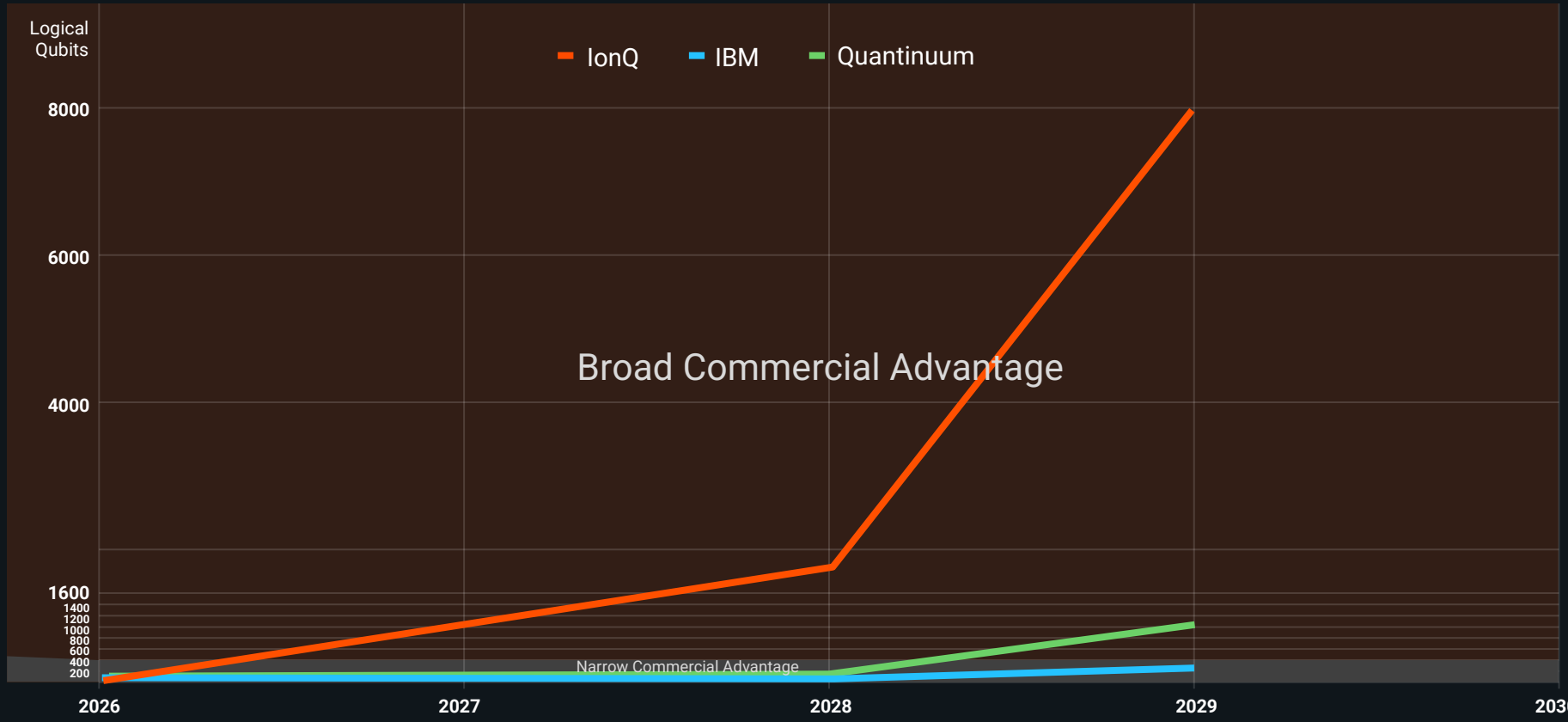
Exponential Edge in Logical Qubits and Fault Tolerance Race



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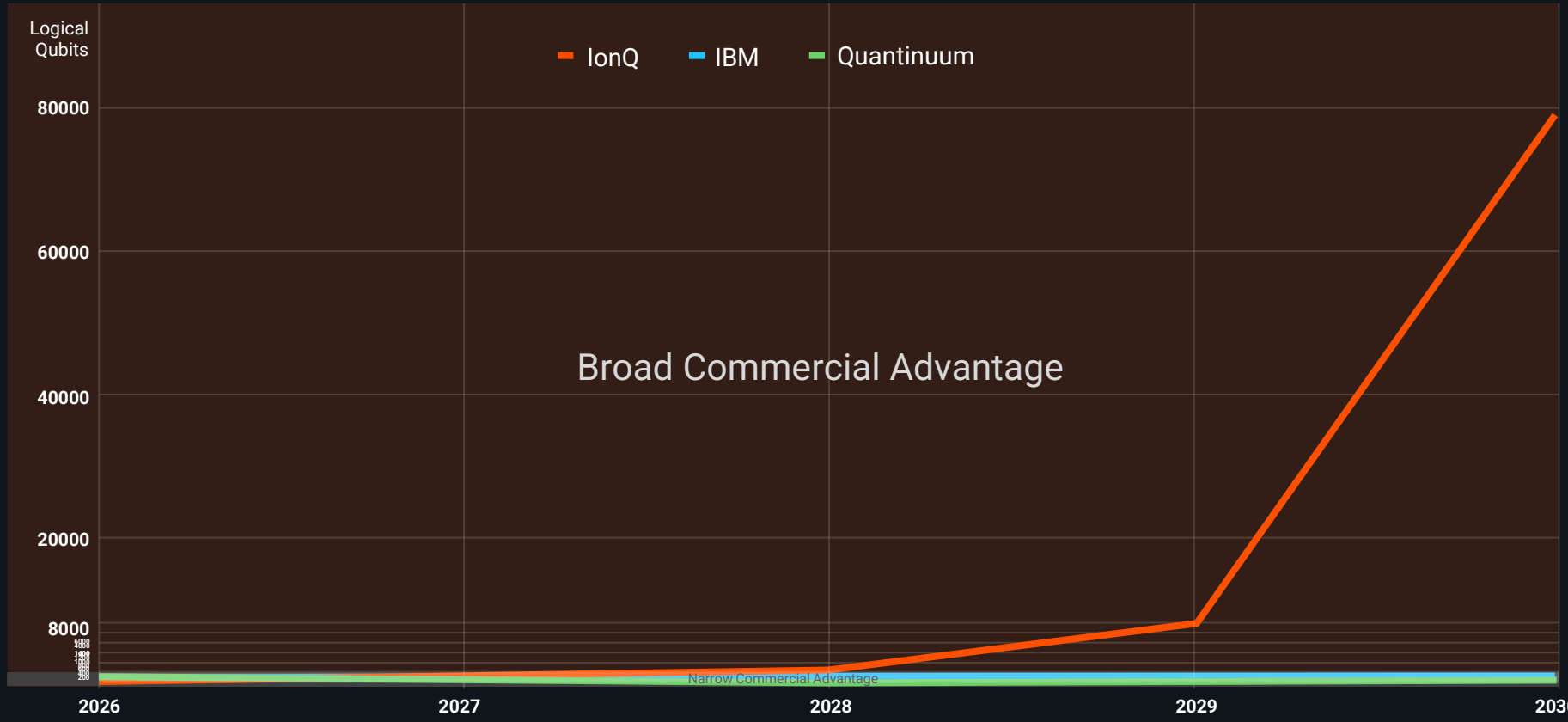
Exponential Edge in Logical Qubits and Fault Tolerance Race



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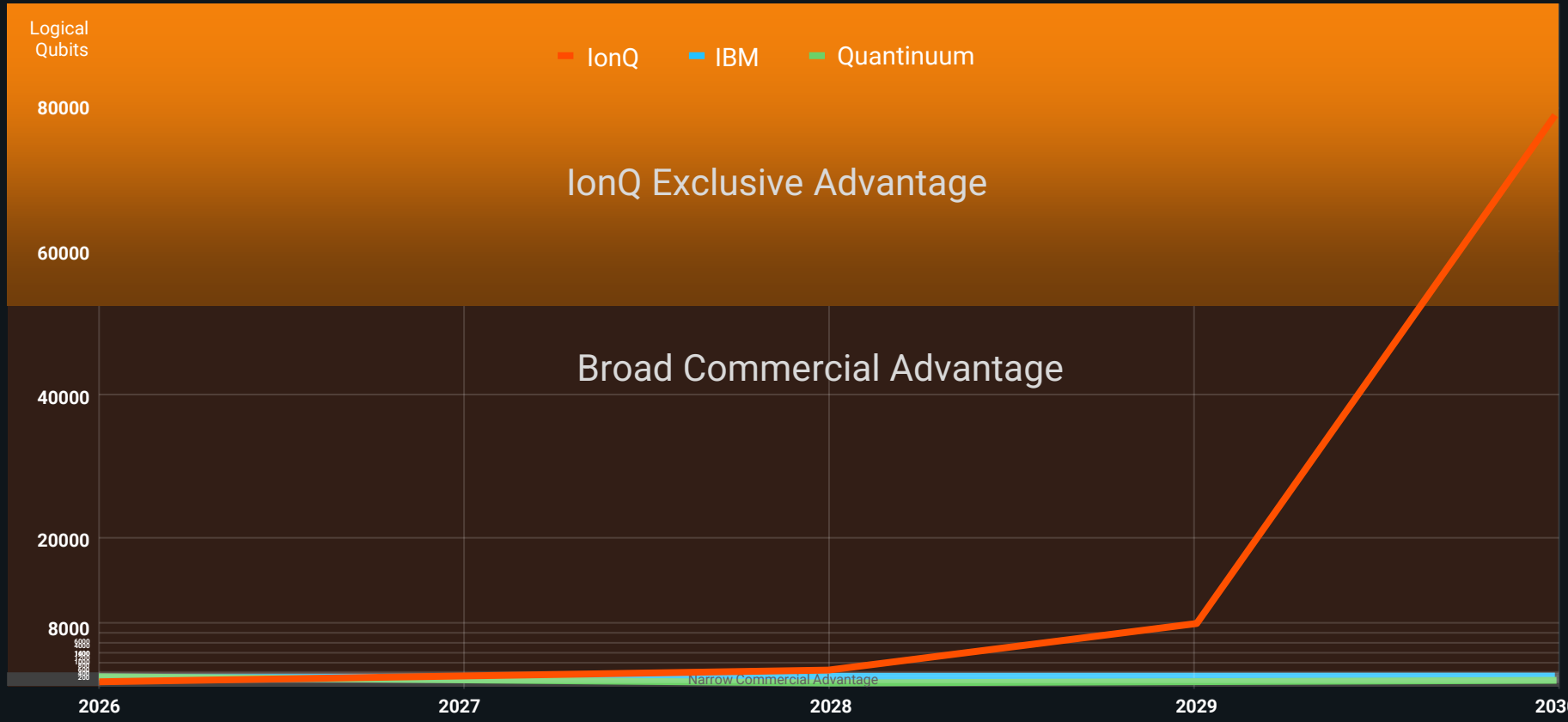
Exponential Edge in Logical Qubits and Fault Tolerance Race



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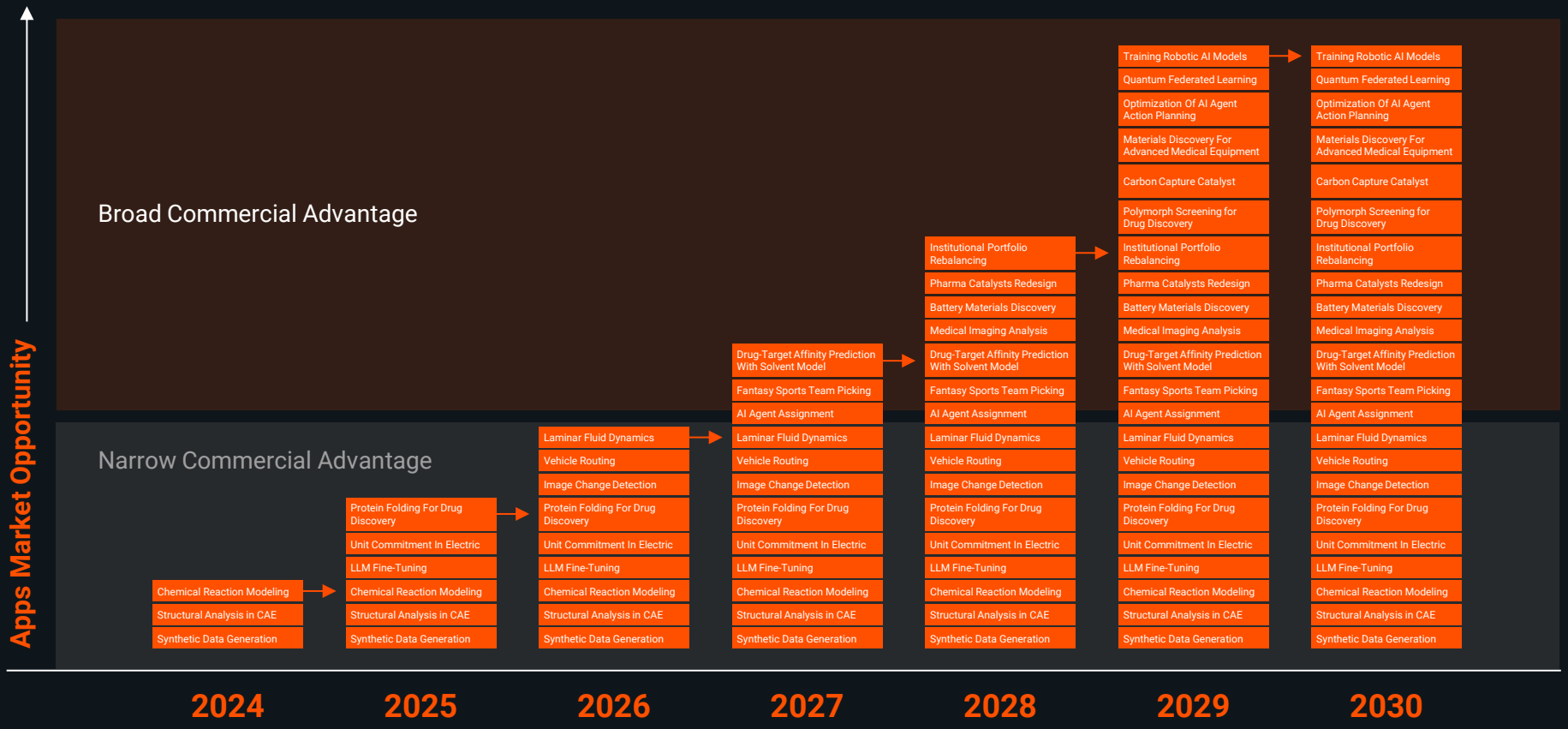
Exponential Edge: Logical Qubits Unlock Vast Application Space



Ticketmaster confirms data breach in email to users

National Defense Corporation victim of ransomware attack; discloses breach and declines

ransom.

