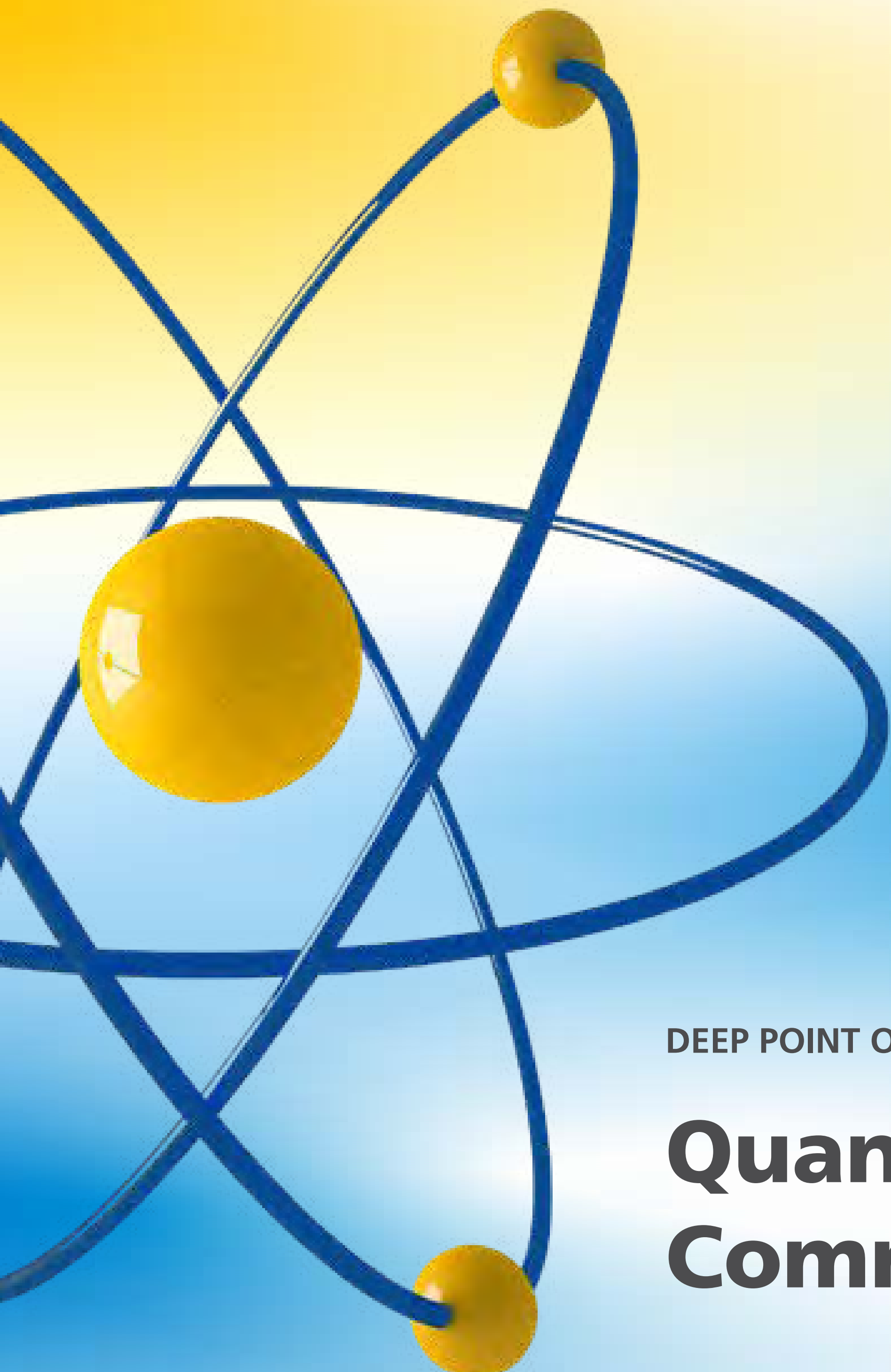

DEEP POINT OF VIEW

Quantum Communication

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01 Executive Summary

Achieving safe, secure, and **faster-than-light** communication has always been one of the key pursuits for mankind. Breakthroughs in quantum physics gave us hope that such communication might be possible soon. Upon further research, it was concluded that such communication is feasible and based on quantum technologies which Einstein famously defined as **spooky action at a distance.**

Quantum physicists are exploring the concepts of quantum entanglement, superposition, and teleportation, and there is a global investment surge in this area. In broad terms, this area is categorized as **Quantum Communication** (QC).

QC's hardware and software developments are following a similar trajectory as quantum computing. We believe that realizing QC will create quantum channels that will revolutionize multipartite information transfer and sharing. Quantum channels will further lead to **the second quantum revolution** and will become a norm for safe, secure, and faster communication.

Tremendous traction can be expected in this market in the coming years. As per McKinsey, the market valuation of QC is likely to reach around **USD 8 billion by 2030**. As this technology becomes prevalent, it will eventually get access to a brand-new profit stream. Swift developments in the QC fields like Quantum Key Distribution (QKD), quantum internet, and quantum cryptography will emerge as the key market and industry growth drivers. They will play a critical role in laying the foundation of a secure quantum channel.

