

Cloud-based Quantum Computing Market by Offering, Technology (Trapped Ions, Quantum Annealing, Superconducting Qubits), Application (Optimization, Simulation and Modeling, Sampling, Encryption), Vertical and Region - Global Forecast to 2028

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Abstracts

The global cloud-based quantum computing market is projected to grow from USD 798 million in 2023 to USD 4,063 million by 2028 at a CAGR of 38.5%.

Some factors driving the market growth include the growing adoption of cloud technology with increasing digitalization and the increasing use of quantum computing software and services across various verticals. However, stability and error correction issues and limited skilled expertise for deploying and using cloud-based quantum computing solutions are expected to hinder the market growth.

“BFSI to grow at highest CAGR during the forecast period.”

Quantum computing is gaining interest in financial services, which aims to increase manifold, trade speed, transactions, and data processing. Some use cases of quantum computing in financial services include targeting and prediction, trading optimization, and risk profiling. Several partnerships and collaborations are taking place in the cloud-based quantum computing market in the BFSI industry. In 2018, MUFG Bank and Mizuho Financial Group joined as members of the IBM Q Hub at Keio University. Keio University worked with IBM to help organizations explore quantum applications important to business and science.

“Managed Services to grow with significant CAGR during the forecast period.”

Managed services are when the organization outsources its day-to-day operations to focus on its core business. Managed services include daily maintenance, troubleshooting, security, administration, data backup, unified communications, onboarding, and network monitoring. Quantum computing service providers cater to industries' requirements such as healthcare, pharmaceutical, and aerospace & defense by providing them with quantum computing as a service (QCaaS). Quantum computing as a service (QCaaS) is a cloud computing service that provides access to quantum computers and its associated technologies. QCaaS allows users to access quantum computers via a web browser or an application programming interface (API). The QCaaS enables businesses and researchers to access quantum computing power without purchasing and maintaining their quantum computers. For instance, Amazon Braket is a fully managed quantum computing service designed to help speed up scientific research and software development for quantum computing. Its use cases include researching quantum computing algorithms, testing different quantum hardware, building quantum software faster, and developing open-source software.

“Asia Pacific to grow at highest CAGR during the forecast period.”

The Asia Pacific is expected to be one of the most significant contributors to the cloud-based quantum computing market size. In 2021, IBM and the University of Tokyo unveiled Japan's most powerful quantum computer as a collaboration to advance Japan's exploration of quantum science, business, and education. The IBM Quantum System One provides users access to repeatable and predictable performance from high-quality qubits and high-precision control electronics, with quantum resources tightly controlled with classical processing. In India, the Union Budget 2020-21 proposed to spend USD 1.2 billion on the newly launched National Mission on Quantum Technologies and Applications (NMQTA). It would focus on the five domains of quantum technology: communication, simulation, computation, sensing, and metrology. Additionally, several initiatives and partnerships are being taken up by the regional governments and organizations, which has driven the cloud-based quantum computing market in the region.

Breakdown of Primaries

The primary sources from the supply side include various industry experts, including Chief Executive Officers (CEOs), Vice Presidents (VPs), marketing directors, technology and innovation directors, and related key executives from various key companies and organizations operating in the cloud-based quantum computing market.

By Company Type: Tier 1: 35%, Tier 2: 45%, and Tier 3: 20%

By Designation: C-level: 40%, Managerial and Other levels: 60%

By Region: Asia Pacific: 45%, Europe: 35%, and North America: 20%

The major vendors in cloud-based quantum computing include IBM (US), Microsoft (US), Google (US), AWS (US), Baidu (China), Rigetti Computing (US), Xanadu (Canada), Oxford Quantum Circuits (UK), IonQ (US), and Zapata Computing (US).

Research Coverage

The report segments the cloud-based quantum computing market. It forecasts its size by offering (software, services), technology (trapped ions, quantum annealing, superconducting qubits, other technologies), applications (optimization, simulation, modeling, sampling, encryption, other applications), verticals (BFSI, healthcare and pharmaceuticals, aerospace & defense, research and academia, manufacturing, transportation and logistics, chemicals, and other verticals), and region (North America, Europe, Asia Pacific, Middle East & Africa, and Latin America).

The study also includes an in-depth competitive analysis of the key players in the market, their company profiles, key observations related to product and business offerings, recent developments, and key market strategies.

Key Benefits of Buying Report

The report is expected to help the leaders/new entrants in this market with information on the closest approximations of the revenue numbers for the cloud-based quantum computing market and sub-segments. It will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable go-to-market strategies. The report will also help stakeholders understand the pulse of the market and will provide them with information on key market drivers, restraints, opportunities, and challenges.

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*Details on Business overview, Products/Solutions/Services offered, Recent developments, MNM view, Key strengths, Strategic choices, and Weaknesses and competitive threats might not be captured in case of unlisted companies.

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