2025 by Dissent

CrowdStrike shares slip as forecast reflects lingering effects of tech outage

By **Reuters**

August 28, 2025 7:58 AM EDT · Updated August 28, 2025

Disney to stop using Salesforce-owned Slack after hack exposed company data,

An Egyptian cyber attack on Ethiopia by hackers is the latest strike over the Grand Dam

Zecharias Zelalem

Sat, June 27, 2020 at 7:46 AM EDT · 3 min read

Boeing confirms attempted $200 million ransomware extortion attempt

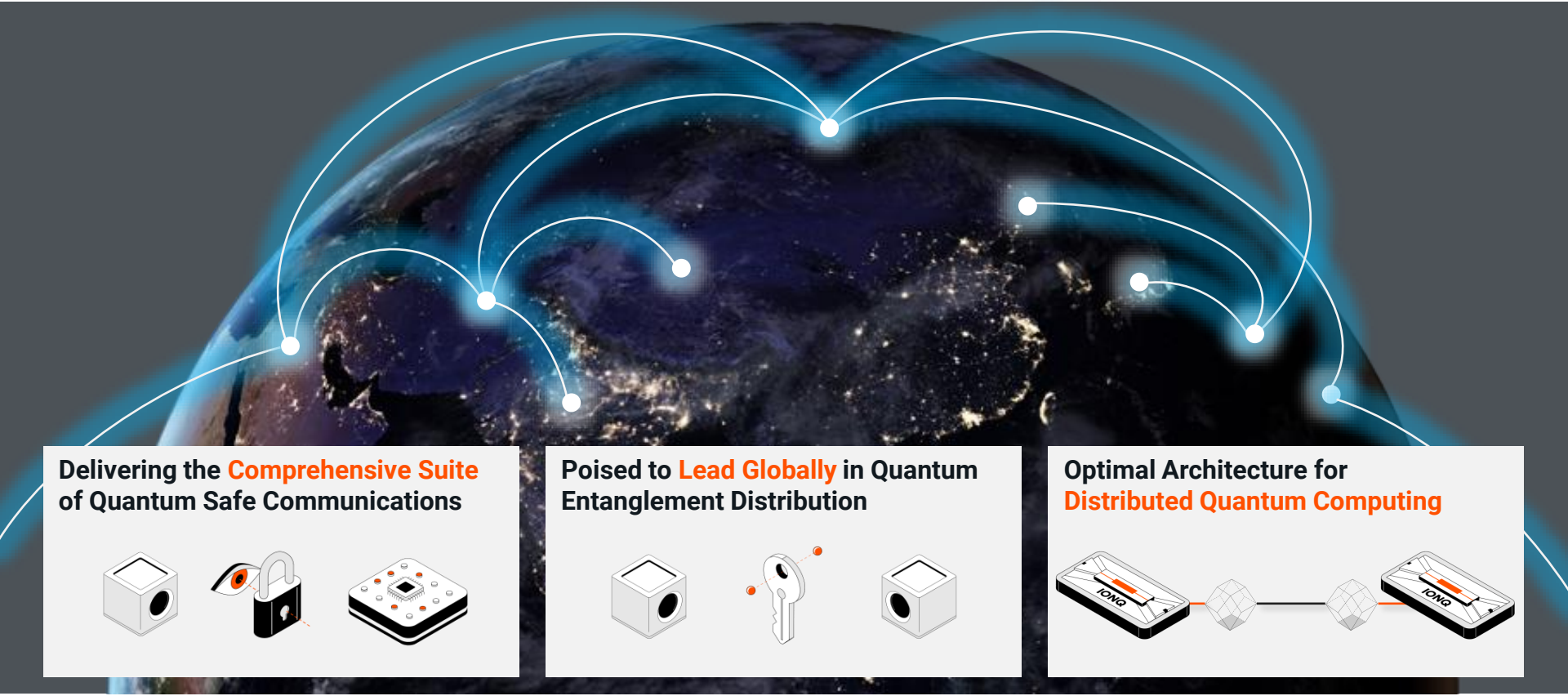
one of multiple "extremely large" ransom demands made b

said.

24

Finnish parliament website targeted in cyber attack

Networking to Create the Global Quantum Internet



Delivering the Comprehensive Suite of Quantum Safe Communications

Poised to Lead Globally in Quantum Entanglement Distribution

Optimal Architecture for Distributed Quantum Computing

02

Quantum Computing Roadmap

Dr. Dean Kassmann
SVP, Engineering & Technology

Industry Leading Commercial Product Portfolio

IONQ

Selling

Planned

Harmony	Aria	Forte	Forte Enterprise	Tempo	256 Qubit System	10K - 2M+ Qubit Systems
2019	2021	2023	2024	2025	2026	2027 - 2030+

IonQ Full Stack Quantum Innovation

IonQ Applications Development

Commercial Applications

HYUNDAI · AIRBUS · DESY. · GE Research · Thompson CAT · AFRL · Oak Ridge National Laboratory

On-Prem or Cloud Access

IONQ · Microsoft Azure · Amazon Braket · Google Cloud

IonQ Quantum Software

- IonQ Hybrid Services
- SDKs, APIs, Compilers, Cross-Platform Libraries
- IonQ Quantum OS

IonQ Quantum Hardware

Aria	Forte	Forte Enterprise	Tempo	Future Systems
				

IonQ Quantum Networking

- End-to-end Quantum Networks
- Quantum Internet
- Distributed Quantum Computing
- Quantum Key Distribution (QKD)

Algorithmic Qubits Explained

Historic application-driven measure of customer value

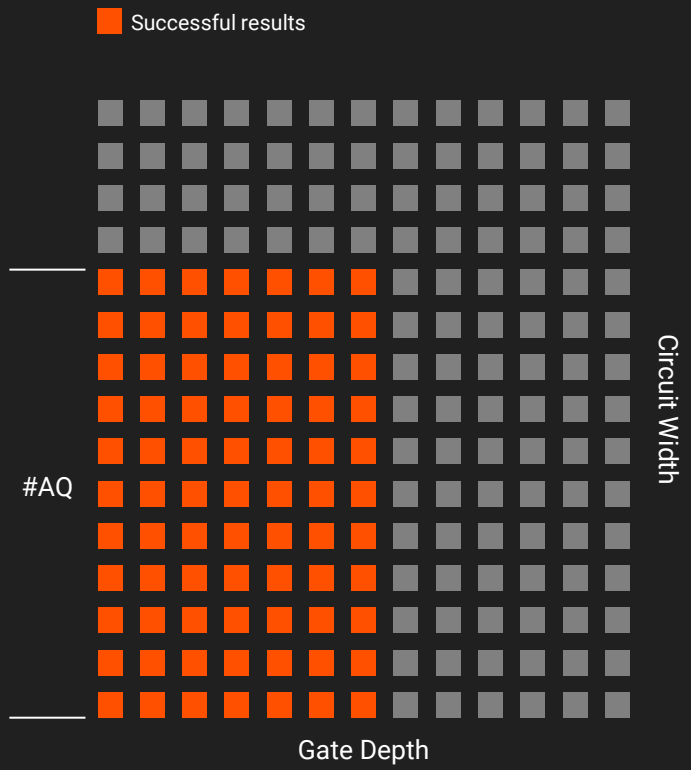
Qubit count, performance, and architecture all combine to give usable performance

#AQ is defined as *useable qubits* in a quantum computer

Defining #AQ based on QED-C benchmarking

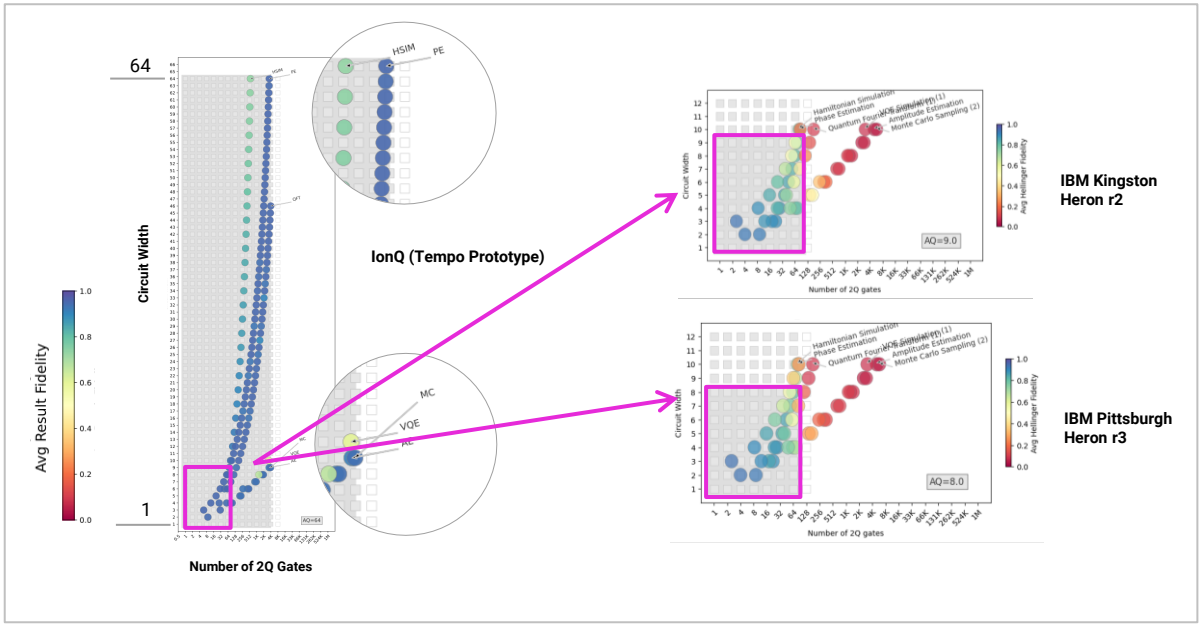
Optimization Problems involving complex routing, sequencing and more	✓ Amplitude Estimation ✓ Monte Carlo Simulation
Quantum Simulation Understand the nature of the very small	✓ Hamiltonian ✓ Variational Quantum Eigensolver
Quantum Machine Learning Problems involving complex routing, sequencing and more	✓ Quantum Fourier Transform ✓ Phase Estimation

Note: Graph is illustrative and not representative of actual results



36 Quadrillion Times Larger Computational Space

Algorithm Qubit Comparisons



IonQ #AQ 64 prototype system has a computational space **36 quadrillion times larger than IBM's current highest performing quantum system**

Source: IonQ preliminary internal data; 3rd party independent research

Evolving and Expanding Quantum Benchmarking Methodology

Focusing on the metrics with real-world impact

Physical Benchmarks

Number of Physical Qubits

2 Qubit Gate Fidelity

- Number of Logical Qubits
- Gate Depth
- Connectivity

Application Benchmarks

Accuracy of Solution

Time to Solution

Cost to Solution

Energy to Solution

Delivering the World's Most Powerful Quantum Computers

	IONQ		
	Physical Qubits	Logical Qubits	Error Rate
2025	64-100+		
2026	100-256+		<1.00E-7
2027	10,000	800	<1.00E-7
2028	20,000	1,600	<1.00E-7
2029	200,000	8,000	<1.00E-12
2030	2,000,000	80,000	<1.00E-12