In this point of view, we summarize the opportunities for contributions and continued development within the QC space, existing solutions, and framework initiatives. We provide some key takeaways concerning the technology evolution. In our opinion, QC is here to not only stay but also significantly impact various aspects of communication, including the potential for the emergence of newer security protocols and ways of communication.

02 Introduction

What is quantum communication?

We generate almost 2.5 quintillion bytes of data daily. We have no idea how much of this information is secure. We also struggle to find how vulnerable our data is on the web. These problems will gain further relevance as we take major leaps in the communication domain. This calls for a strong and secure method to safeguard the data in today's technologically advanced environment, thus leading to the generation of quantum communication.

QC transcends the boundary of classical communication and provides impenetrable security. It can safeguard the data with security layers impenetrable to external agents. Any eavesdropper who tries to intercept data will irreparably damage the information, and thus their presence can be easily detected.

To understand the criticality and thorough examination of the need for QC, let us dive into the various distinguishing aspects of quantum communication and classical communication.

Classical vs. quantum communication

Classical communication

In classical communication, a string of bits is modulated at a high data rate on a laser with a 1-watt output power in a typical free-space optical communication system used today. The laser emits approximately 7.8 x 10^{18} photons per second in this process, flowing from one sender to receiver at a steady output. When enough photons arrive at other persons' receivers to establish a coherent link, a data link is successful.

Quantum communication

On the other hand, a QC channel uses the quantum property of individual photons. Instead of modulating the signal, which controls the flow of photons, one instead manipulates the quantum characteristics of the individual photons. Due to this process, the output of photons from quantum transmitters (also referred to as sources) is often lower than that of a laser (in the millions of photons per second). There is still much space for advancement in the quantum sources and detectors (receivers) already on the market. However, we are yet to establish the technological stage where QC can completely replace classical communication.

In our view, quantum communication technology has started gaining traction in some of the new sets of applications where they can be deployed in integration with existing classical communication networks. Nonetheless, we expect this scenario to transition into a fully equipped QC channel. This channel will primarily provide a safe and supreme security feature ensuring data protection based on quantum mechanics rules rather than the mathematical complexity of traditional encryption systems.

Before understanding various practical implications of QC, we must understand various important components of the technology.

Quantum Communication is built upon concepts of quantum mechanics and quantum physics, including some major components such as QKD, quantum teleportation, quantum internet, quantum secret sharing, super-dense coding, quantum repeater, quantum cryptography, and post-quantum cryptography. In this section, we discuss some of these concepts.

Quantum Key distribution

QKD is a secure form of communication for sharing encrypted keys that are only known to the shared parties. The communication technique exchanges cryptographic keys verifiably, ensuring security by utilizing aspects of quantum physics.

