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Quantum Computing Market - Global Industry Size, Share, Trends, Opportunities, and Forecast Segmented By Component (Hardware, Software, Services), By Deployment (On-premises and Cloud-based), By Application (Machine Learning, Optimization, Biomedical Simulations, Financial Services, Electronic Material Discovery, and Others), By End User (Healthcare, BFSI, Automotive, Researchers, Energy & utilities, Chemical, Manufacturing and Others (Transportation, Logistics, etc.)), By Region & Competition, 2021-2031F

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Abstracts

The Global Quantum Computing Market is projected to experience substantial growth, expanding from USD 3.65 Billion in 2025 to USD 21.37 Billion by 2031, reflecting a compound annual growth rate of 34.25%. Leveraging the fundamental principles of quantum mechanics, such as superposition and entanglement, this technology performs complex calculations that surpass the limitations of classical supercomputers. The market's trajectory is primarily fueled by significant government investments focused on national security and scientific leadership, along with increasing demand for optimization solutions in the financial and pharmaceutical sectors. Reinforcing this commercial shift, the Quantum Economic Development Consortium reported that the global quantum computing segment generated $1.07 billion in revenue in 2024, indicating a steady transition from academic research to viable commercial applications.

However, the industry encounters major hurdles regarding qubit stability and error

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correction. The issue of decoherence results in elevated error rates that currently undermine the reliability necessary for widespread enterprise adoption. Consequently, the engineering complexity associated with building fault-tolerant systems stands as a primary obstacle, hindering the rapid scalability of quantum processors and delaying broader market expansion.

Market Driver

Increasing strategic government investments in national quantum initiatives serve as the primary catalyst for the Global Quantum Computing Market, as nations compete to secure technological sovereignty. Public sectors are aggressively funding domestic ecosystems to mitigate the risks of developing fault-tolerant systems and to protect critical infrastructure against future cryptanalytic threats. This infusion of capital supports long-term hardware research that private equity cannot sustain alone, ensuring supply chains remain resilient during the extended development phase. For example, according to techUK in December 2025, the UK Research and Innovation agency allocated over ?1 billion to support the sector through 2030, highlighting the essential role of state-backed funding in driving commercialization and stability.

Simultaneously, a surge in research and development funding from global technology giants and specialized startups is hastening the transition from experimental physics to utility-scale solutions. Private investors are increasingly financing the scaling of qubit modalities and the networking infrastructure necessary for distributed computing, a trend reflected in recent major fundraising events. For instance, Nu Quantum announced in December 2025 that it secured $60 million in a Series A round to advance its entanglement technology. While revenue generation is still in its early stages relative to investment, it is beginning to materialize; Rigetti Computing reported $2.3 million in revenue for the fourth quarter of 2024 in March 2025, demonstrating a gradual but definite shift toward revenue-generating commercial operations.

Market Challenge

The central obstacle impeding the Global Quantum Computing Market is the persistent technical challenge of ensuring error correction and qubit stability. Environmental noise triggers decoherence, causing qubits to lose their quantum state and leading to high error rates that compromise computational reliability. In industries such as finance and pharmaceuticals, where data precision is critical, this instability renders current processors unsuitable for large-scale commercial operations. As a result, the technology remains largely tethered to experimental research phases, preventing the

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mass deployment of quantum systems into standard enterprise IT infrastructures.

This absence of fault tolerance creates significant market friction, prompting potential buyers to delay investments in quantum hardware. Corporations remain hesitant to integrate systems that cannot yet demonstrate sustained, error-free performance for complex problem-solving, which limits the potential customer base. According to Quantum Industry Canada, 20% of industry respondents in 2024 cited the technology's lack of readiness as a leading barrier to adoption. This skepticism restricts revenue streams primarily to government-backed projects and proof-of-concept trials, thereby slowing the industry's ability to achieve the scalability and profitability necessary for broader market expansion.

Market Trends

The rapid growth of Quantum-as-a-Service (QaaS) cloud platforms is democratizing access to quantum capabilities and fundamentally reshaping enterprise procurement strategies. By transitioning from capital-intensive on-premise hardware to flexible cloud-based consumption models, organizations in the logistics and financial sectors can utilize quantum processing for optimization tasks without the high costs of infrastructure maintenance. This shift is driving revenue for cloud-native providers scaling their operations to meet commercial demand; for instance, IonQ reported in November 2024 that its third-quarter revenue reached $12.4 million, a 102% year-over-year increase driven by the accelerating adoption of its networked systems.

Simultaneously, the convergence of Artificial Intelligence with quantum computing is emerging as a transformative force, particularly in high-fidelity simulation and predictive modeling. This synergy enables the creation of Large Quantitative Models (LQMs) that use quantum mechanics to process complex datasets more efficiently than classical neural networks, unlocking new possibilities in material science and drug discovery. The high potential of this technological intersection is attracting significant venture capital, confirming the commercial viability of hybrid applications. As evidence of this confidence, SandboxAQ announced in December 2024 that it secured over $300 million to advance its AI and quantum simulation technologies.

Key Market Players

International Business Machines Corporation

D-Wave Systems Inc.

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Amazon.com, Inc.

Rigetti Computing Inc.

Google LLC

Intel Corporation

Toshiba Corporation

Honeywell International Inc.

QC Ware Corporation

1QB Information Technologies, Inc.

Report Scope

In this report, the Global Quantum Computing Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Quantum Computing Market, By Component

Hardware

Software

Services

Quantum Computing Market, By Deployment

On-premises

Cloud-based

Quantum Computing Market, By Application

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- Machine Learning
- Optimization
- Biomedical Simulations
- Financial Services
- Electronic Material Discovery
- Others

Quantum Computing Market, By End User

- Healthcare
- BFSI
- Automotive
- Researchers
- Energy & utilities
- Chemical
- Manufacturing
- Others (Transportation
- Logistics
- etc.)

Quantum Computing Market, By Region

- North America

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United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

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South Africa

Saudi Arabia

UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Quantum Computing Market.

Available Customizations:

Global Quantum Computing Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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