5+ Years Ahead

36 Quadrillion Times Larger Computational Space

Strongest Unit Economics

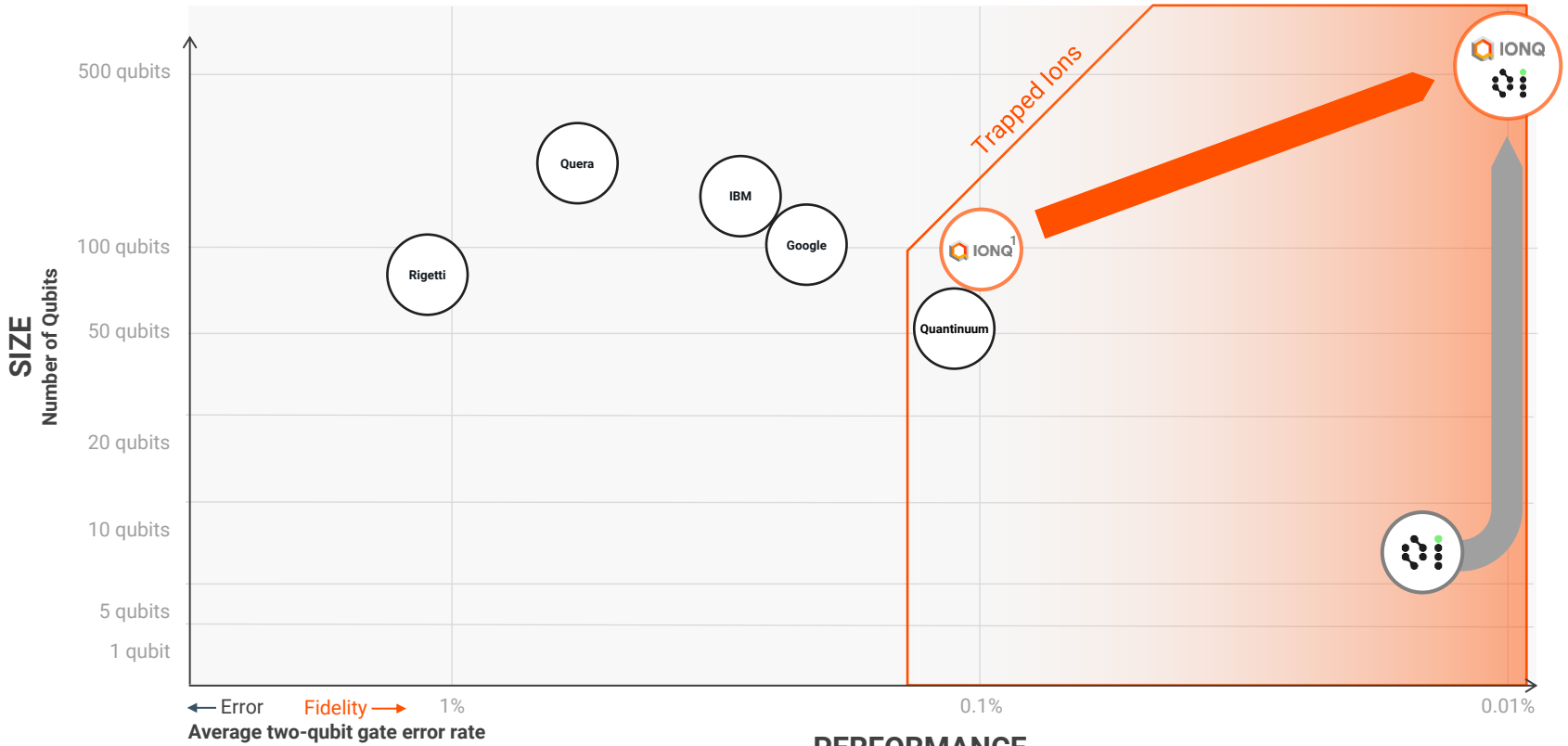
03

Lowering Cost-per-Qubit

Dr. Chris Ballance
CEO, Oxford Ionics

Two Key Ingredients to Scale Quantum Computers

Size *and* performance are needed to unlock value

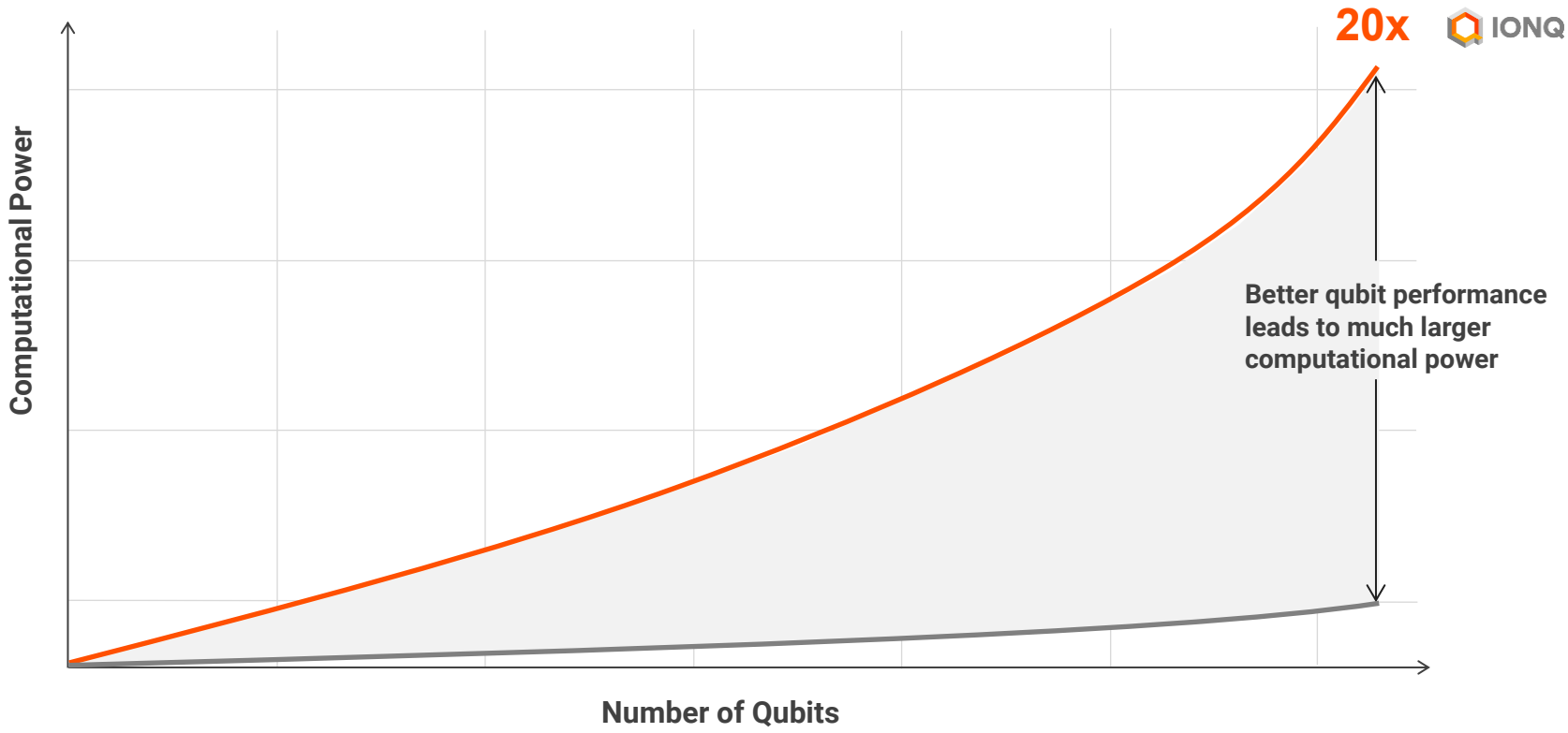


1. Based on IonQ 2025 roadmap

Source: Public disclosures

Better Qubit Performance Unlocks Value Sooner

Quantum error correction is not a free lunch

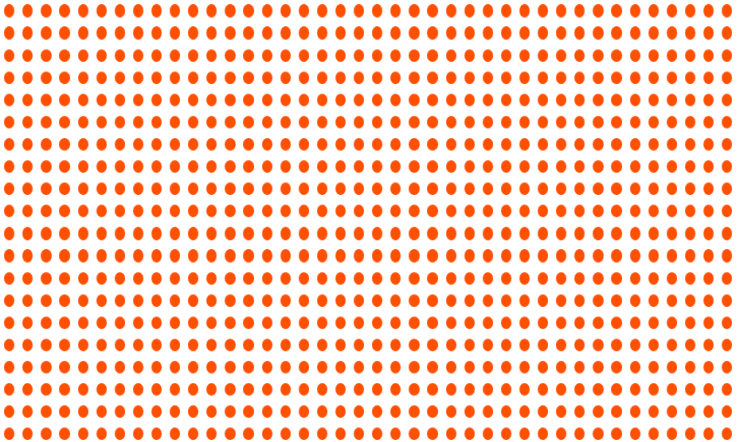


Better Qubit Performance Unlocks Value Sooner

We can achieve 20x more than competitors with the same resources

IONQ[1]

800 Logical qubits



10,000
Physical qubits
(IonQ 2027 roadmap target)

Other Approaches[2]

41 Logical qubits

1. For logical error rate 10^{-7}, see e.g., https://arxiv.org/abs/2308.07915, https://arxiv.org/abs/2503.22071 with 99.99% fidelity physical qubits
2. For logical error rate 10^{-7}, based on distance-11 surface code with 99.9% fidelity physical qubits

99.97%

Two Qubit Gate Fidelity

Achieving Record Breaking

99.99%

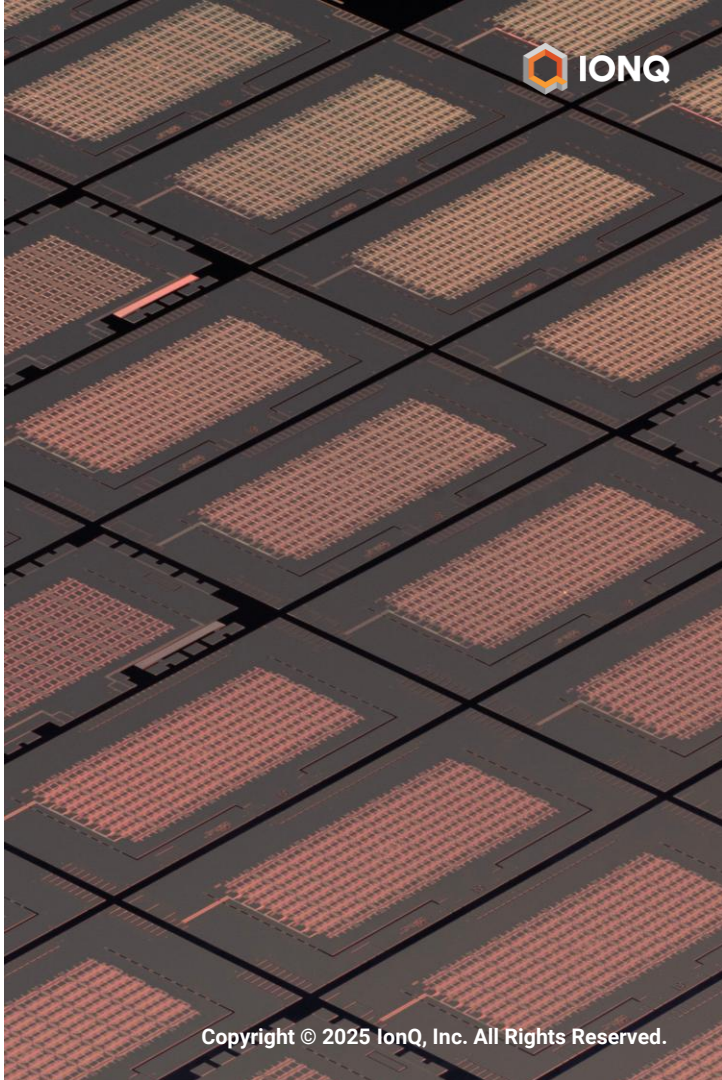
Two Qubit Gate Fidelity[1]

1. Oxford Ionics findings from a forthcoming study; details will be made available upon publication

Electronic Qubit Control:
The Winning Secret Sauce

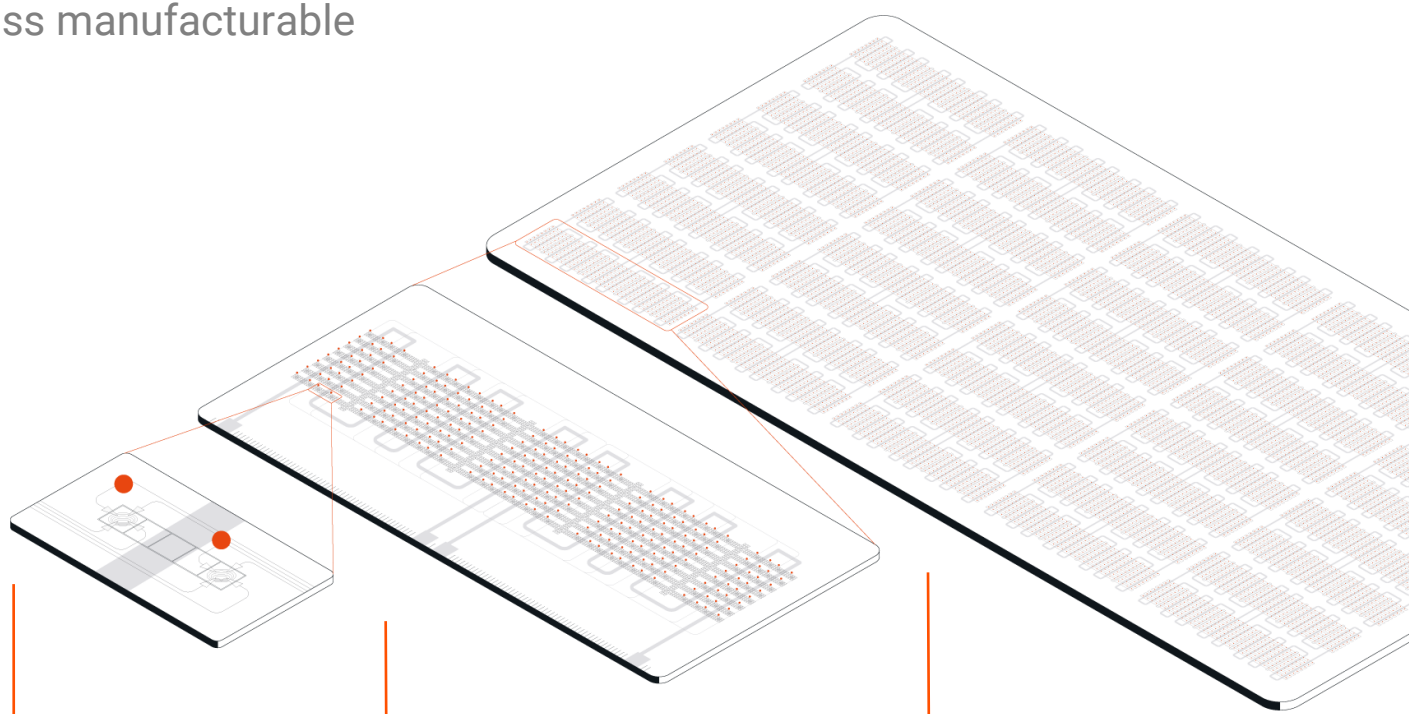
Using Silicon & Existing Semiconductor Supply Chain

- **Most Scalable**
- **World's Highest Fidelity**
- **Fastest Time to Solution**
- **Mass Manufacturable**



Scaling Quantum the Semiconductor Way

Simple, scalable and mass manufacturable



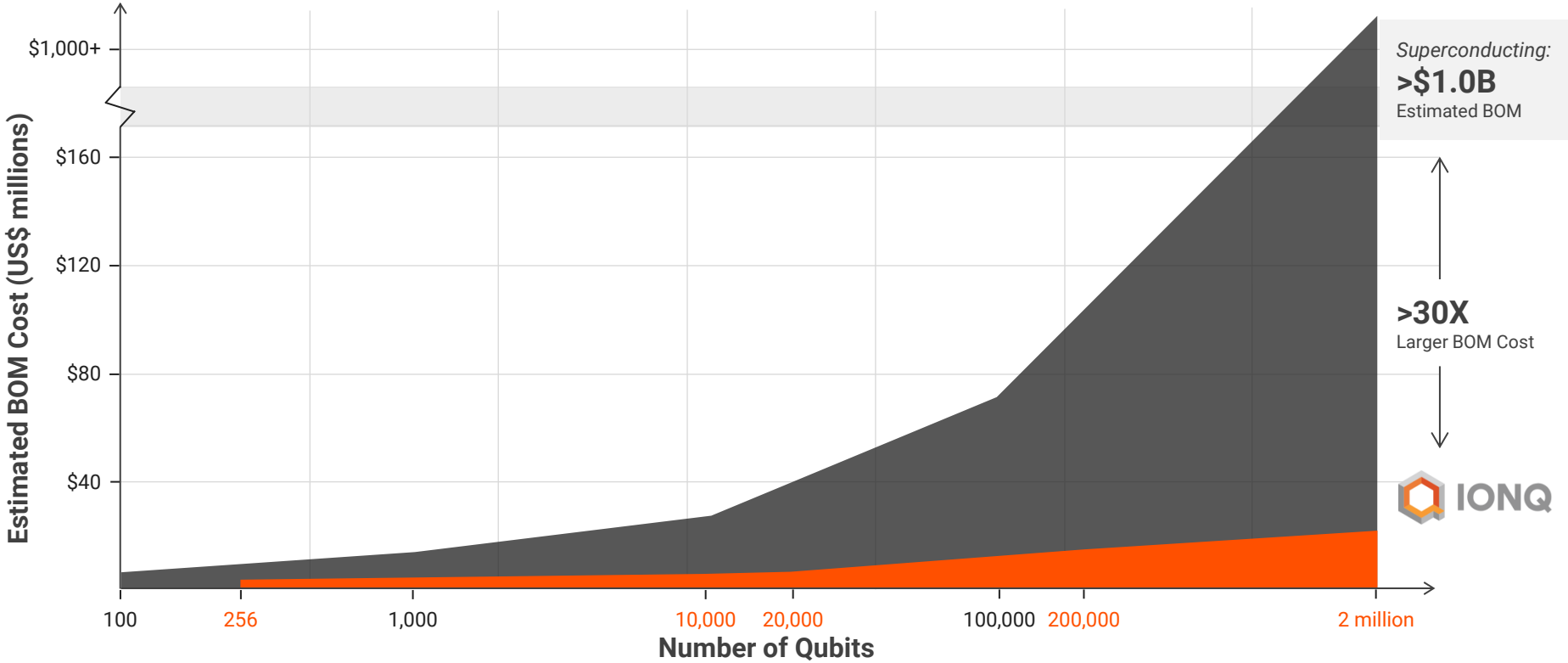
2-qubit
unit cell

256-qubit
quantum computer

10,000-qubit
quantum computer

Best-in-Class Economics

Lowers cost per logical qubit



Source: IonQ data estimated by Kearney; Superconducting data taken from publicly available information using reasonable extrapolation assumptions
Note: x-axis represented on a log scale

04

Creating An Ecosystem: Photonic Interconnect

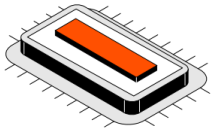
Dr. Chris Monroe
Chief Scientific Advisor & Co-Founder

Dr. Mihir Bhaskar
Sr. Director, Quantum Interconnects

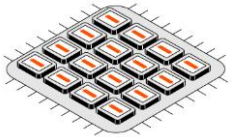
Quantum Compute Follows the Path of Cloud Compute

