

Quantum Cryptography: Market Research Report

<https://marketpublishers.com/r/QE0BA9FDB6BEN.html>

Date: December 2018

Pages: 156

Price: US\$ 5,450.00 (Single User License)

ID: QE0BA9FDB6BEN

Abstracts

This report analyzes the worldwide markets for Quantum Cryptography in US\$ Million. The report provides separate comprehensive analytics for the US, Europe, China, Asia-Pacific, and Rest of World.

Annual estimates and forecasts are provided for the period 2016 through 2024.

Market data and analytics are derived from primary and secondary research. Company profiles are primarily based on public domain information including company URLs.

The report profiles 26 companies including many key and niche players such as -

ID Quantique SA

MagiQ Technologies, Inc.

Nippon Telegraph and Telephone Corp.

Nucrypt LLC

Oki Electric Industry Company Ltd.

QuintessenceLabs, Inc.

Contents

1. INTRODUCTION, METHODOLOGY & PRODUCT DEFINITIONS

Study Reliability and Reporting Limitations
Data Interpretation & Reporting Level
Quantitative Techniques & Analytics
Product Definitions and Scope of Study

2. INDUSTRY OVERVIEW

Secure Communications - Defining the Need for Cryptography
Quantum Cryptography - Providing Secure Communications
A Pictorial Illustration of Quantum Cryptography:
Using Quantum Key Distribution
Quantum Cryptography Market to Leapfrog over the Ensuing Years
The Advent for Quantum Computers
Quantum Computing Makes Quantum Cryptography Imperative

QKD R&D

Focus on Quantum-Secure Networks
Patent Landscape
Future Developments
QKD Systems and the Different Applications
Corporate
Healthcare
Defense
Infrastructure Protection
Transport
Finance
Space
Micius Satellite Enables Intercontinental Quantum Communication
Adoption in Regional Markets
Regional Initiatives in Quantum Cryptography Field
China
South Korea
Japan
Singapore

Malaysia

Australia

South Africa

Russia

China to Play a Pivotal Role in the Global Quantum Cryptography Market

China's Quantum Experiments

3. MAJOR GROWTH DRIVERS, TRENDS & ISSUES

Growing Popularity of Crypto Cloud Computing System

Researchers Striving to Overcome Limitations in Terrestrial QKD networks

Satellite QKD Networks to Complement Terrestrial QKD Networks

Moving Beyond Point-to-Point Communications - An Important Step to Improve Commercialization Prospects

Quantum Access Network with Improved APDs to Enable Quantum Cryptography for Multiple Users

Threat of Cyber Crime Buys Demand for Quantum Cryptography Solutions in Government Agencies

Growing Use of Cyber Security Solutions in Public Utilities

Demand for Cyber Security in Defense Sector on the Rise

Business Enterprises Drive Demand for QC-based Secure Communication Systems

Table 1. Global Market for IT Security Products by End-Use Application (2020 & 2030): Percentage Breakdown of Sales Revenues for End-Point Security, Identity Authentication & Access Management, Internet Security, Messaging Security, Network Security, and Others (includes corresponding Graph/Chart)

Financial Services - A Key End Use Market for Information Security Solutions

Table 2. Leading Targets of Fraud (2016): Percentage Breakdown of Number of Breaches by Type of Asset (includes corresponding Graph/Chart)

Factors Affecting Implementation of Cyber Security Solutions by Enterprises Worldwide - Ranked in Order of Influence

Securing Internet Transaction: An Opportune Application Area for Quantum Cryptography

Quantum Cryptography to Secure Mobile Transactions

Table 3. World M-Payment Market (in US\$ Million): 2016, 2018, and 2020 (includes corresponding Graph/Chart)

Strong Need for QKD Systems Compatibility with Existing Telecom Networks
New Protocol to Bring Quantum Cryptography to Mobile Telecommunications

Table 4. Worldwide Mobile Data Traffic by Device Type (2016 & 2018) - Percentage Share Breakdown of Monthly Data Traffic Volume for Laptops, Non-Smartphones, Smartphones, Tablets, and Others (includes corresponding Graph/Chart)

Table 5. Worldwide Mobile Data Traffic by Application (2016 & 2018) - Percentage Share Breakdown of Monthly Data Traffic Volume for Video, Data, File Sharing, and M2M (includes corresponding Graph/Chart)

