

Quantum Cryptography Market – Global Industry Size, Share, Trends, Competition, Forecast & Opportunity, 2018-2028 Segmented By Component (Hardware and Software), By Organization Size (SME and Large Organization), By Application (Database Encryption, Network Layer Encryption, Application Security, and Others), By End User (BFSI, IT & Telecom, Government & Military and Others), By Region

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Abstracts

Global Quantum Cryptography Market is expected to register a moderate CAGR during the forecast period. Quantum cryptography is a method of secure communication that uses quantum mechanics to protect the transmission of information. It involves encoding messages in a way that makes it impossible for an eavesdropper to intercept and decipher the information. The demand for quantum cryptography is driven by the need for secure communication in various applications such as data centers, military communication, financial transactions, and government communication. The increasing adoption of quantum cryptography by governments and military organizations for secure communication is expected to drive the growth of the market. A form of encryption that safeguards data from online attacks is called quantum cryptography. Due to several factors, including rising digitization, easier access to connectivity, and online banking applications, among others, it is in high demand. Quantum cryptography solutions are being adopted by businesses all over the world to improve network and application security. Due to the increasing adoption of these solutions in the government and BFSI verticals, the market is anticipated to experience new opportunities. The industry is focusing on advanced solutions to improve security and transaction security. To ensure that data cannot be accessed by hackers, even those who possess own quantum

computers, quantum cryptography applies the principles of quantum mechanics to data encryption and data transmission. The creation and execution of numerous cryptographic tasks using the special abilities and strength of quantum computers is another aspect of the wider application of quantum cryptography. In theory, this type of computer can aid in the development of new, stronger, and more efficient encryption systems that would be impossible to develop using existing, traditional computing and communication architectures.

Rise in Need to Reduce the Rising Security Challenges

Quantum cryptography has been gaining popularity in recent years due to the rising need for secure communication in various industries. With the increasing dependence on technology and the internet, there has been a corresponding rise in security challenges such as cyber-attacks, data breaches, and theft of sensitive information. These challenges have led to a growing demand for stronger and more secure encryption methods to protect communication and data.

Data breaches and cyberattacks are becoming more common and attempting to put millions of individual's personal data at risk, which therefore increases the need to reduce the rising security challenges. In May 2021, the total number of cyberattacks and data breaches was a record 116 million. Human error and weak passwords account for 52% of data breaches, therefore driving the need for development of quantum cryptography.

The rise in the need for quantum cryptography is also driven by the increasing use of emerging technologies such as the Internet of Things (IoT), artificial intelligence (AI), and blockchain, which require high levels of security to prevent unauthorized access and ensure data privacy. Quantum cryptography provides a robust and reliable solution for securing communication and data in these emerging technologies, making it a crucial tool for businesses and organizations that deal with sensitive information.

Moreover, governments and military organizations around the world are increasingly using quantum cryptography to secure their communication and data, recognizing the potential threats posed by cyber-attacks and the need for more secure encryption methods. This has led to significant investments in quantum cryptography research and development, further driving the growth of the market. In conclusion, the rise in the need for quantum cryptography is driven by the need to reduce the rising security challenges posed by cyber-attacks, data breaches, and theft of sensitive information. The development and adoption of quantum cryptography provide a reliable and robust

solution for securing communication and data, making it an essential tool for businesses, governments, and military organizations.

Growing Need for Next-Generation Security Solutions for Cloud and IoT Technologies

Digitization helps companies in a wide range of ways and modern working life has evolved dramatically in the last decade. Working habits and communications are more adaptable, digital, than ever before, which is largely due to the millennial workforce's expansion. Moreover, the traditional office space, has also evolved into the digital collaborative working platforms. As a result, increasingly sophisticated access control and security products and systems are required. Therefore, quantum cryptography plays a critical role in physically and digitally empowering workplaces.

The growing adoption of cloud and Internet of Things (IoT) technologies has led to an increased need for next-generation security solutions, including quantum cryptography. Cloud computing and IoT devices are increasingly being used to store and transmit sensitive information, which makes them a prime target for cyber-attacks. Traditional encryption methods are vulnerable to attacks from quantum computers, which have the potential to break most of the existing encryption methods. However, quantum cryptography uses the principles of quantum mechanics to provide a robust and secure method for protecting sensitive information in cloud and IoT environments.

Quantum computers are still in their early stages and require further development before they can be used by many people. The field of quantum cryptography is still expanding despite some drawbacks, such as the inability to simultaneously send keys to two locations. Terra Quantum, a Swiss company that develops quantum technology, recently announced a range-related breakthrough for quantum cryptography. Previously, the maximum distance for quantum cryptography was 400 to 500 km. The innovation of Terra Quantum makes it possible to send quantum cryptography keys over more than 40,000 km. Rather than constructing a new optical line with numerous repeaters, Terra Quantum's development allows quantum keys to be distributed within standard optical fiber lines.

As the use of cloud and IoT technologies continues to grow, the need for next-generation security solutions such as quantum cryptography will continue to increase. Quantum cryptography offers a reliable and robust solution for securing communication and data in these environments, making it an essential tool for businesses and organizations that deal with sensitive information. The development and adoption of quantum cryptography will play a critical role in ensuring the security of cloud and IoT

technologies in the years to come.

Market Segmentation

Global Quantum Cryptography Market is segmented based on component, application, end user, organization size, region and competitive landscape. Based on Component, the market can be segmented into Hardware and Software. Based on Application, the market is further split into Database Encryption, Network Layer Encryption, Application Security, and Others. By Organisation size, the market can be segmented into SME and Large Organization. By end user the market can be segmented into BFSI, IT & Telecom, Government & Military and Others. Regionally, North America dominated the market among Asia Pacific, Europe, Middle East & Africa, and South America.

Market Players

Major market players in the Global Quantum Cryptography market are ID Quantique SA, MagiQ Technologies, Inc., Quintessence Labs Pty Ltd., Qubitekk, Inc., Qutools GmbH, Crypta Labs, NuCrypt LLC, QuNu, Toshiba Corporation, SK Telecom Co., Ltd..

Report Scope:

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

Quantum Cryptography Market, By Component:

Hardware

Software

Quantum Cryptography Market, By Organization Size:

SME

Large Organization

Quantum Cryptography Market, By Application:

Database Encryption

Network Layer Encryption

Application Security

Others

Quantum Cryptography Market, By End User:

BFSI

IT & Telecom

Government & Military

Others

Quantum Cryptography Market, By Region:

North America

United States

Canada

Mexico

Europe

France

Germany

United Kingdom

Italy

Spain

Asia Pacific

China

India

Japan

South Korea

Australia

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

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

Available Customizations:

With the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the

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report:

Company Information

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

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