We are building the most efficient on-ramp for mass adoption

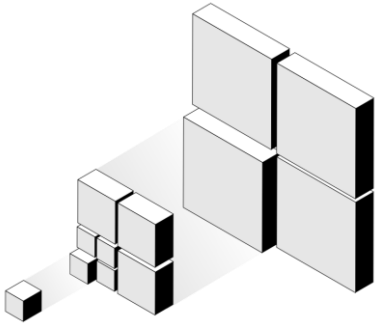
Cloud Computing



Single Core



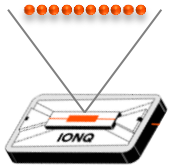
Multi-Core



Compute Cluster

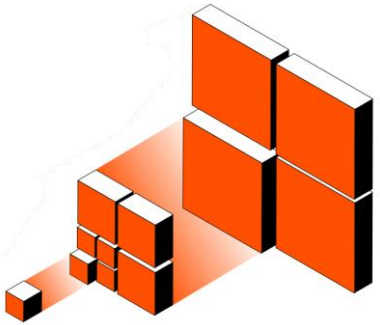
Trillion Dollar Cloud

IONQ



Single Chain

Multi-Unit Cell



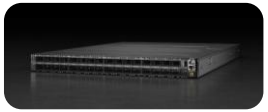
QPU Cluster

Quantum Datacenter Cloud

Interconnect Enabling Datacenter Scale

Interconnect as a sustainable competitive advantage

H100 GPU



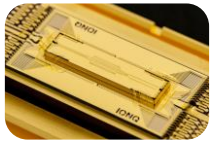
Infiniband

Datacenter Scale GPU Computing

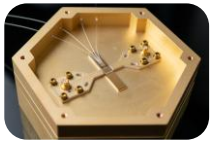
Powerful Compute Module

Differentiated Datacenter Interconnect

Scalable System Design



Ion trap QPU



Quantum Interconnect

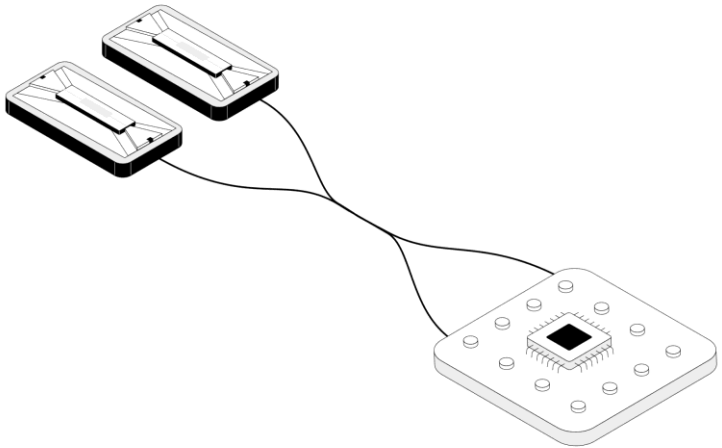
Datacenter Scale Quantum Computing

Datacenter Scale
=
Ecosystem Advantage

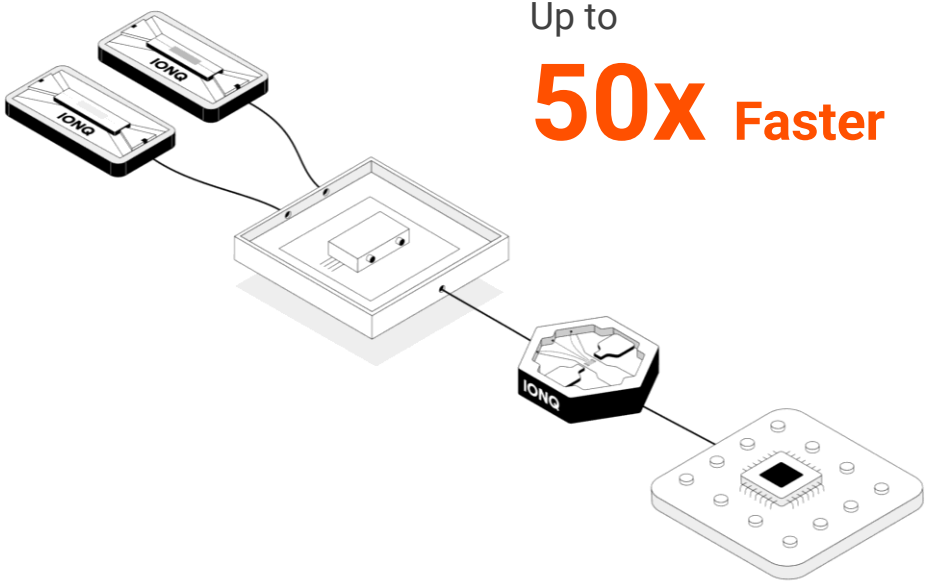
Source: NVIDIA product images

Quantum Memories Increase Interconnect Speed

No Memory



With Memory



Up to

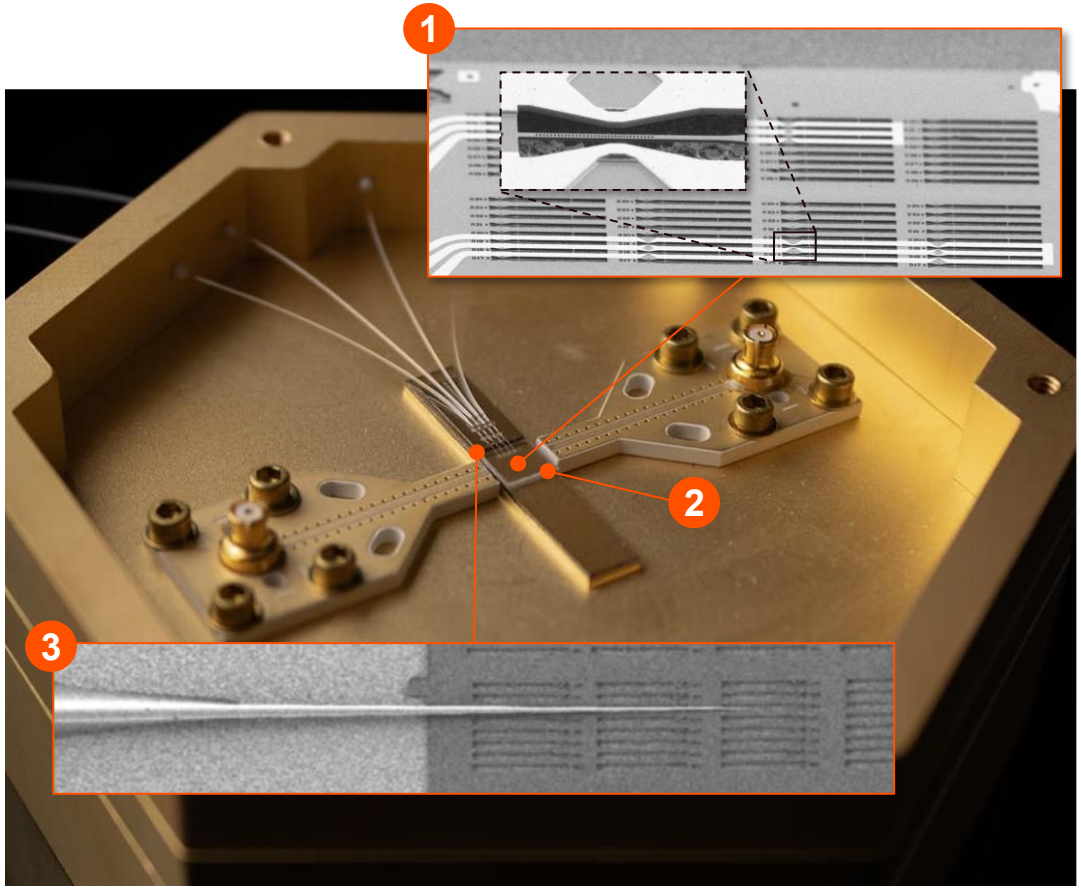
50x Faster

Lightsynq Quantum Memory

1 Leading quantum memory
Proven to enhance networking rates over quantum channels

2 Integrated Photonics Approach
Foundry-compatible nanofabrication for performance at scale

3 Proprietary Fiber-to-Chip Coupling
Insertion loss 10x+ better than industry standard techniques



Built for Scalability

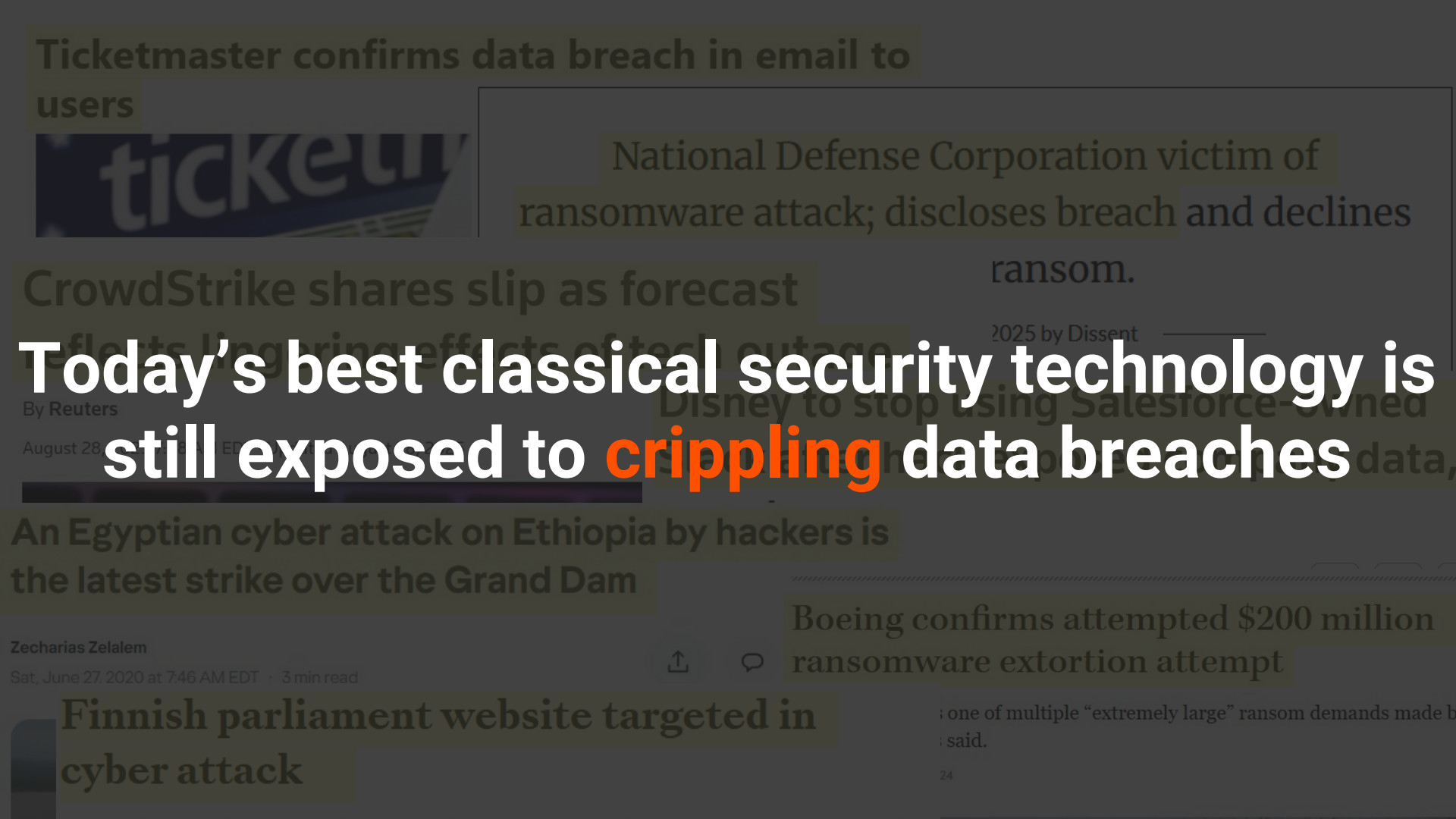
- Faster Transmission
- Optimal Performance
- Scalable Design & Foundry

05

Quantum Networking

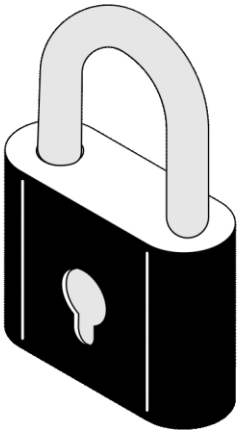
Jordan Shapiro
President & GM, Networking

Dr. Grégoire Ribordy
CEO, ID Quantique



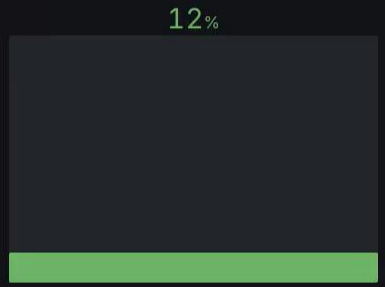
Today's best classical security technology is still exposed to crippling data breaches

Quantum Computing Progress Creating Risk to Traditional Networking



*"Cryptographically relevant quantum computers (CRQC) may be possible in **as soon as three years**. CRQCs would break all current encryption keys–posing an **existential threat** to national security and the global economy."*
– US Department of War Research & Engineering

Quantum Key Distribution Is Today's Solution



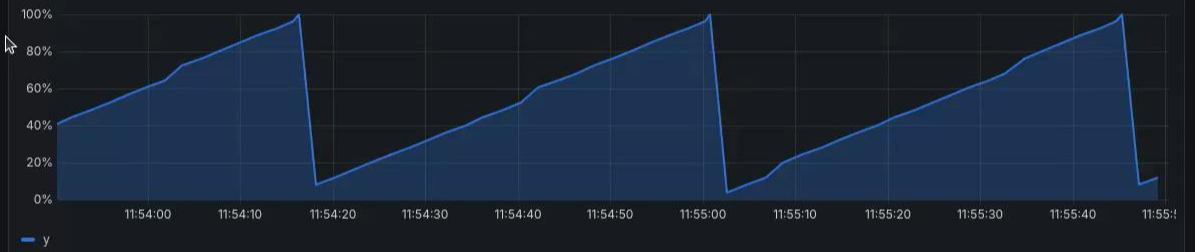
ID Quantique, an IonQ Company

Last 2 minutes

Refresh

QBER

Key Generation Buffer



QKD Logs

```
> 2025-09-05T11:54:23.120 DEBUG [cervino::communicator::QberRegulation] QBER = 0.0227347
> 2025-09-05T11:54:23.120 INFO  [cervino::communicator::QberRegulation] Regulating QBER: modulator bias = 3.55808 V, QBER = 0.0245991
> 2025-09-05T11:54:23.120 DEBUG [cervino::communicator::VisibilityRegulation] Visibility = 0.942552
> 2025-09-05T11:54:22.123 DEBUG [cervino::communicator::QberRegulation] QBER = 0.02746
> 2025-09-05T11:54:22.123 DEBUG [cervino::communicator::VisibilityRegulation] Visibility = 0.93895
> 2025-09-05T11:54:22.123 INFO  [cervino::communicator::VisibilityRegulation] Regulating visibility: IF temperature = 30.0201°C, visibility = 0.941756
> 2025-09-05T11:54:22.138 INFO  [cervino::communicator::PrivacyAmplification] Key-block filling percentage: 12.1%
> 2025-09-05T11:54:21.121 DEBUG [cervino::communicator::QberRegulation] QBER = 0.0273747
> 2025-09-05T11:54:21.121 DEBUG [cervino::communicator::VisibilityRegulation] Visibility = 0.938938
> 2025-09-05T11:54:20.125 DEBUG [cervino::communicator::QberRegulation] QBER = 0.0289808
> 2025-09-05T11:54:20.125 DEBUG [cervino::communicator::VisibilityRegulation] Visibility = 0.952723
> 2025-09-05T11:54:20.143 INFO  [cervino::communicator::PrivacyAmplification] Key-block filling percentage: 8.0%
> 2025-09-05T11:54:19.117 DEBUG [cervino::communicator::QberRegulation] QBER = 0.0242226
> 2025-09-05T11:54:19.117 DEBUG [cervino::communicator::VisibilityRegulation] Visibility = 0.947478
> 2025-09-05T11:54:18.126 INFO  [cervino::communicator::PrivacyAmplification] Current compression ratio: 0.221439
```