Quantum Cryptography Finds Application in Securing Data for Electric Grids
Relativistic Quantum Cryptography to Ensure Secure Bit Commitment
Refinement of Photon Detectors Essential for Widespread Adoption
Researchers Identify Alternative Method to Sidestep Technical Flaw in Photon Detectors
Advanced Secure Communications through Improved Single-Photon Emitter
High Cost of Infrastructure and Hardware: A Cause of Concern
Dire Need for Established Standards
Quantum Cryptography Driven by BYOD Policy Implementation

4. CRYPTOGRAPHY - A PRELUDE

Cryptosystems
A Symmetric Cryptosystem
Unconditionally Secure or Perfect Cryptosystem
How Does One-Time Pad Works?
One-Time Pad Cryptosystem: The Hurdles
Classical Cryptography
Private Key Cryptography System
Public Key Cryptography System
How Does Public-Key Cryptography Works?
Public-key Cryptosystems in Common Use...

RSA Cryptosystem
ElGamal Cryptosystem
Elliptic Curve Cryptosystems
McEliece Cryptosystem
Limitations in Public-key Cryptosystems Led to the Emergence of Quantum Cryptography...

5. QUANTUM CRYPTOGRAPHY - AN OVERVIEW

A Prelude
Quantum Theory
Quantum Mechanics in Cryptography...
Quantum Cryptography and the Quantum Key Distribution (QKD)
Classical Cryptography Vs. Quantum Cryptography
Quantum Cryptography: An Evolution Scan
Global Premiere for Quantum Cryptography in 2004
Uncertainty
Entanglement
Quantum Cryptographic Procedure...
A Pictorial Representation of Polarization Readings
Quantum Key Distribution: A Primer...
Key QKD Protocols...
Data Transmitting Process
Data Receiving/Recovering Process
Quantum Key Distribution with 'BB84' Protocol...
Pictorial Representation of Quantum Bit (or Qubit) Polarization Matching for 'BB84'
Protocol for Transmitting and Receiving Process
Ekert 91 Protocol for QKD
Quantum Key Distribution with 'B92' Protocol...
Pictorial Representation of Quantum Bit-Polarization Matching for 'B92' Scheme's
Transmitting Side
Pictorial Representation of Quantum Bit-Polarization Matching for 'B92' Scheme's
Receiving Side
SARG04 Protocol for QKD
Continuum Based
Coherent One Way Protocol
Major Steps Involved in QKD Process
Raw Key Extraction
Error Estimation

Key Reconciliation
Privacy Amplification
Pictorial Representation of QKD Decision Scheme
Position-based Quantum Cryptography: A Review
What is the Bounded- and noisy-quantum-storage model?
Applications
QC for Secure Financial Transactions
Secure Voting
Smart Power Grid

6. RESEARCH/INNOVATIONS IN QUANTUM CRYPTOGRAPHY

Research of Satellite-based Quantum Encryption for Longer Distances
Waterloo Quantum Space Project Receives Canadian Government Support
Newer Innovations Enable Fast and Secure Quantum Cryptography
One-way Quantum Steering to Drive Quantum Cryptography

7. COMPETITIVE LANDSCAPE

7.1 Focus on Select Global Market Participants

ID Quantique SA (Switzerland)
MagiQ Technologies, Inc. (USA)
Nippon Telegraph and Telephone Corp. (Japan)
Nucrypt LLC (USA)
Oki Electric Industry Company Ltd (Japan)
QuintessenceLabs, Inc. (Australia)
Raytheon BBN Technologies (USA)
SK TELECOM CO., LTD. (Korea)
Toshiba Corp. (Japan)
Universal Quantum Devices (Canada)

7.2 Product Launches

NTT Develops a Novel Cryptographic Technique
Cambridge Research Laboratories Develops a Quantum Cryptographic Device that Exceeds a Speed of 10 Mbps
SK Telecom Introduces Quantum Cryptography Chip for IoT Devices
SK Telecom Succeeds in Developing a Long-distanced Quantum Cryptography Communication
SK Telecom Announces Successful Testing of Advanced Quantum Repeater
BT and Toshiba Launches UK's First Quantum Security Showcase

ZTE Launches the World's First OTN-based Quantum Encryption Transport Solution

KEYMILE Launches the New Encryption Card

7.3 RECENT INDUSTRY ACTIVITY

InfoSec Global collaborates with IDQ for Providing Quantum-Powered Crypto-Agile VPN