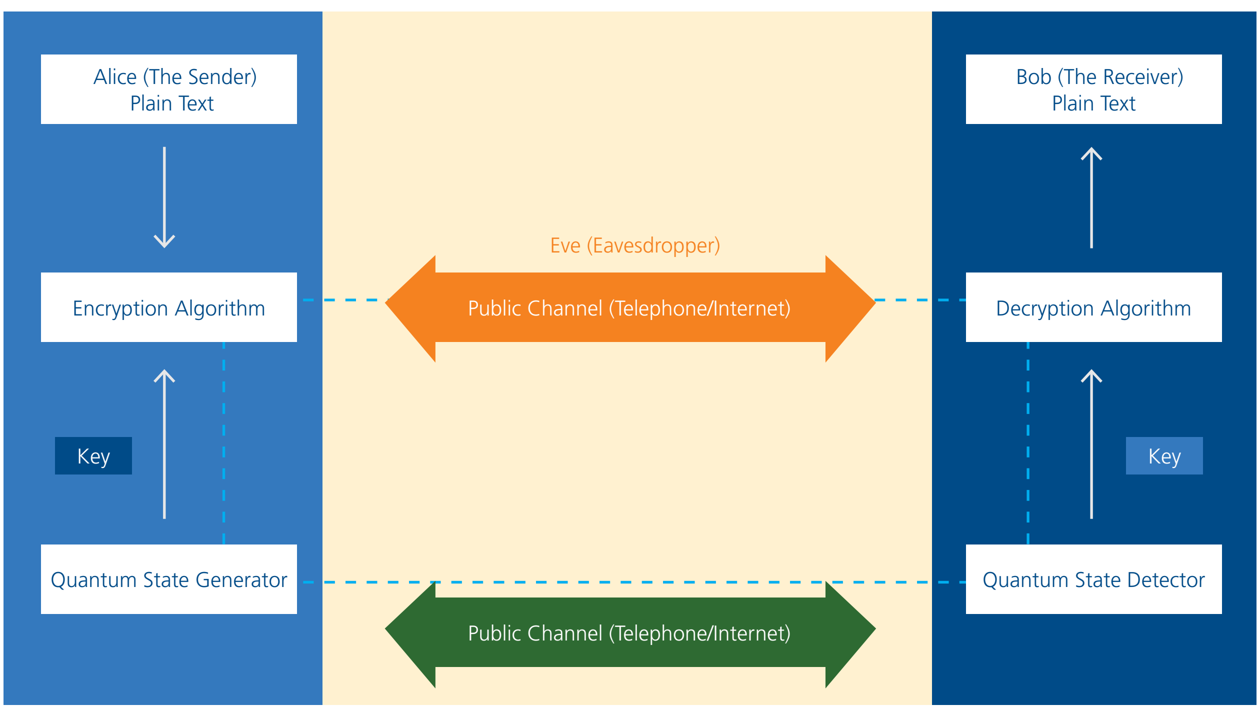


Fig.1: Quantum Key Distribution (QKD)

For QKD to function, many light particles, or photons, must be sent between parties. The photons delivered constitute a stream of ones and zeros, and each photon has a random quantum state. This would make the quantum channel more secure, and an eavesdropper will not be able to interpret the final key correctly.

However, before QKD can be widely adopted, it must overcome several significant challenges, including secret key rate, distance, size, cost, and practical security. Despite the implementation challenges, the development of this innovative technology will enhance high data rates and extend the QKD's overall effective range. With new networks and businesses offering commercial QKD solutions, it is starting to be used more frequently in a commercial context.

Quantum teleportation

Quantum teleportation is a method for sending information from a quantum transmitter at one point to a quantum receiver located at the other point. When two far-off, entangled particles are involved in quantum teleportation, the state of a third particle instantly "teleports" to the two entangled particles. In other words, it's a process by which a qubit is transmitted from one location to another without being transmitted through space.

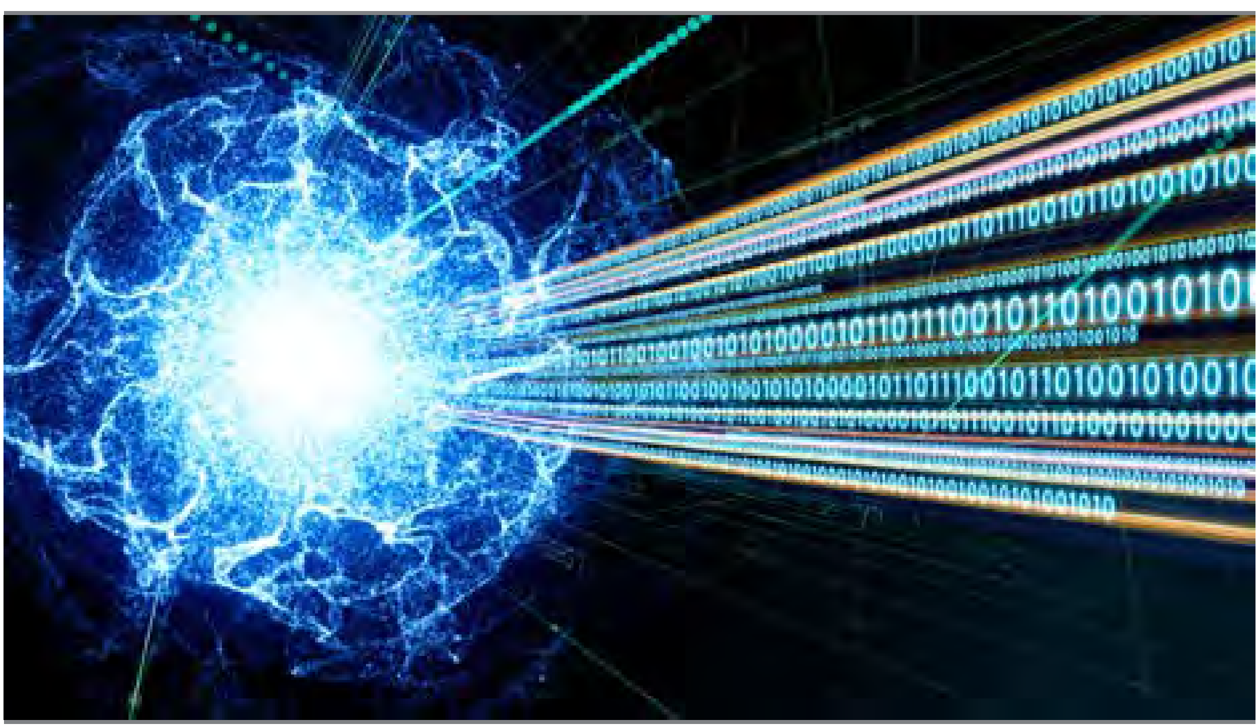


Fig.2: Quantum Teleportation (Source:azonano.com)

Quantum internet

The quantum internet is a system of interconnected quantum computers that uses quantum signals to send information rather than radio waves. Various application areas for quantum internet include protocols for distributed system problems such as leader election or Byzantine agreement, clock stabilization, extending the baseline of telescopes, secure identification, two-party cryptography in the noisy-storage model, and position verification.