Delivering Quantum Key Distribution Products Today

Commercially Available Quantum Security Products

Clavis XG QKD System
Technology Readiness Level 9

First Certified QKD System in the World

NSR 국가보안기술연구소 National Security Research Institute

ISO

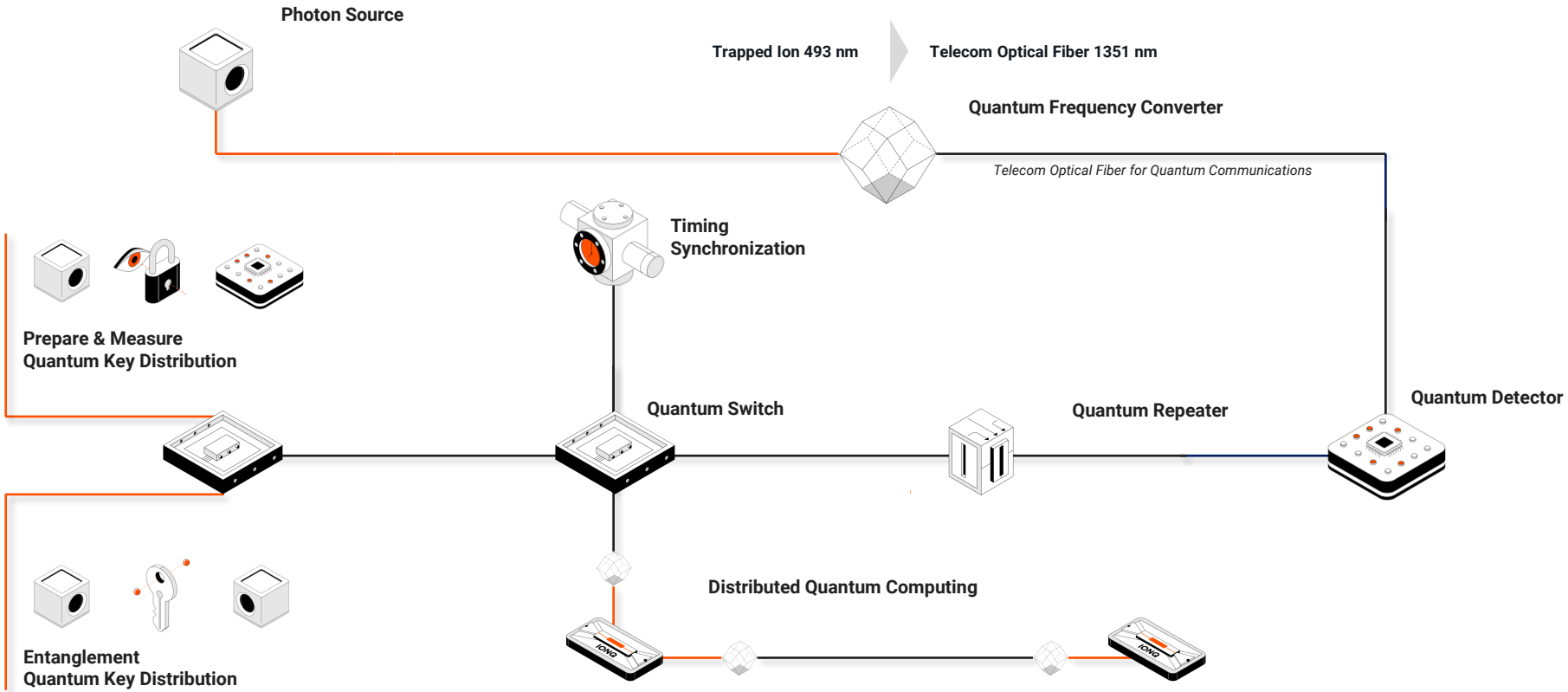
Commercial Adoption Driving Value Creation

Leading Telecom, Financial and Government Customers Worldwide

Interoperability Partnerships with Global Networking Giants

Building the Comprehensive Suite of Networking Products to Enable Quantum Data Centers