Deutsche Telekom Invests in ID Quantique

ID Quantique, SK Telecom & Nokia Employs QKD for Securing Optical Transport System

SK Telecom Co. Offers its Quantum Security System to Deutsche Telekom

SK Telecom Applies Quantum Cryptographic Communication System to the Deutsche Telekom Network

ID Quantique Partners with Quantum Xchange

Telefónica, Huawei and UPM Performs a QC-based Field Trial

BT Develops the UK's First High-Speed Quantum-Secured Fibre Network

ID Quantique SA Announces a Strategic Investment Plan from Investor SK Telecom

Oak Ridge Announces the Licensing of its Quantum Encryption Method

Russian Quantum Center and PwC Join Forces for QIS Systems

SK Telecom and Nokia Sign a Cooperation Agreement

Quintessence Labs Receives Additional Capital Investment from Westpac Group

ID Quantique SA announces partnership with China Quantum Technologies

SK Telecom Invests in ID Quantique

Nokia Acquires Alcatel-Lucent

KPN Implements End-to-end Quantum Key Distribution (QKD)

8. GLOBAL MARKET PERSPECTIVE

Table 6. World Recent Past, Current & Future Analysis for Quantum Cryptography by Geographic Region - US, Europe, China, Asia-Pacific (Exc. China), and Rest of World Markets Independently Analyzed with Annual Sales Figures in US\$ Million for Years 2016 through 2024 (includes corresponding Graph/Chart)

Table 7. World 14-Year Perspective for Quantum Cryptography by Geographic Region - Percentage Breakdown of Dollar Sales for US, Europe, China, Asia-Pacific (Excl. China), and Rest of World Markets for Years 2016, 2018, & 2024 (includes corresponding Graph/Chart)

9. REGIONAL MARKET PERSPECTIVE

9.1 The United States

A. Market Analysis

Quantum-Information-Sciences (QIS)-Related Programs

B. Market Analytics

Table 8. The US Recent Past, Current & Future Analysis for Quantum Cryptography Market Analyzed with Annual Sales Figures in US\$ Million for Years 2016 through 2024 (includes corresponding Graph/Chart)

9.2 Europe

A. Market Analysis

Quantum Initiatives in the European Region

The United Kingdom

The Netherlands

Belgium

Denmark

Poland

Switzerland

Finland

Sweden

Germany

The German Aerospace Center (DLR) Technology Facilitates Transmission of Quantum Key from Air to Ground

France

Italy

Spain

Austria

Russia

B. Market Analytics

Table 9. Europe Recent Past, Current & Future Analysis for Quantum Cryptography Market Analyzed with Annual Sales Figures in US\$ Million for Years 2016 through 2024 (includes corresponding Graph/Chart)

9.3 China

A. Market Analysis

Chinese Scientists Build the World's First Quantum Satellite Network

B. Market Analytics

Table 10. Chinese Recent Past, Current & Future Analysis for Quantum Cryptography Market Analyzed with Annual Sales Figures in US\$ Million for Years 2016 through 2024 (includes corresponding Graph/Chart)

9.4 Asia-Pacific (Excluding China)

A. Market Analysis

North Korea and South Korea Race for QC Commercialization for Military Communication Advantage

B. Market Analytics

Table 11. Asia-Pacific (excluding China) Recent Past, Current & Future Analysis for Quantum Cryptography Market Analyzed with Annual Sales Figures in US\$ Million for Years 2016 through 2024 (includes corresponding Graph/Chart)

9.5 Rest of World

A. Market Analysis

Canada

QIS Program in Canada

B. Market Analytics

Table 12. Rest of World Recent Past, Current & Future Analysis for Quantum Cryptography Market Analyzed with Annual Sales Figures in US\$ Million for Years 2016 through 2024 (includes corresponding Graph/Chart)

10. COMPANY PROFILES

Total Companies Profiled: 26 (including Divisions/Subsidiaries - 28)

The United States (6)

Canada (2)

Japan (5)

Europe (10)

Germany (3)

The United Kingdom (3)

Spain (1)

Rest of Europe (3)
Asia-Pacific (Excluding Japan) (5)

I would like to order

Product name: Quantum Cryptography: Market Research Report

Product link: <https://marketpublishers.com/r/QE0BA9FDB6BEN.html>

Price: US\$ 5,450.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/QE0BA9FDB6BEN.html>