Quantum repeaters

Quantum repeaters are used to divide long communication into various segments. Each of these segments can be separately distributed with a quantum key and use entanglement exchange and purification techniques to establish a longer-distance Electron Paramagnetic Resonance (EPR) between adjacent nodes. Ideally, the need for quantum repeaters with quantum processors in them has increased as it allows encryption keys to remain in quantum form as they are amplified and sent over long distances.

Fig.3: Quantum Internet (Source: Phys.org)

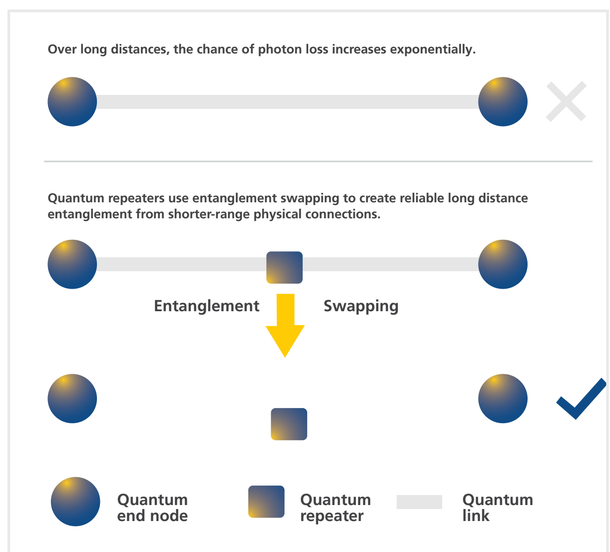


Fig.4: Quantum Repeater (Source: Aliro Quantum)

Quantum secret sharing

To achieve the highest level of communication security, it alters the conventional secret sharing (CSS) system, utilizing quantum information and the no-cloning theorem.

Super-dense coding

It is a QC technique that relies on the transmitter and receiver pre-sharing an entangled resource to convey a larger number of classical bits of information while only sending a lower number of qubits.

Quantum cryptography

Data is encrypted and protected using cryptography so that only those with the proper secret key may decrypt it. In contrast to conventional cryptographic systems, quantum cryptography uses physics rather than mathematics as the primary component of its security concept.

Post-quantum cryptography

Post-quantum cryptography includes cryptographic algorithms that are secured against a cryptanalytic attack by a quantum computer. It aims to create cryptographic systems resistant to both quantum and conventional computers and compatible with already-existing networks and communications protocols.

All these components have proved to be decisive milestones in the overall adoption phase of QC technology. For instance, some organizations have taken advantage of these components' peculiar features to create convincing quantum networks for transmitting highly sensitive data. Various protocols, including Bennett and Brassard 84 (BB84), have also been built around one of the important components of QC, i.e., QKD. Moreover, we also need quantum repeaters as they allow encryption keys to remain in quantum form as they are amplified and sent over long distances. These quantum repeaters would surely help to create some robust quantum algorithms. However, once quantum computers are fully commercially viable, we can only see an upward trend in the implementation of quantum repeaters.

We believe that critical enterprise infrastructure witnessing frequent cyber-attacks will compel the IT teams to explore a resilient quantum teleportation network. Moreover, CXOs of large organizations are currently exploring the potential of QKD encryption to secure their communication infrastructure against future advancements in mathematics and computing.

Following is the illustration of the quantum communication component radar, wherein major components of QC are plotted based on their advancement phase.