One-Stop-Shop for Full Quantum Networks

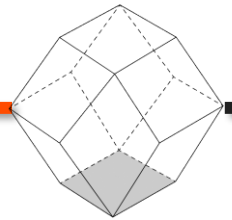


Photon Source

Quantum Frequency Converter

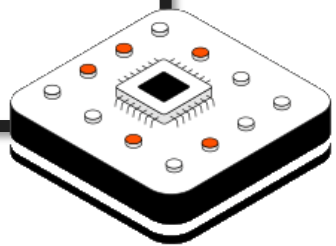
Trapped Ion
493 nm

Telecom Optical Fiber
1351 nm

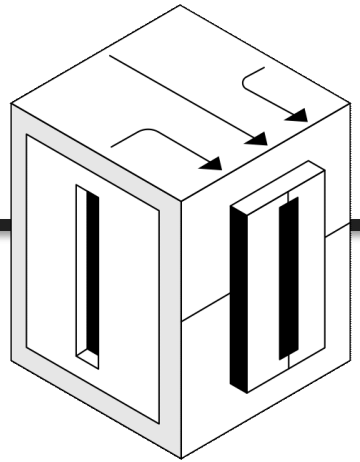


Telecom Optical Fiber for Quantum Communications

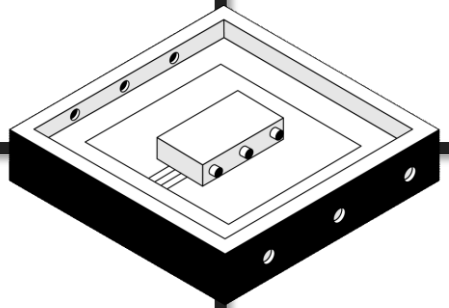
Quantum Detector



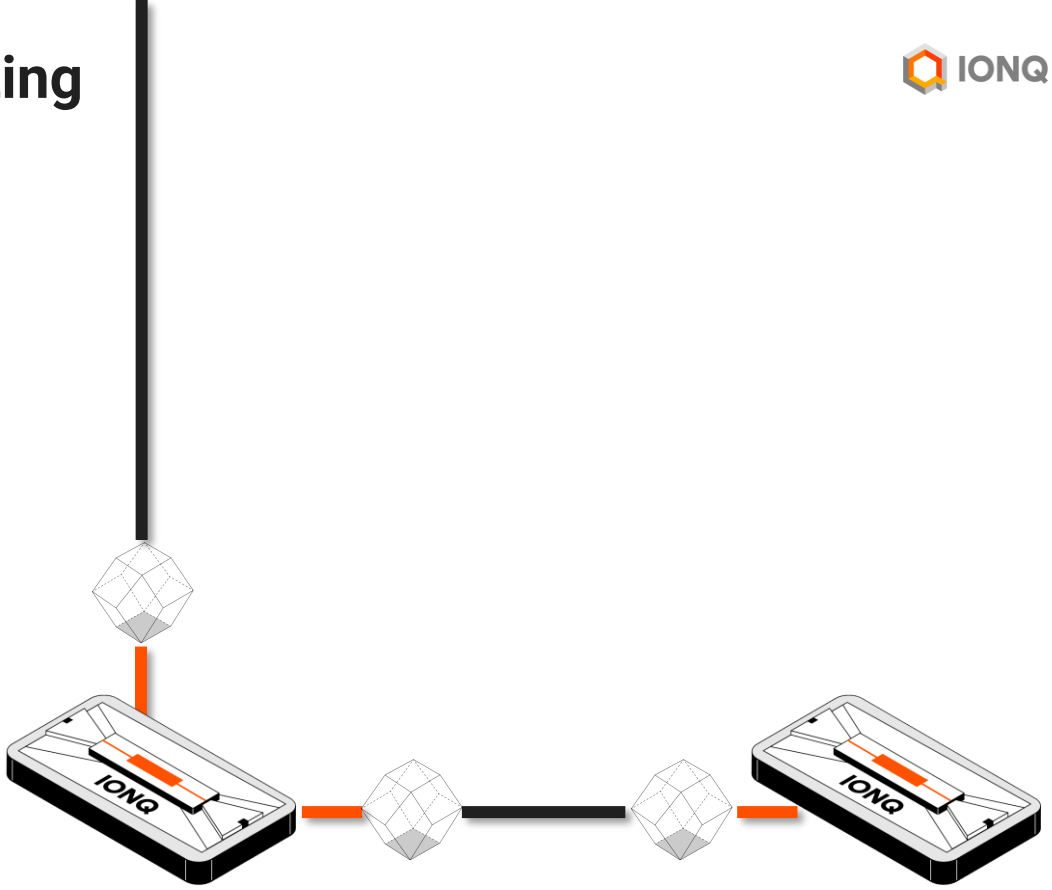
Quantum Repeater



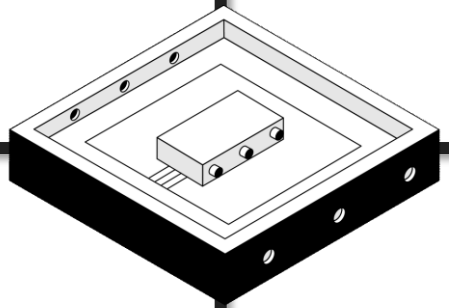
Quantum Switch



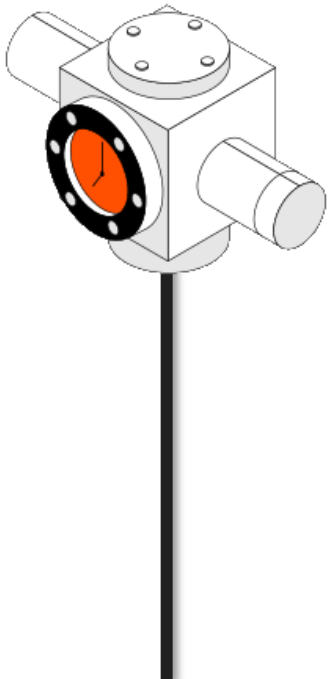
Distributed Quantum Computing



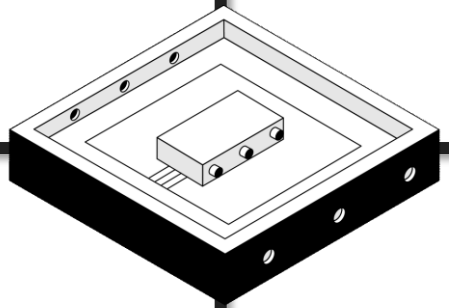
Quantum Switch



Timing Synchronization

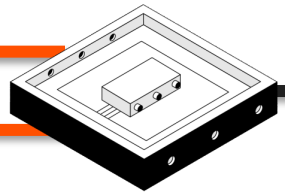


Quantum Switch



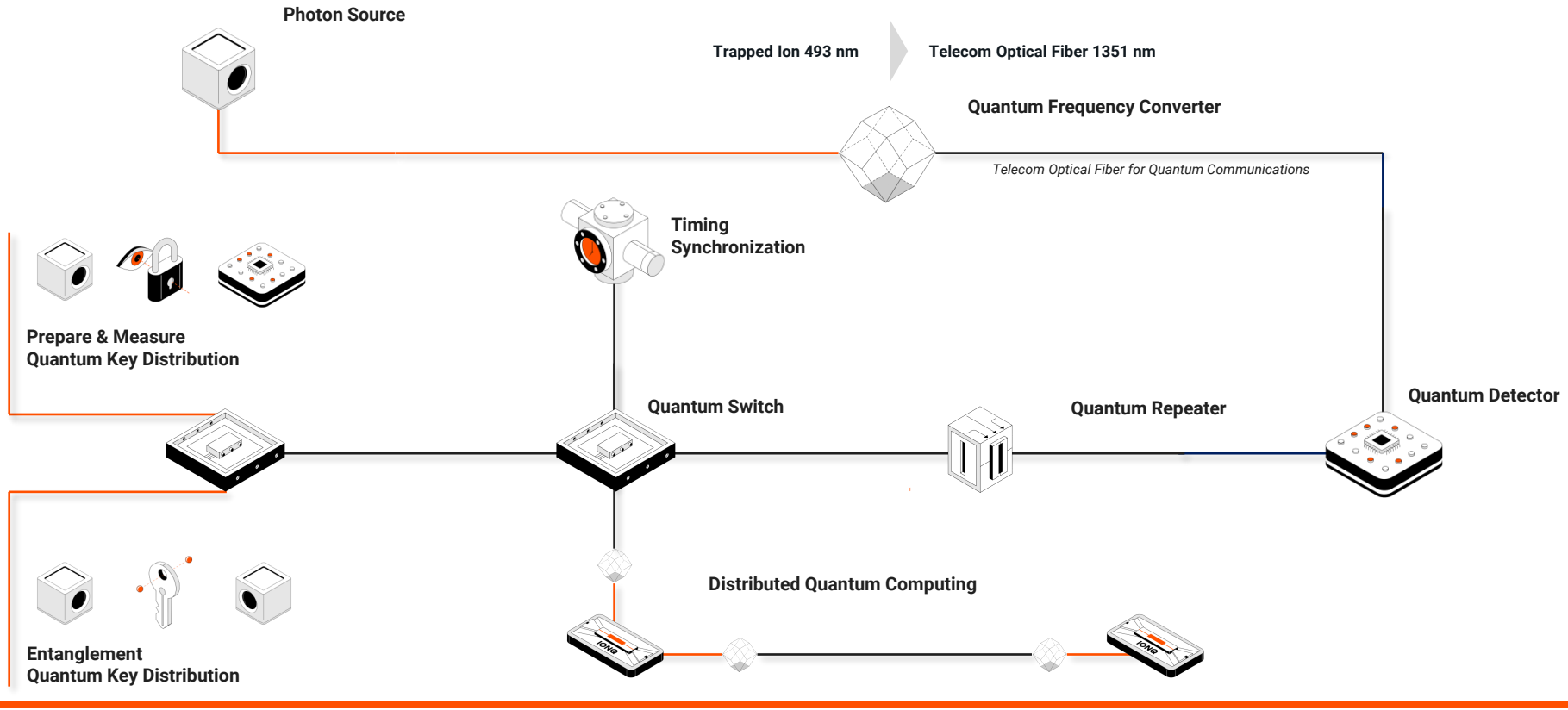
Quantum Key Distribution

Prepare & Measure
Quantum Key Distribution

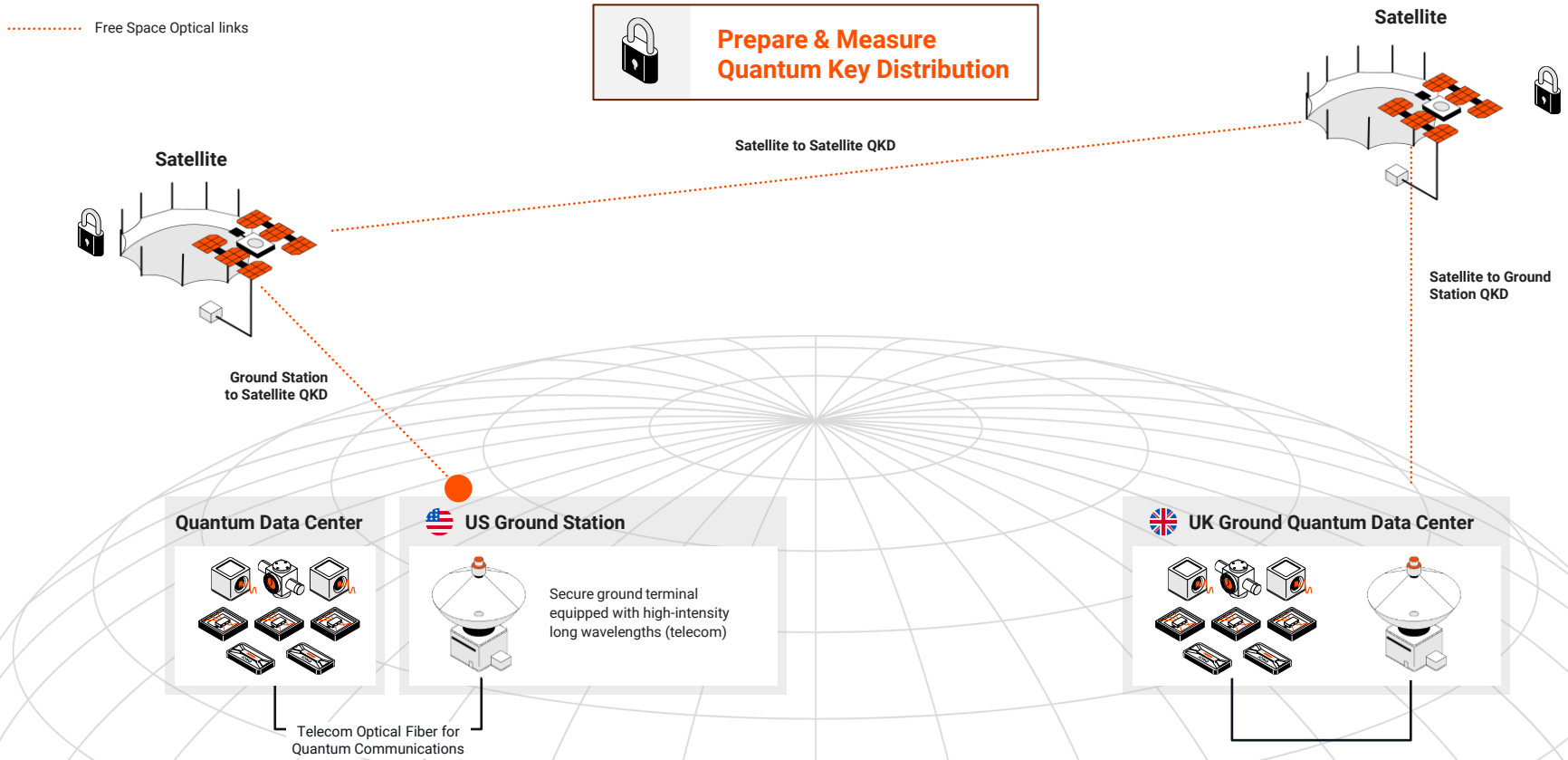


Entanglement
Quantum Key Distribution

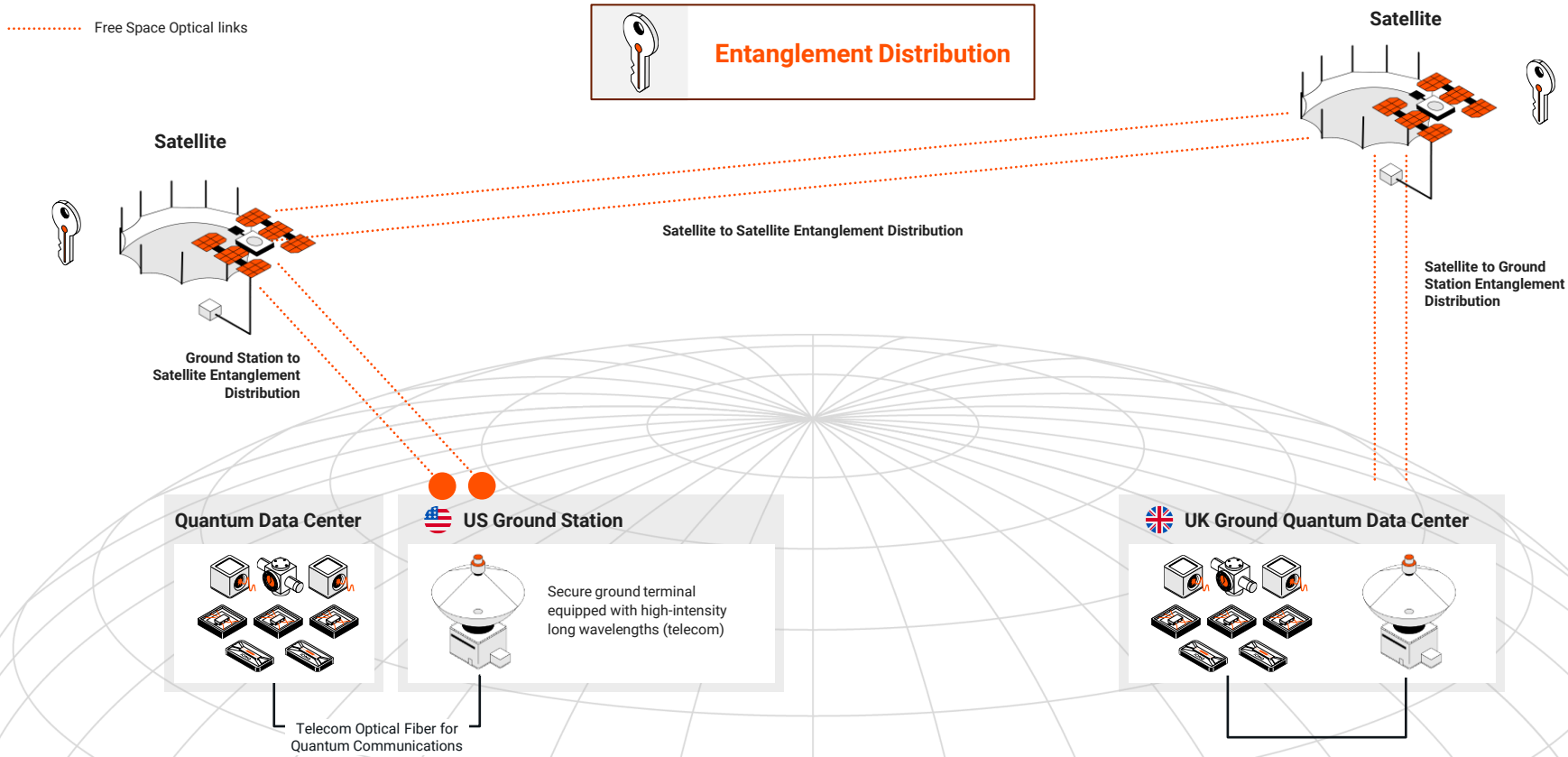
One-Stop-Shop for Full Quantum Networks



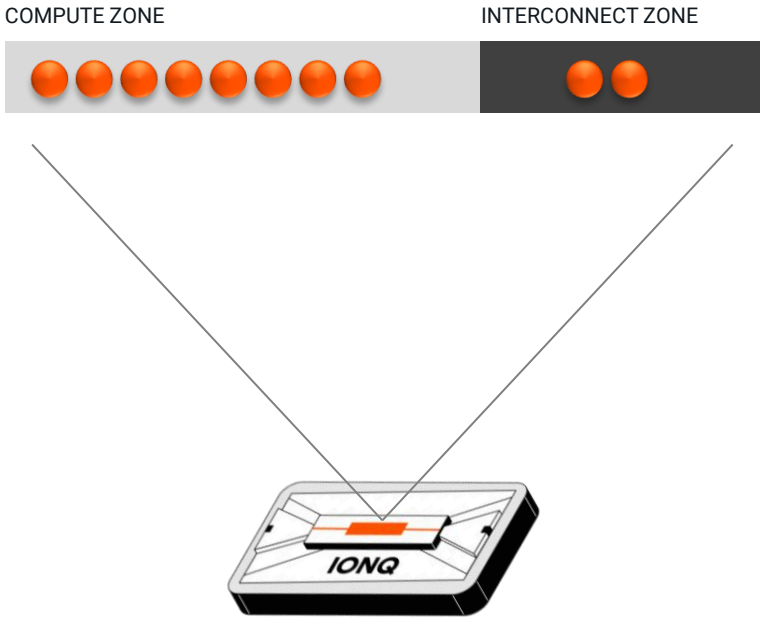
Vision for the Global Quantum Internet



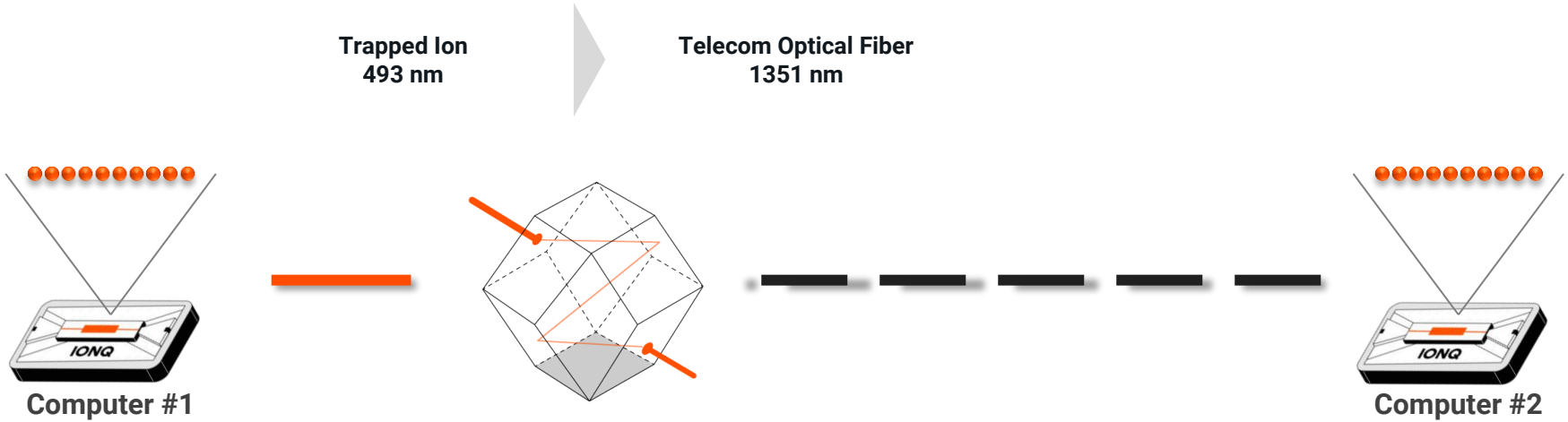
Vision for the Global Quantum Internet



Case Study: Achieving Remote Entanglement Distribution Milestones with AFRL



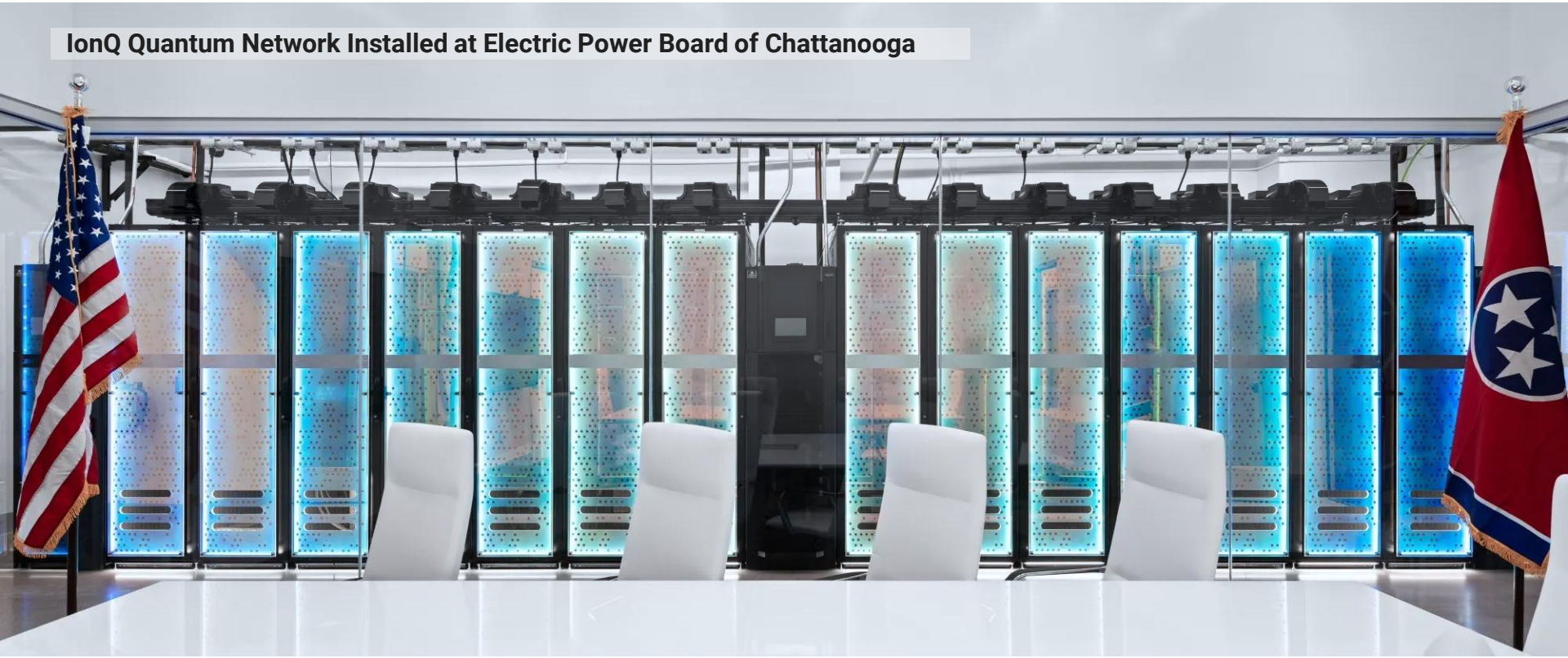
Case Study: Achieving Remote Entanglement Distribution Milestones with AFRL



Commercially Deployed Quantum Networks

IONQ

IonQ Quantum Network Installed at Electric Power Board of Chattanooga



Commercially Deployed Quantum Networks

IonQ Quantum Network
Installed at SK Telecom

Q&A Session

06

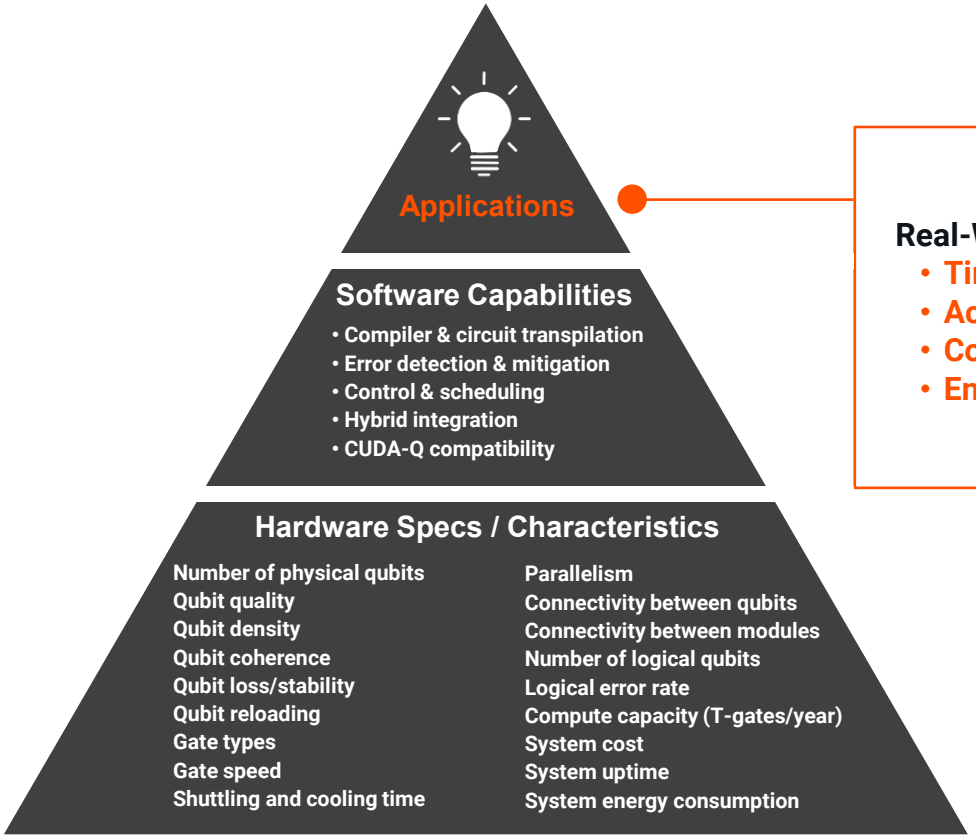
Enterprise-Grade Applications

Ariel Braunstein
SVP, Product

Quantum Applications

Making The Right Technology Choices

Application Results Driven by System Capabilities



Real-World Outcomes

- **Time** to solution
- **Accuracy** of solution
- **Cost** to solution
- **Energy** to solution

1. **Multimodal Reasoning**
2. **Image Change Detection**
3. **Portfolio Rebalancing**
4. **Decryption (Shor)**

Leading in Accuracy, Speed, Cost, and Energy to solution

Meaningful fault tolerant application of increasing complexity (2030 estimation)

1 AI Multimodal Reasoning

Enables medical diagnostics, sensor fusion, video and text reasoning, sentiment analysis, etc.

