

Quantum Technologies Market to Generate a Valuation of US\$ 21.38 Billion by 2031

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Due to the developments in quantum computing, quantum communication, and quantum sensing technologies, the quantum technologies market is developing quickly. As more businesses invest in the



creation of innovative technologies, the market is likely to keep growing. When Google revealed its quantum supremacy experiment in 2019, the quantum technologies market saw one major advancement. According to the business, the Quantum computer can complete a calculation that would have taken the most potent supercomputer in the world 10,000 years to complete. Thus, this innovation has significantly affected the global market, with more people being interested in and investing in quantum computing technologies.

Governments and commercial businesses are making significant investments in quantum technology, which has sparked the creation of increasingly effective and affordable quantum devices. In the upcoming years, these investments will help the market continue to expand. For instance, in July 2023, scientists at New Haven-based Quantum Circuits Inc. are working to create and make the first usable quantum computers available to the general public. Leaders of the Yale spinout claim that it will process information more quickly and powerfully than is currently possible with supercomputers thanks to quantum computing technology.

Among the top nations investing in quantum technologies include the U.S., China, and Europe. The National Quantum Initiative Act, introduced by the U.S. government in 2018, provided US\$ 1.2 billion for quantum research and development. In addition, China has unveiled the Quantum Information Science Action Plan, which intends to make China a global leader in quantum

technologies by 2030.

The computing segment is predicted to account for more than 50% of quantum technologies market revenue share. In order to solve complicated issues that traditional computers are unable to handle, quantum computing is quickly developing. The banking, healthcare, energy, and logistics sectors are utilizing this technology. The market is expanding since it is also being utilized to create novel materials, medications, and catalysts. For instance, in March 2023, the Cleveland Clinic and IBM unveiled the installation of the IBM Quantum System One, the first onsite private sector quantum computer deployment in the United States and the first quantum computer in the world specifically intended for medical research.

The aerospace and defense segment will account for more than 29% of global market revenue share. A significant user of quantum technology is the aerospace and defense sector, particularly in communication, navigation, and cryptography. For instance, in May 2023, a hybrid quantum-classical communication network was requested by U.S. military researchers in order to enable quantum improvements to information security and covertness on current classical military networks.

The necessity of safe data transfer and communication for the market also emphasizes the significance of quantum cryptography, which offers a higher level of security than its classical counterpart. Companies that need to protect sensitive data and communications will find this additional protection particularly tempting. Quantum machine learning can also improve logistics and supply chain management in the aerospace and defense sector, which will result in cost savings and improved productivity in the quantum technology market.

North America is the largest and most influential quantum technology market, which is mostly comprised of the United States and Canada. Significant government financing, funding for research and development, technological developments, and several cutting-edge initiatives all contribute to the region's market leadership. For instance, the Institute for Quantum Computing at the University of Waterloo, the Perimeter Institute for Theoretical Physics, and Quantum Valley Investments, a private venture capital firm specializing in quantum technology startups in the quantum technologies market, are all part of the Quantum Valley ecosystem, in which the Canadian government has invested more than CAD 1 billion.

In quantum technology, North America also has significant research and development projects. In order to enable safe communication in the quantum technologies market using quantum entanglement, researchers from the University of Chicago, Argonne National Laboratory,

Fermilab, and other institutions are working together to establish a quantum internet. Using a 52-mile-long fiber network, the research has successfully proven the transmission of quantum information.

The quantum technologies market is characterized by oligopolistic competition, in which a few dominating competitors hold a substantial market share. In addition, the top six players capture over 59.2% of the market's revenue, suggesting a highly concentrated market. According to Astute Analytica, with a combined market share of more than 34%, IBM and Microsoft are two of the prominent market players. In addition, IBM is the market leader with a market share of over 18%. Microsoft is a close second with a revenue share of over 16%.

The fact that IBM entered the field of quantum computing first is one of the main factors contributing to its dominance in the market. Since the 1980s, when IBM first began funding quantum computing research, it has been at the forefront of the field's technological advancement. Additionally, the business has invested heavily in creating a robust ecosystem for quantum computing, creating its own quantum hardware, software, and tools, and collaborating with other tech firms and academic institutions.

Large technology corporations that are making significant investments in quantum research and development, including IBM, Google, Microsoft, and Alibaba, currently control the market landscape. On the other hand, niche markets like quantum communication and sensing are seeing the emergence of startups and smaller businesses.

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- Amazon
- Alibaba Group
- Atos Quantum
- Cambridge Quantum Computing
- D-Wave Systems Inc.
- Fujitsu
- GEM Systems
- Google
- Honeywell
- IBM Corporation
- Intel
- KETS Quantum Security

- Microsoft Corporation
- QRATE Quantum Communications
- · Quantum Blockchains
- Quantum Xchange
- Rigetti Computing
- Single Quantum
- Toshiba
- Xanadu
- Other Prominent Players

- Computing
- Supply Chain Logistics
- Cryptography
- Sensing
- Meteorology
- Cyber Security
- Internet-Of-Things
- Defence
- Others

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- Aerospace & Defense
- Automotive
- Banking and Finance
- Education
- Healthcare and Pharmaceuticals
- IT & Telecommunication
- Manufacturing
- Transport & Logistics
- Others

- · North America
- o The U.S.
- o Canada
- o Mexico
- Europe
- · Western Europe

	The UK
	Germany
	France
	Italy
	Spain
•	Rest of Western Europe
Eastern Europe	
	Poland
	Russia
•	Rest of Eastern Europe
Asia Pacific	
•	China

- India
- Japan
- South Korea
- ASEAN
- Rest of Asia Pacific Middle East & Africa (MEA)
- Saudi Arabia
- South Africa
- UAE
- Rest of MEA South America
- Argentina
- Brazil
- Rest of South America

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