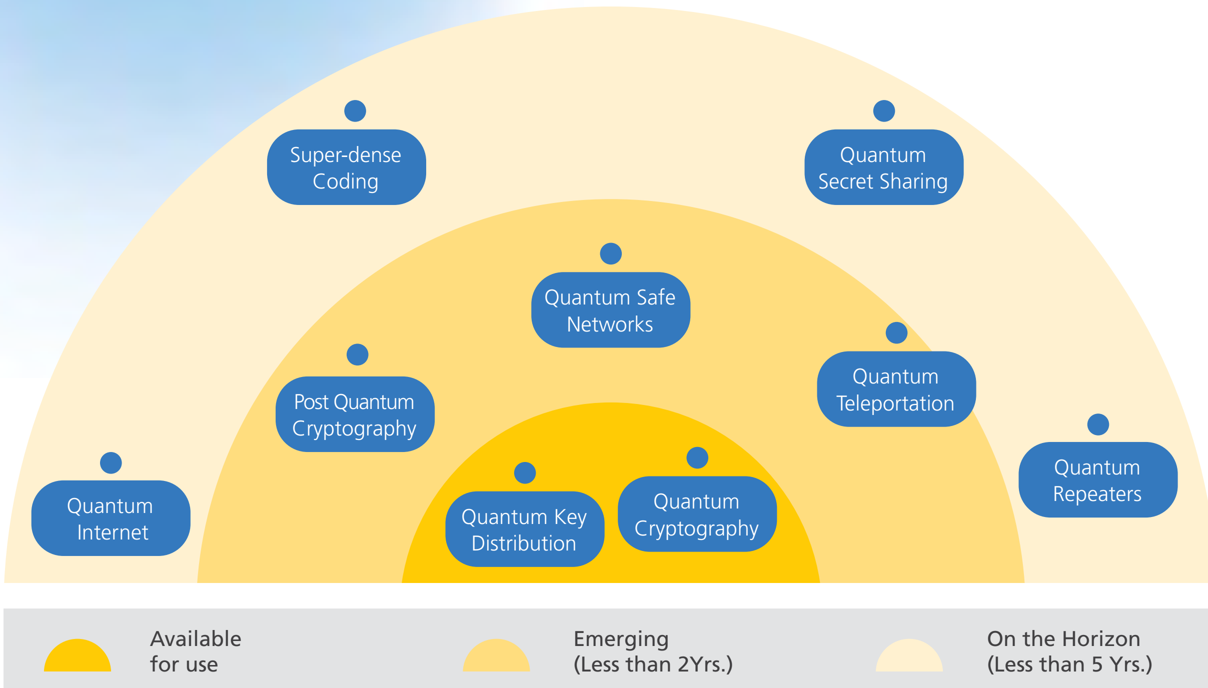


Fig.5: Quantum Communication Component Radar

The components mentioned above in the diagram have been strategically positioned based on scalability, reliability, commercial viability, cost, maturity, security, and availability. In the radar, QKD is a critical component that is readily available for commercial deployment. Similarly, quantum-safe networks fall under the emerging phase as this component will be commercially viable in less than two years.

Industry view on early adoption

To gain the first-mover advantage in this space, executives are looking for direction or guidance on how to best plan for this technology integration and implementation into their existing infrastructure. Industry experts debate whether it may generate substantial economic value before reaching full fault tolerance. Many disagree and claim that QC technology is useful despite its imperfect fault tolerance.

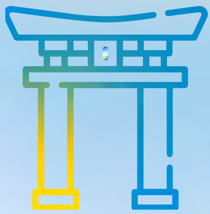
We believe the following steps could be taken by different enterprises preparing this technology to reach the mainstream.

- Build a digital infrastructure that can support the fundamental needs of QC, set up current communication workflows to be quantum-ready, and make pertinent data accessible in digital databases
- Think about hiring QC specialists internally. An organization may find it helpful to examine prospective use cases and evaluate potential strategic investments, even with a small team of experts

Establishing an engagement with the academic institutions by funding their research and offering mentorship will, in turn, strengthen the technical capabilities and develop innovative products and processes for the organizations. Along with the importance of the actual research, it is quite beneficial to talk with academicians about the concepts and gain their opinions on the significance of the most recent advancements in this field.

Below are some key examples of different groups taking advantage of technology's golden phase, wherein corporations, universities, and governments collaborate and aim to achieve different milestones.

- Craft Prospect, a UK based quantum computing firm, began working with the Quantum Communications Hub (QCH), an association of various enterprises and academia on several important projects. QCH was recently awarded the funding for a study to examine the commercial and technical viability of deploying CubeSats (small satellites) as part of future communications networks
- The UK Quantum Network (UKQN), which connects metro-scale and long-distance optical fibre lines for Quantum Communication, was created with the help of Toshiba and the Hub
- Since the UK National Quantum Technologies Programme's Phase 1 began, IDQ has emerged as prominent supplier of QKD systems to the Quantum Communications Hub. IDQ is playing a crucial role in supporting the Hub's metropolitan quantum network in Bristol



- In 2019, the University of Tokyo formed the Quantum Innovation Initiative Consortium (QIIC) with Toshiba Corp., IBM, and other prominent Japanese technology visionaries to advance Japan's position in quantum science, business, and education
- Indian Institute of Technology Madras (IITM) is leading a crucial project to create a hub for quantum science and technology that produces top-quality graduates

- Qunnect announced its Series A financing of over $8M, led by Airbus Ventures. These funds will be used to further develop their product suite, scale manufacturing, and launch a multi-node R&D quantum network testbed to demonstrate entanglement distribution protocols. This network, connected to existing fiber optic cable in New York City, will be the first of its kind in the US
- In the US, the Department of Energy (DOE) allotted USD 625 million in 2020 to set up several research labs comprising academia, government, and private companies. They also developed a blueprint that points the way forward to the future quantum internet