40x faster time to solution

2 Image Change Detection

Applicable to satellite imaging, insurance, environmental monitoring, and intelligence

20x lower energy consumption

3 Portfolio Rebalancing

Enable more efficient, resilient, and optimized portfolios

170x lower energy consumption

- ✕ Quantinuum
- ✕ Infleqtion

4 Decryption (Shor's Algorithm)

Cybersecurity & blockchain: RSA-2048 (TLS/SSL/Web), ECC-256 (Bitcoin, stablecoins)

2.5x better cost to solution

- ✕ Quantinuum
- ✕ IBM
- ✕ Infleqtion
- ✕ PsiQuantum

Source: Implied future performance based on publicly available roadmaps

Winning in Today's
Mission-Critical Application Benchmarks

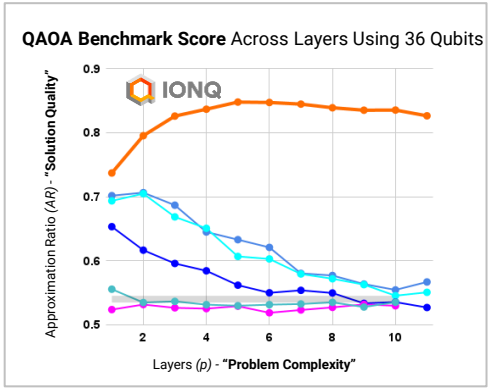
Outperforming Peers With Real-World Applications

IonQ is leading on mission-critical application benchmarks

34.7%

improvement in solution quality compared to IBM's current highest performing quantum system

11 layers

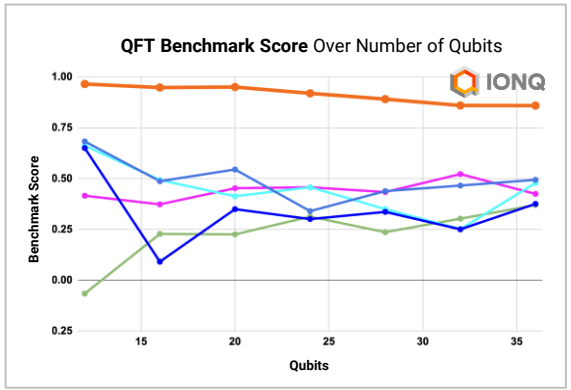


Solving complex optimization problems where exact solutions are intractable.

73.9%

improvement in solution quality compared to IBM's current highest performing quantum system

At 36 qubits

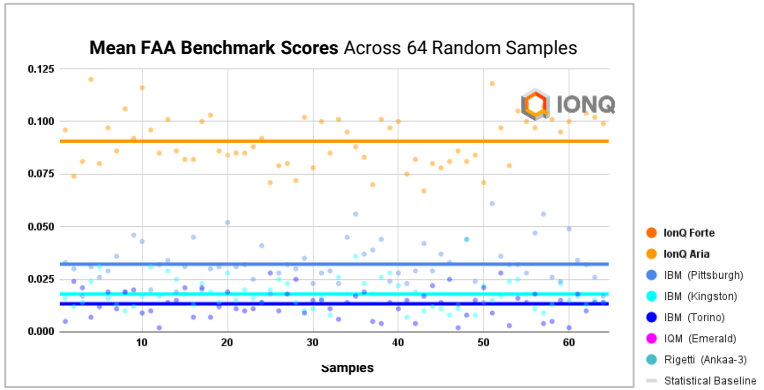


Foundation for algorithms like Shor's, mapping quantum states into frequency space.

181.6%

improvement in average score compared to IBM's current highest performing quantum system

Across 64 samples



Finds optimal solutions in large or noisy datasets for real-world performance.

Source: IonQ preliminary internal data; 3rd party independent research

Early Applications Massive Opportunities

IONQ

Pharma & Healthcare	Protein folding 	Lead optimization 	Drug synthesis catalysts 
Logistics	Logistics center location 	Carrier shipment selection 	Vehicle dispatching 
Service Industries	Contact center AI model 	Anomaly detection 	More to come…

** Not an exhaustive list*

Accelerating Drug Development through Enhanced Simulations with AstraZeneca

Business and Technical Challenges

Traditional computing struggles to accurately and efficiently model complex transition metal catalysis

IonQ's Quantum Solution

QC-AFQMC delivers scalable, high-accuracy simulation of reaction energetics

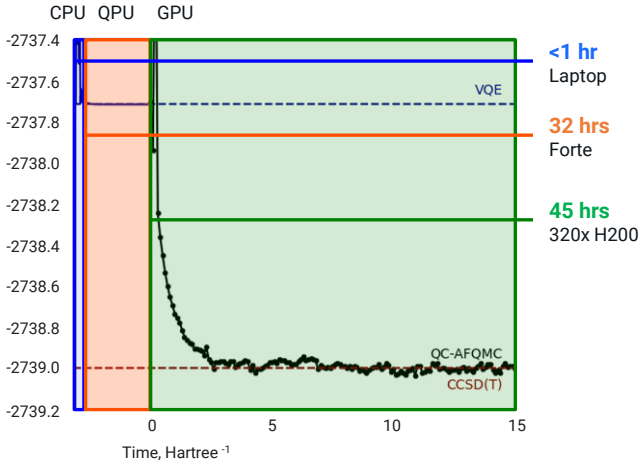
Business Impact

Enables faster, more cost-effective drug development and material design

IONQ NVIDIA aws AstraZeneca

20x

Faster time-to-solution than best previously published implementation



arXiv:2404.18303

Quantum AI Case Study

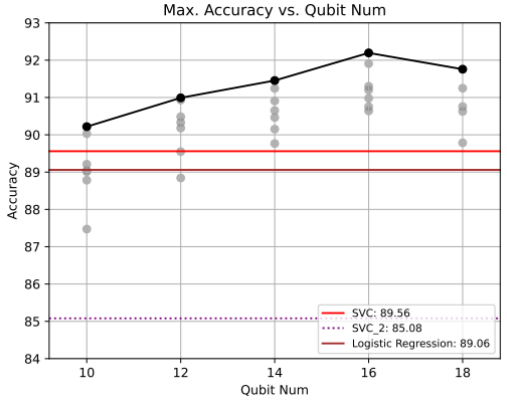
Quantum Hybrid LLM Fine-Tuning Boosts Accuracy and Efficiency

Business and Technical Challenges:
Classical LLMs struggle with sparse, complex, or proprietary data

IonQ's Quantum Solution:
Hybrid fine-tuning adds quantum layers to pre-trained LLMs, improving small dataset learning and outperforming classical ML models

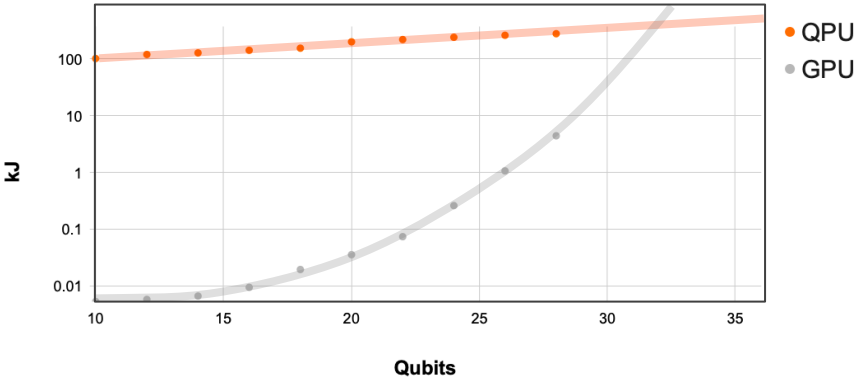
Business Impact:
Improves accuracy by 3.14% and reduces energy use at scale, delivering practical quantum benefits from 46 qubits

Scaling Efficiently Beyond Classical



arXiv:2504.08732

Average Inference Energy Consumption of Fine-Tuning Circuit



Quantum AI in Action

Smarter, More Energy Efficient, Less Resource Intensive

07

Customer and Partner Momentum

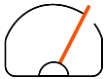
Rima Alameddine
Chief Revenue Officer

Margaret Arakawa
Chief Marketing Officer

From Insight to Impact

Two Types of Buyers

Mission Driven



ROI Driven

Go-To-Market Pillars

Building Quantum Economies

Enabling Governments

Creating Commercial Value

Scaling Through Partnerships

Quantum is Now.

IonQ Driving the Quantum Revolution

1970s - present

Distributed Computers

Compute in the hands of millions of consumers and businesses

1993 - present

Internet

Network to communicate, collaborate, and **transact securely and quickly**

2002 - present

Cloud

Massive compute power at much lower costs for developers and organizations

2022 - present

AI

Intelligent compute leading to massive **productivity** gains

TODAY

IonQ Quantum

Leveraging 50+ years of tech innovation to solve complex problems with the:

- Highest performance
- Lowest cost
- Greatest scalability
- World class security

IonQ Full Stack Quantum Innovation

IonQ Applications Development

Commercial Applications

HYUNDAI · AIRBUS · DESY. · GE Research · Thompson CAT · AFRL · Oak Ridge National Laboratory

On-Prem or Cloud Access

IONQ · Microsoft Azure · Amazon Braket · Google Cloud

IonQ Quantum Software

- IonQ Hybrid Services
- SDKs, APIs, Compilers, Cross-Platform Libraries
- IonQ Quantum OS

IonQ Quantum Hardware

Aria	Forte	Forte Enterprise	Tempo	Future Systems
				

IonQ Quantum Networking

- End-to-end Quantum Networks
- Quantum Internet
- Distributed Quantum Computing
- Quantum Key Distribution (QKD)

Trusted by Top Global Customers and Partners

Enabling breakthroughs with leading enterprises and organizations

Enterprise

HYUNDAI · T-Mobile · AstraZeneca · GENERAL DYNAMICS · HITACHI ABB · Ansys · CISCO · SAMSUNG · NVIDIA · LOCKHEED MARTIN · AIRBUS · GE Research

Ecosystem Partners

NVIDIA · Google Cloud · DELL · Intellian · Q-CTRL · TOYOTA TSUSHO · Amazon Braket · Microsoft Azure · SK · elementsix · imec · NKT Photonics

Government | National Labs | Universities

DARPA · AFRL · Pacific Northwest NATIONAL LABORATORY · KiSTi · QuantumBasel · SUNG KYUN KWAN UNIVERSITY · Oak Ridge National Laboratory · ARLIS · GDIT · AIST · UNIVERSITY OF MARYLAND · epb Quantum · SQC SOUTH CAROLINA QUANTUM

Aug 2024

University of Maryland $9M Partnership

IonQ and the University of Maryland sign partnership to drive quantum innovation

Sept 2024

United States Air Force Research Lab Awards $54.5M Contract

IonQ awarded largest 2024 U.S. quantum contract by the United States Air Force Research Lab to enable **scaling and networking** of quantum systems

Nov 2024

New Chemistry Application with NVIDIA CUDA-Q

Application demonstrates the seamless workflow behind hybrid quantum-classical approaches to calculate the **specific properties of a molecule's electronic structure**

Dec 2024

IonQ Flagship Quantum Computer in Europe

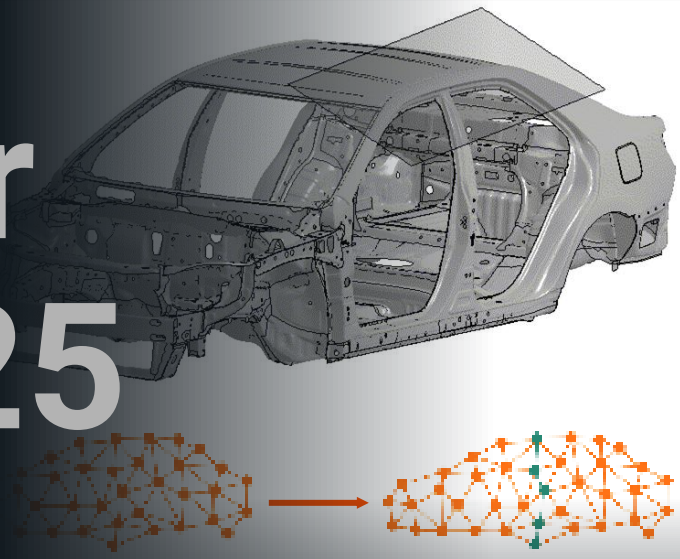
IonQ flagship system, Forte Enterprise inaugurated at **QuantumBasel tech hub in Switzerland**

Jan 2025

IonQ Anchors Maryland's $1 Billion "Capital of Quantum" Initiative

Governor Wes Moore announced "Capital of Quantum" initiative **with IonQ as the anchor of a state-of-the-art quantum intelligence campus**

Mar 2025



Showcasing Quantum Outperforming Classical with Ansys

Demonstration on an IonQ production system shows **12% faster performance** over the classical computing alternative

Apr 2025

Global Availability of IonQ Forte Enterprise Through Amazon Braket

IonQ's flagship quantum computer with #AQ36 performance accessible **globally in production via IonQ Quantum Cloud and Amazon Braket**

Apr 2025

Shaping the future of quantum computing with DARPA

IonQ selected by DARPA for Quantum Benchmarking Initiative (QBI) **to advance quantum computing**

Apr 2025

$22M Partnership with EPB to create Quantum Computing & Networking Hub in US

IonQ partnering with EPB to be the **first utility company in the world** to commercially offer quantum computing, networking, and app development

