

## Quantum Insider Insights: Volume 2 – IonQ-Google

At TQD access to our leading data platform - [The Quantum Insider](#) – allows us to provide deeper insights into the key recent quantum news.

### [IonQ Available on Google Cloud](#)

IonQ, a pioneer in the trapped-ion approach to quantum computing, announced a partnership with Google to make its technology available to Google customers through its cloud marketplace. The move represents a big win for the Maryland-based startup.

Key points in [our story in TQD](#):

- IonQ, Inc. announced that Google Cloud customers can purchase access to its quantum computers via the Google Cloud Marketplace, making IonQ the first third-party quantum computer on the Google Cloud Marketplace.
- The integration makes IonQ's high-fidelity 11 qubit systems available to all Google Cloud customers today, with the expectation of incorporating IonQ's next-generation 32 qubit system later this year.
- As the first quantum computer to be available to the public via Google Cloud, IonQ beat even Google's own quantum hardware on the cloud.
- Quantum Computing as a Service (QCaaS) is an increasingly interesting market that may offer a beginning glimpse into the emergence of initial access pricing.

### Observations

#### **A Vote for Trapped Ion?**

The news about the IonQ-Google partnership should interest quantum-watchers for a few reasons. First, the corporate-level view on this is that IonQ continues to position itself as a leader in commercializing quantum computing. The recent news that [it will go public through a special acquisition company, or SPAC](#), demonstrated that it has backing from major investors who think the company will be successful long-term, even if there is little immediate advantage from its technology.

Second, trapped ion is one of the approaches vying for dominance among other modes, such as superconducting qubits (such as Google's own QC) and photonic quantum computing. The question becomes: Is Google's partnership with IonQ an indication of the viability of trapped ion models?

IonQ explains its technology as tapping a naturally occurring quantum system -- individual atoms -- for quantum computation. The atoms are trapped in three-dimensional space and then lasers are used throughout the process -- from preparation to final readout. Google may be signaling that trapped ion is a superior form of quantum computation. The Quantum Insider lists the advantages of trapped ion approaches as high gate fidelity and stability, two critical Other trapped ion QC pioneers include [Honeywell Quantum Solutions](#) and [Alpine Quantum Technologies](#).

#### **The Insider View:**

Of course, there are many other reasons to explain the partnership between IonQ and Google. It could be just a coincidence, for example. Or, IonQ's business development team might just be

very good at finding and finalizing partnerships. IonQ's technology could also be further along than other forms -- and are getting an early seat in the Google cloud.

However, for the quantum computing community and investors seeking some idea on which approach will lead quantum, the Google-IonQ cloud partnership should be seen as at least an initial vote of confidence in IonQ, its science and its technology.

**Insider Voices:**

“With availability on the Google Cloud Marketplace, IonQ is making its solution accessible to more customers and developers. We’re committed to making it easy for customers to access, subscribe to, and benefit from partner solutions via our Marketplace, and look forward to working with IonQ.” -- Amy Bray, Global Head, Google Cloud Marketplace.

“This partnership expands the availability and use of quantum computing ten-fold and brings us that much closer to the first killer quantum application.” -- Peter Chapman, CEO & President of IonQ.

“We have been incredibly impressed with IonQ’s technology and are excited that their systems will now be available to customers via Google Cloud.” -- Nicholas Therkelsen-Terry, CEO of Max Kelsen, an AI & ML consultancy



**Matt Swayne, Editor and Analyst**

Matt Swayne is the editor of The Quantum Daily. He is a science and information officer at Penn State and has over 30 years journalistic experience. He has written extensively on the key quantum ethics issues, including numerous interviews with key industry thought leaders



**Alex Challans, CEO**

Alex Challans is the CEO of The Quantum Daily. He was previously an Investment Director of a London-based Private Equity fund, focussed on technology investments.