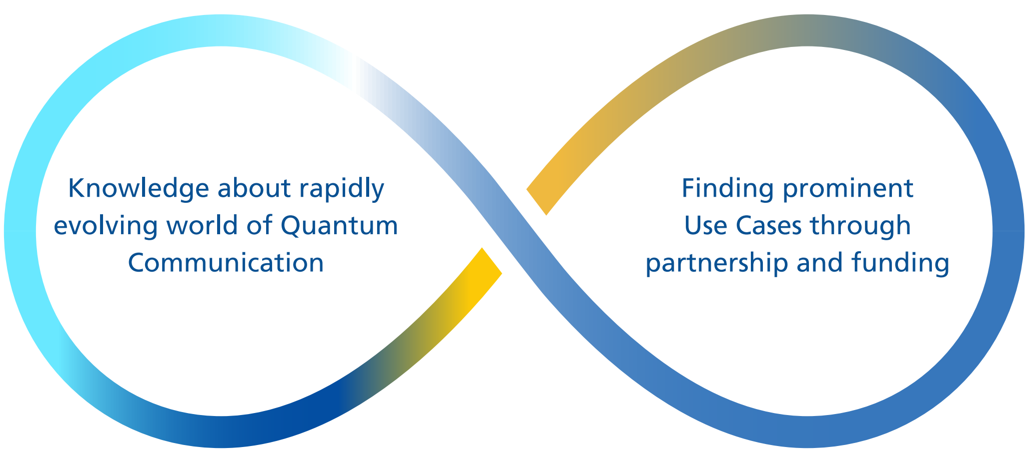
Companies ranging from start-ups to well-established global leaders can now collaborate with researchers to actively deliver potential technology, such as QC. At this stage of quantum development, collaborating will help everyone get to market faster, and users do not want to be left behind. Furthermore, enterprises are better positioned for faster growth owing to early opportunities for partnerships and potential go-to-market channels.

In line with the industry view, LTIMindtree is also collaborating with IIT Madras for joint research in quantum and connectivity. Through this partnership, LTIMindtree hopes to advance innovation in the rapidly developing quantum industry and enable the validation of frameworks and use case testing on a quantum kit. However, while this early spirit of partnership is critical to accelerating development, a precaution must be taken to prevent intellectual piracy. This will help to reduce the advent of fraud and data infringement.

03 What is Driving the Quantum Communication Industry?

McKinsey predicts that QC technology will achieve widespread adoption within the next few years. The increased demand for safeguarding sensitive information will offer significant growth opportunities across multiple verticals. Consumers, businesses, and governments are willing to pay a premium for QC-based security features.

Top organizations are already making moves towards developing the first commercial applications. We believe these early movers will drive innovation in this field and will be the first to provide their customers with more secure communication. System integrators employing this technology will be helping their customers assess and explore its potential. While the science behind the technology can be complicated, the pathway to success is clear; gain knowledge, collaborate with academia for skill development, and identify prominent use cases.



Market forecast of quantum communication technology

QC has the largest estimated market after quantum computing. As per Statista, there are nearly 111 active players in this field as of 2022. Combined, they have received funding of around USD 600 million.

Despite the tremendous market potential, the main concern for businesses now is how much time and money to devote to a technology that has the potential to change the game but is still in the expanding phase.

QC market trends by region

China and UK are among the leading adopters of QC technologies, with a 42% adoption rate, followed by the US and India, with a 22% adoption rate, as of 2022. Below are some of the key investments within different regions across the globe.

North America

- Qrypt Takes the First Step Towards Cloud-Based Quantum Secure Cryptography
- In 2022, the Cisco started investing in photonics development, which will support other hardware and software developments for quantum computing, networking, and cryptography. Photonics will also enable quantum communication
- AWS announced a research alliance with Harvard University to address the fundamental scientific challenges associated with building quantum networks
- JPMorgan Chase, Toshiba and Ciena build the first QKD network
- A program funded with a USD 51 million grant from the National Science Foundation has helped the University of Arizona establish a Center for Quantum Networks
- Canada launched its National Quantum Strategy in July 2020 funded with almost USD 300 million

Europe

- ID Quantique collaborates with Poznań Supercomputing and Networking Center (PSNC) to establish a new QKD link between Poznan and Warsaw
- ID Quantique expands the XG Series with the launch of the Clavis XG
- In 2023, a UK corporation will begin using satellites to transmit secret quantum keys
- In October 2022, Quantum Xchange expanded its global presence through partnering with Warpcom to bring Quantum-safe networking to Spain and Portugal
- In January 2021, the French government disclosed a EUR 1.8 billion quantum road map for 2021-2025, focused on quantum computing, communication, and sensing
- The EU is collaborating with companies including Airbus, Leonardo, and Orange on a project called EuroQCI
- In April 2021, the Netherlands invested over USD 700 million to build quantum labs and the UK assigned another USD 200 million to quantum research in March 2021

Asia Pacific

- QNu Labs launches a new QKD system and QRNG chip
- China created a National Laboratory for Quantum Information Sciences backed with USD 10 billion in funding over five years
- In India, the National Mission on Quantum Technologies & Applications was established in 2020 with a USD 1 billion budget
- 4,600km | Length of a quantum communication network in China that already connects several cities and a satellite in space

Figure 6: Key developments in funding and research

When it comes to technology maturity, below are the short- and long-term technology development scenarios in the industry:

Short-term development potential

Within QC, technologies for autonomous QKD systems for metropolitan and urban settings are expected to achieve low-cost, high-security key rates of 10 Mbps or faster, including multiplexing (stage 4 Technology Readiness Level (TRL)). Here, TRL is a method for understanding the technical maturity of a technology during its adoption phase.