Apr 2025

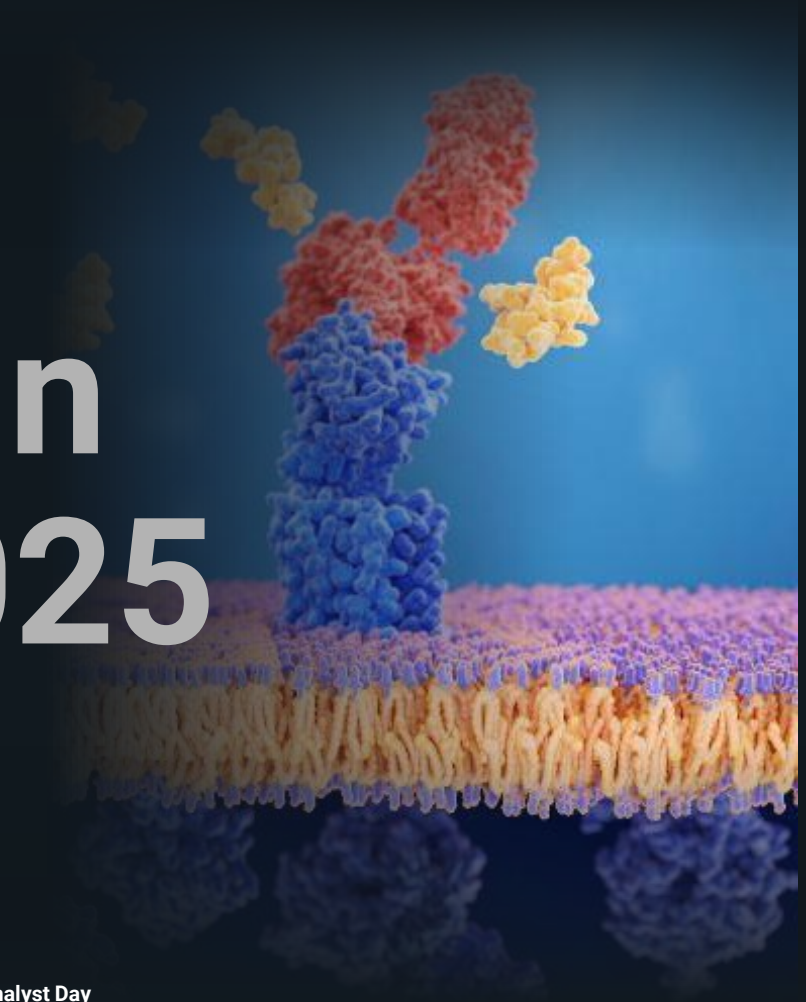
Japan’s National Institute of Advanced Industrial Science (AIST) Signs MOU with IonQ

IonQ is partnering with AIST’s to develop advanced hybrid-quantum computing technologies to build a **global quantum business ecosystem.**

May 2025

IonQ Partners with Sweden's Einride on Logistics for Autonomous Driving Solutions

IonQ and Einride to develop quantum solutions for **fleet routing, logistics optimization, and supply chain solutions**



Jun 2025

IonQ Announces Collaboration with AstraZeneca

IonQ will be leveraging the power of their quantum experts and AstraZeneca's world-class scientists to jointly develop applications

Jul 2025

Primary Quantum Partner for Korea's National Quantum Center of Excellence

IonQ will parter with Korea Institute of Science and Technology Information (KISTI) to develop their quantum center of excellence **designed to support academic and enterprise applications**

Sep 2025

Diamond Materials Breakthrough with Element Six (DeBeers Group)

Advancement marks pivotal move toward **diamond-based quantum devices** that will **accelerate IonQ's roadmap** toward scalable, fault-tolerant quantum systems

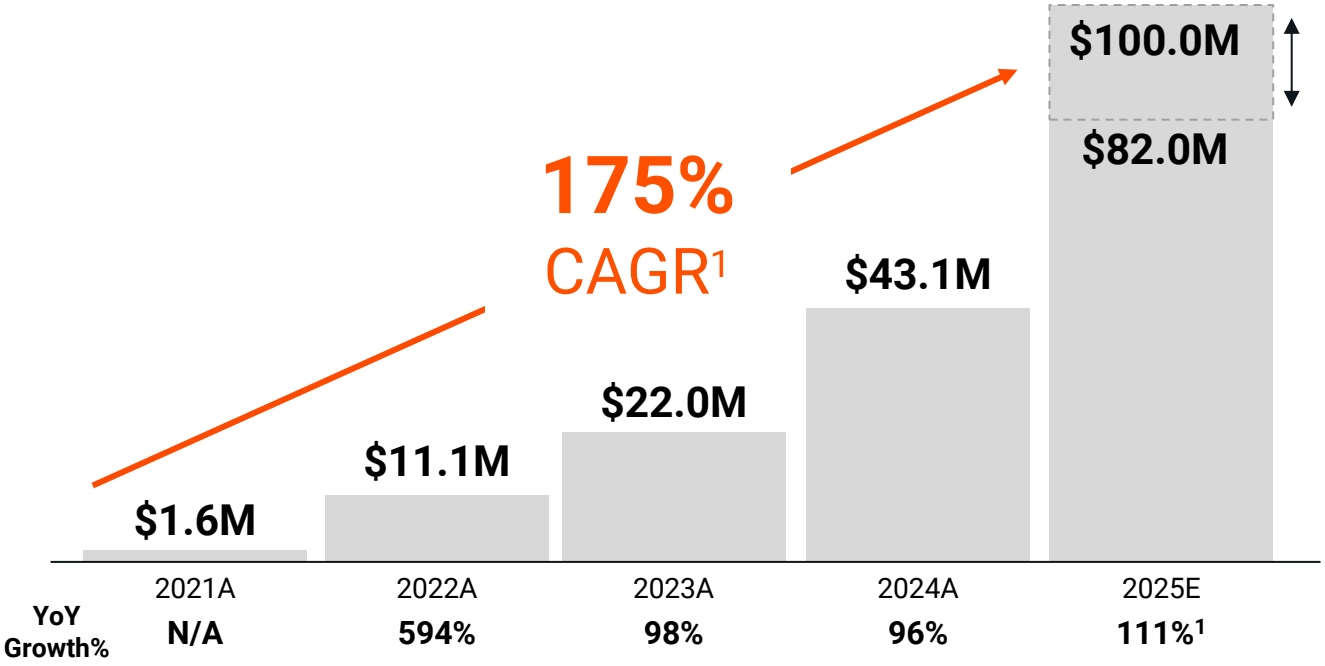
08

Financial Update

Inder Singh
Chief Financial Officer and
Chief Operating Officer

Strong Adoption and Expanded Opportunity Set Drive Growth

IonQ has been approximately doubling GAAP revenue year-over-year



1. Growing customer adoption
2. Diversified business (compute, networking, space)
3. Broader opportunity set than ever before

1. CAGR and year-over-year growth represented based on midpoint of 2025 revenue guidance range ($91.0M)

Revenue guidance range

Unit Economics Secure Our Long-Term Margin Opportunity

Our total cost of ownership and lower BOM costs give us a natural competitive advantage

Cost of Acquisition — Cheapest cost per logical qubit

Cost to Compute — Lowest energy consumption

Deployment Viability — Less space required for safe operation

IonQ Is Practical For Datacenter Scale Deployment

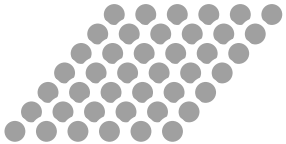
Note: Figures as compared to average of competitor lanscape

Our Strong Cash Position Fuels Our Growth Mindset

IonQ is well-capitalized to expand our quantum ecosystem

Capital Structure

$1.68 Bn
in cash and equivalents

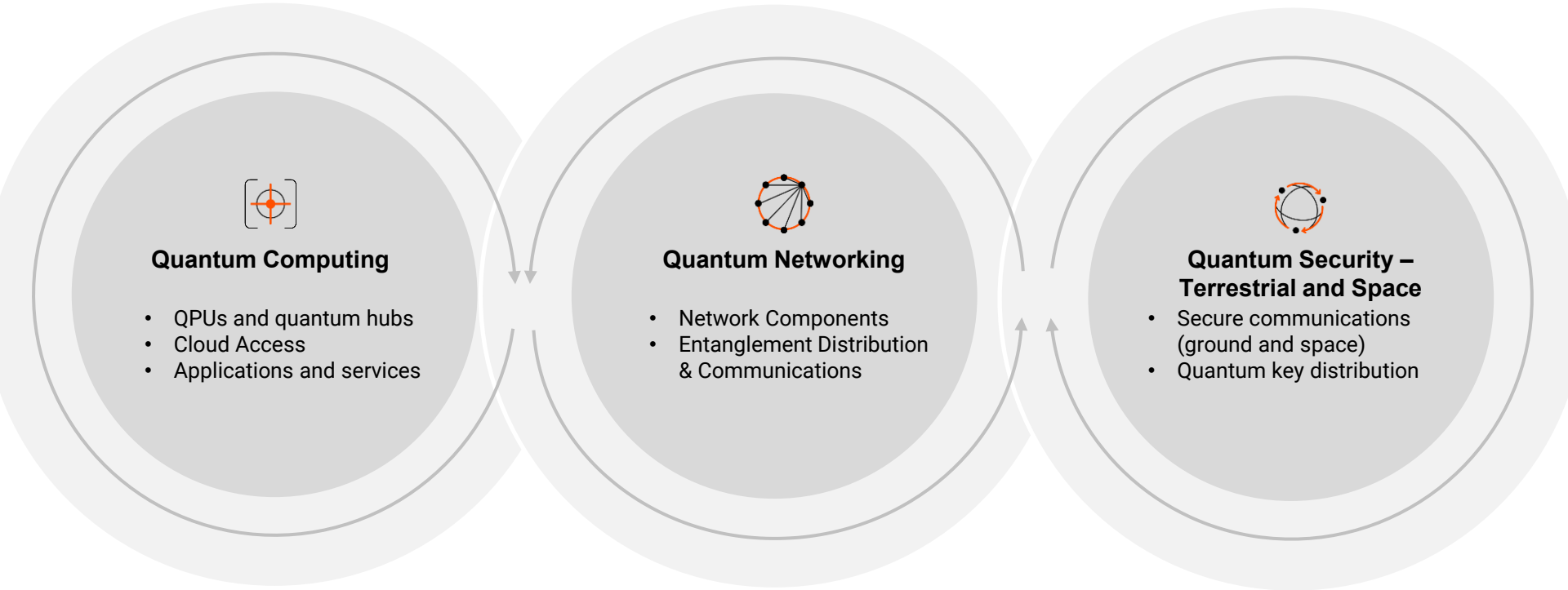


$0
in debt

1. **Invest in R&D**
2. **Scale the infrastructure**
3. **Build applications**
4. **Attract talent**
5. **Maintain flexibility**

We Are Developing The Quantum Ecosystem

Our multi-product strategy creates a flywheel effect



Global Footprint Enables Our Go-To-Market

Boston, MA, USA
Acquired Lightsynq in **May 2025**

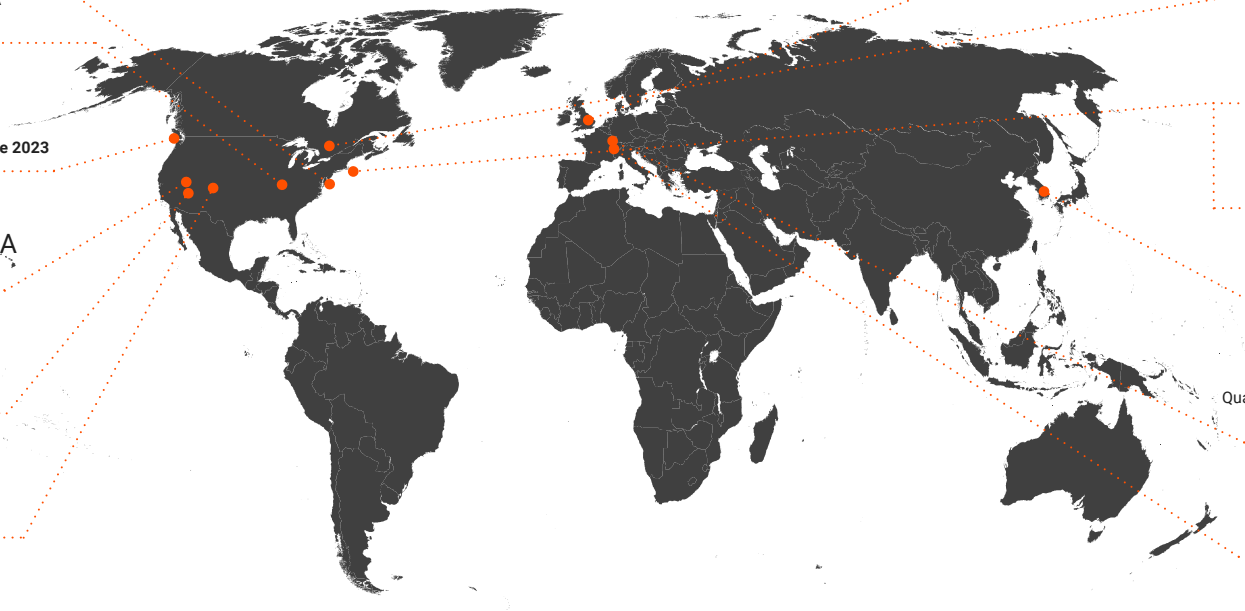
Chattanooga, TN, USA
Acquired Qubitekk in **Dec 2024**

Seattle, WA, USA
Opened manufacturing facility in **June 2023**

San Francisco, CA, USA
Acquired Capella in **July 2025**

Vista, CA, USA
Acquired Qubitekk in **Dec 2024**

Louisville, CO, USA
Acquired Capella in **July 2025**



Oxford, England
Pending acquisition of Oxford Ionics signed in **June 2025**

Toronto, Canada
Acquired Entangled Networks in **Jan 2023**

Washington DC, USA
Acquired Capella in **July 2025**

College Park, MD, USA
IonQ Headquarters since **2015**

Seoul, South Korea
Acquired majority stake of ID Quantique in **April 2025**

Basel, Switzerland
Quantum data center through partnership with QuantumBasel in **July 2023**

Geneva, Switzerland
Acquired majority stake of ID Quantique in **April 2025**

Key Takeaways

IonQ is the leader in quantum computing and quantum networking delivering value to enterprise and government customers today

1. Secures Regulatory Approval from the UK Investment Security Unit for the Acquisition of Oxford Ionics
2. 36 Quadrillion Times Larger Computational Space than IBM
3. Roadmap to 2 million Qubits on a Chip, Scaling the Same Way as Semiconductors
4. Achieves 99.99% 2 Qubit Gate Fidelity, the World Record Fidelity & Needed for Scaling Better Qubits
5. “Cryptographically relevant quantum computers may be possible in as soon as three years" – Dept. of War
6. We are Building and Deploying Quantum Applications Today

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Fireside Chat

Niccolo de Masi
Chairman & CEO

Martin Roetteler
VP of Quantum Solutions

Microsoft

Marco Pistoia
Senior VP of Industry Relations
JP Morgan | IBM

Rick Muller
VP of Quantum Systems

IARPA | Sandia National Labs

Robert Cardillo
Executive Chairman of IonQ Federal
National Geospatial-intelligence Agency (NGA)


NATIONAL GEOSPATIAL-INTELLIGENCE AGENCY
UNITED STATES OF AMERICA
Mr. Robert Cardillo


EXIT
DIR. WRAY
DIR. HASPEL

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Concluding Comments