

Analyst Insights

US QC Supplier Rigetti's Recent Realignment: Positing Its Larger Implications

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SITUATION OVERVIEW

In early February 2023, pure-play quantum computing (QC) firm Rigetti Computing Inc announced the layoff of 50 employees, 28% of its staff, fueled in part by an effort to stave off a delisting of its stock from the Nasdaq exchange. To avoid that, Rigetti must maintain a per share price of above \$1 for ten consecutive days before a July 24th deadline. The announcement, coupled with a reshuffling of both CFO and CTO positions, also highlighted a revised technology roadmap for Rigetti that concentrates on the delivery of its Ankaa 84 qubit system in the first quarter of 2023, with increased 2-qubit gate fidelity, capable of demonstrating quantum advantage on a practical, operationally relevant problem over counterpart classical solutions.

- Rigetti Computing, founded in 2013, is a full-stack quantum computing supplier that operates its own rapid prototyping chip manufacturing capability for inclusion in its QC hardware offerings, supported by an in-house developed cloud access platform for software development.
- The company went public in October 2021 through a merger deal with a special purpose acquisition company, Supernova Partners Acquisition II Ltd, which at that time valued the company at \$1.5 billion. Rigetti's market cap had decreased to about \$126 million at the end of trading on the day of the announcement.

ANALYST INSIGHTS

A wide range of QC computing suppliers, existing and potential QC end users, QC-relevant policy makers, and QC investors, both private and public, will be weighing the importance of this announcement in the coming days and weeks. Opinions will be divided. Some will see this event as having little effect on the prospects of the QC sector writ large, considering it a normal retrenching by one of many QC computing suppliers seeking to re-align its research and product plans with shifting progress in the laboratory and in the market. Others, however, will view this development as a potential first indicator of a so-called quantum winter: a significant cooling of prospects for the sector built on the specter of QC performance overpromise and overfunding in the face of unrealized expectations.

- Indeed, there is no current consensus as to the likelihood or severity of a quantum winter. According to a recent Hyperion Research study, about one third of surveyed QC commercial respondents saw a perceived threat from a quantum winter - defined by the survey as a greater than 25% decline in investment in QC R&D that lasts more than three years - while 41% of respondents saw such an event as either highly or somewhat unlikely.

Although there has been a growing sentiment within the sector towards a lower chance of an industry-wide quantum winter, that does not necessarily mean that there will not be significant churn within the sector as existing quantum committing suppliers' fortunes rise and fall due to the vagaries of technology progress, market success, and, increasingly, financial forces; the last of which pure play QC suppliers, like Rigetti, or those that currently lack deep financial pockets, could be most vulnerable.

Regardless of how this particular realignment turns out for Rigetti, along with similar events that will almost certainly follow for other QC firms, attention must be paid to the effects of this announcement on the QC community, spanning suppliers, end users and investors. If viewed as a bellwether for the QC sector, the impact of this announcement could have a broad and decidedly negative impact on the trajectory of QC development, funding, and ultimately market progress. If viewed instead as a natural and, indeed, typical occurrence for a nascent, technological-leveraged firm where overall sector vitality transcends the fortunes of any single company, this announcement will be acknowledged, and the sector, with all of its constituent participants, will continue on its current trajectory.

Forces at play that may serve to bolster the latter scenario include strong and continued support from a wide range of US government QC promotion programs supporting direct R&D support, government QC-related R&D transfers to the commercial sector, and strategic domestic QC procurement policies, all mechanisms that can serve as a stabilizing force. Likewise, considerations must be made that the QC sector is a truly global phenomenon that operates with different perspectives on what defines success, or even progress, within the sector. For example, the spate of similar government QC promotion policies currently in place around the world span a range of policy goals including support to national security agenda items all the way to energizing a wide of range of advanced commercial QC end uses in sectors such as aerospace, biosciences, and energy. Finally, the wide range of QC developers vying for commercial success around the world are, in many cases, financed and otherwise supported by domestic or regional public and private institutions, each with their own metrics for gauging technological success, as well as envisioned end use and economic prospects.

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