Systems for certification and standardization of QC devices will likely be established according to the requirements of the security community, industries, and government authorities (stage 7 TRL).

It will be possible to enhance the functionality of multi-party network building blocks based on quantum repeaters and quantum entanglement (Stage 4 TRL) through the creation of fundamental technologies such as scalable and effective quantum interface teleportation, frequency modulation, memories single-step error correction, and entanglement reduction entangled light sources and photons.

Long-term development potential

The goal is to realize the generalized use of autonomous QKD systems and other important aspects of quantum networks, device-independent Quantum Random Number Generator (QRNG) systems, QKD communication for urban streets (stage 7 TRL), and quantum cryptography over a range of 1,000 km (stage 7 TRL). .

We think that QC technology's short- and long-term development potential will depend on different industries' strategies. The pilot conducted within various industries would help in the thoughtful evaluation of various aspects of the technology leading to the development of real-time use cases.

We also believe that a significant percentage of a company's emphasis should be on practical matters, such as the steps necessary to get from the initial prototype to at-scale manufacturing or the partnerships that might speed up their return on investment in the short term.

04 Trending Events Across Quantum Communication Space

Here we examine the present state of key players in this space from various perspectives, including tech giants' technological advancements, collaborations, practical applications, and start-up enthusiasm.

The QC Market is dominated by start-ups like **ID Quantique, ISARA, Quintessence Labs, MagiQ Technologies, and Qubitekk**, that account for a significant market share. Some hardware providers like Toshiba, Cisco, and Quantum Xchange are investing in low-cost QKD hardware development. These companies will likely focus on verification based on location, security sharing, and queries for anonymous long-distance data transmission using QKD on test bed networks.

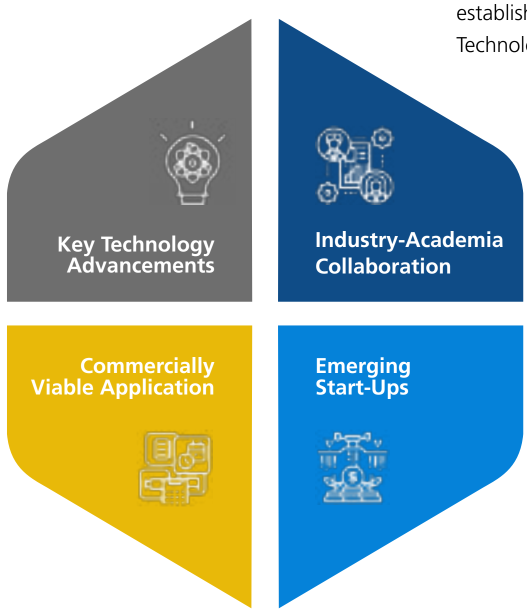
This domain witnessed a rise in strategic alliances, mergers, and acquisitions among technology partners looking to expand their product and market reach. We think that organizations will focus on building certification and standardization systems for QC devices in response to the needs of various communities, such as the security community, industry, space agencies, and government bodies. We firmly believe that practical protocols and different forms of efficient algorithms for quantum networks, such as digital signatures, should also be considered while building any certification.

Key Technology Advancements

- April 2022: **BT, Toshiba, and EY** launched the world's first commercial quantum secured metro network trial
- May 2022: **Qunnect** is developing the technology for a quantum repeater and sold the first unit of one required component called a Quantum Memory in 2021

Industry-Academia Collaboration

- May 2022: **QuTech** (a cooperation between TU Delft and TNO), **KPN, SURF, and OPNT** have collaborated to establish the world's first quantum network with the goal to create the world's first completely functional quantum network with high-speed fiber links
- 2018: **AT&T** in collaboration with the California Institute of Technology (**Caltech**) is working to establish the Intelligent Quantum Networks and Technologies (INQNET) program



Commercially Viable Application

- In the United States, the Quantis-enabled Vsmart Aris 5G is being offered. Quantis is also being used in a variety of embedded applications, including IoT authentication with PUF chips
- Quantum Xchange is enthusiastically pushing their Phio TX solution for the on-demand delivery of ephemeral out-of-band keys (no key storage is required)

Emerging Start-Ups

- QuantumCTek is a quantum unicorn that manufactures gear for China's expanding quantum networks. It promotes the QKD-PHA300 and QKD-POL1250 as their backbone products
- QphoX is a start-up that creates quantum transduction devices that transfer photons between microwave and optical telecom frequencies

Fig. 7: Categorization of the players

Quantum communication market trends by region

As per the quantum communication market trends by region, various innovative firms headquartered in Japan and China accounted for a majority of the share in the top 10 patent holders in this space in 2021.

