

# **Quantum Cryptography Market by Offering (Solutions and Services), Security Type (Network Security and Application Security), Vertical (Government, Defense, BFSI, Healthcare, Retail, and eCommerce) and Region - Global Forecast to 2028**

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## **Abstracts**

The Quantum Cryptography market is expected to grow from an estimated USD 0.5 billion in 2023 to 3.0 billion USD by 2028 at a Compound Annual Growth Rate (CAGR) of 41.2% from 2023 to 2028. The market growth can be attributed to the growing instances of cyberattacks and increased adoption of cloud and IoT technology solutions. However, lack of awareness and understanding; inadequate infrastructure, lack of skilled professionals and the constantly evolving threat landscape are expected to hinder the market growth.

By solution, Quantum Random Number Generator (QRNG) segment is expected to grow at a higher CAGR during the forecast period

Quantum Random Number Generator is a highly sophisticated engineering innovation that involves the power of complex deep-tech technologies (such as semiconductors, optoelectronics, high-precision electronics, and quantum physics) working together to create the highest level of randomness possible. Quantum random number generators (QRNGs) are a special case of True Random Number Generator (TRNG) that generates randomness by measuring quantum processes, which are, non-deterministic. The advantages are multiple, including a fundamental advantage in using quantum indeterminacy, typically faster performances by leveraging photonics and most importantly, the ability to understand and verify the origin of unpredictability, which is a core assurance for the entire cybersecurity chain. QRNG technology has been used in everything from automotive, state lotteries, and HSMs, to IoT devices and smartphones.

By Vertical, Government is expected to hold the highest market share during the forecast period

Quantum cryptography is virtually unbreakable, making it an ideal tool for protecting sensitive information. This makes it particularly attractive to government and public sector organizations, which often handle highly sensitive data. The demand for managed services is rising due to the increase in large-scale networks and IoT applications in organizations. Quantum cryptography plays a major role in ensuring security during data transfer and reducing the risk of data loss. As the digital age continues to evolve, so too does the need for robust quantum cryptography measures. Quantum cryptography is one of the latest advancements in quantum field, and its potential impact on government sector is immense.

By Region, North America is expected to grow at a higher CAGR during the forecast period

Private companies in North America, such as IBM, Microsoft, and Google, are investing in quantum technology research and development, with the development of quantum computers and quantum communication networks. This investment is expected to drive the growth of the quantum cryptography market. In recent years, there have been several high-profile data breaches in North America, such as the Equifax breach in 2017, the Capital One breach in 2019, and the SolarWinds breach in 2020. While these breaches were not prevented by quantum cryptography, they highlight the need for more secure communication methods and the potential benefits of quantum cryptography in preventing similar breaches in the future.

#### Breakdown of Primaries

In-depth interviews were conducted with Chief Executive Officers (CEOs), marketing directors, other innovation and technology directors, and executives from various key organizations operating in the Quantum Cryptography market.

By company type: Tier 1: 35%, Tier 2: 45%, and Tier 3: 20%

By designation: C-level Executives: 40% and Managerial and other levels: 60%

By region: North America: 35%, Asia Pacific: 30%, and Europe: 20%, and RoW : 15%

Major vendors in the Quantum Cryptography market are ID Quantique (Switzerland), QuintessenceLabs (Australia), Toshiba (Japan), QuantumCTek (China), Magiq Technologies (US), Crypta Labs (UK), Qasky (China), Qubitekk (US), ISARA (Canada), Nucrypt (US), Quantum Xchange (US), qutools (Germany), QNu Labs (India), Post Quantum (UK), IBM (US), HPE (US), NEC (Japan), Crypto Quantique (UK), Qrypt (US), KETS Quantum Security (UK), PQShield (UK), QuBalt (Germany), VeriQloud (France), SSH Communication Security (Finland), QuantLR (Israel), and QuSecure (US).

The study includes an in-depth competitive analysis of the key players in the Quantum Cryptography market, with their company profiles, recent developments, and key market strategies.

### Research Coverage

This research report categorizes the Quantum Cryptography market by Offering (Solutions and Services), Security Type (Network Security and Application Security), Vertical (Government, Defense, BFSI, Healthcare, Retail, and eCommerce), and Region. The scope of the report covers detailed information regarding the major factors, such as drivers, restraints, challenges, and opportunities, influencing the growth of the Quantum Cryptography market. A detailed analysis of the key industry players has been done to provide insights into their business overview, solutions, and services; key strategies; Contracts, partnerships, agreements. new product & service launches, mergers and acquisitions, and recent developments associated with the Quantum Cryptography market. Competitive analysis of upcoming startups in the Quantum Cryptography market ecosystem is covered in this report.

### Reasons to buy this report

The report will help market leaders/new entrants in this market with information on the closest approximations of the revenue numbers for the overall threat modeling tools market and its subsegments. It will help stakeholders understand the competitive landscape and gain more insights to position their businesses better and plan suitable go-to-market strategies. It also helps stakeholders understand the market's pulse and provides information on key market drivers, restraints, challenges, and opportunities.

The report provides insights on the following pointers:

Analysis of key drivers (Increased cyber threats and attacks; Growth of eCommerce and digital payment solutions; Stringent regulations and compliance requirements; digital transformation initiatives), restraints (Lack of awareness and understanding; Inadequate infrastructure and lack of skilled professionals; Rapidly evolving threat landscape), opportunities (Cross sector collaboration, International cooperation), and challenges (Limited cybersecurity budgets, Insufficient regulatory frameworks) influencing the growth of the Quantum Cryptography market.

**Product Development/ Innovation:** Detailed insights on the upcoming technologies, research & development activities, and new product and service launches in the Quantum Cryptography Market

**Market Development:** Comprehensive information about lucrative markets – the report analyses the Quantum Cryptography market across varied regions

**Market Diversification:** Exhaustive information about new products & services, untapped geographies, recent developments, and investments in the Quantum Cryptography Market

**Competitive Assessment:** In-depth assessment of market shares, growth strategies and service offerings of leading players like ID Quantique (Switzerland), QuintessenceLabs (Australia), Toshiba (Japan), QuantumCTek (China), Magiq Technologies (US), Crypta Labs (UK), Qasky (China), Qubitekk (US), ISARA (Canada), Nucrypt (US), Quantum Xchange (US), among others in the Quantum Cryptography Market strategies.

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