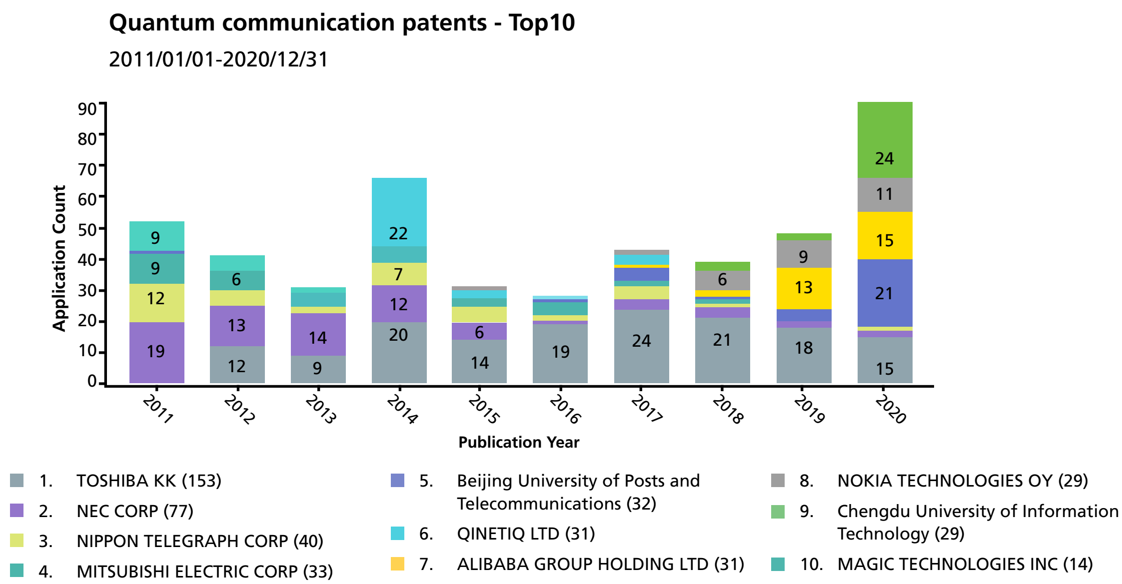


Fig. 8: Quantum communication patents, 2011-2020 (QED-C)

According to patent application data mentioned above, US, Japan, and China are expected to have the strongest foothold in the number of patent offices headquartered in these countries. The US Patent and Trademark Office, the Japan Patent Office, and the China National Intellectual Property Administration are the organizations that have granted the most patents. This reflects the degree of activity and the areas where Quantum Communication space is most likely to develop in the short term.

Every day, new quantum applications are discovered, and new findings are documented in research papers or patents. To keep up with this tech evolution rate, these organizations are either collaborating in joint research or deploying Quantum Communication hardware and software from companies that are doing core technology research. Other prominent players who have patented the technology include Toshiba, NEC, Nippon, and Alibaba, among others.

05 Quantum Communication Industry Use Cases

Based on breakthroughs in the QC field, we have articulated some of the use cases to understand the potential impact of discoveries and outline how these developments may translate to use cases. Moreover, we can also cross-leverage some of the use cases mentioned below into more than one industry which we think will be crucial in the next phase.

Banking and Financial Services (BFS)

— *Protecting sensitive client information and safeguarding critical business data in the BFS industries*

Start-up ID Quantique (IDQ) has demonstrated the use of QC in data security applications. They have utilized techniques such as QRNG (Quantum Random Number Generation) and QKD. QC also has the potential to encrypt credit cards. Researchers have proposed Quantum-Secure Authentication, a solution based on quantum cryptography for developing hack-proof credit cards.

Government and defense

— *Protecting classified and sensitive data in government and defense industries*

Companies have started providing quantum key generation and management solutions for governments and advanced QKD solutions for long-term data protection secured against future attacks by quantum computers.

Healthcare

— *Protecting sensitive data in Remote Data Centers (RDCs)*

Healthcare institutions need extremely trustworthy networks to transfer sensitive data, including patient records that include names, dates of birth, addresses, social security numbers, and clinical records.

— *QKD integration to safeguard the data*

Healthcare businesses may employ QKD to safeguard their data in the present and future security landscapes.

Space industry

— *Secured satellite communication through QC*

The near-term applications of QC in space include secure satellite communication, potent new sensors, and precise timing synchronization. Today, various software and hardware integrators collaborate closely with business partners and the governments of different countries to develop quantum sources, detectors, electronics, and ancillary devices. These devices can withstand rocket transport and perform dependably in hostile space environments to meet the growing demand for space-qualified quantum technology.

Cross-domain use cases

— *Traitor tracing in IT and telecommunication*

Every user in a traitor tracing system has a unique secret key. Content providers can use a quantum key to encrypt messages, and each end-user can use a combination key to decrypt the ciphertext. For instance, some users work together to create a pirate decoding box. The tracing method then has a unique algorithm, named the Tardos Tracing algorithm, that can locate at least one of the hidden keys used to build the pirate decoding box.

— *Quantum keys for enhanced device security at the personal and professional front*

This use case involves ensuring the integrity and identity of the device to develop a safe and trustworthy IoT solution. Additionally, the user must ensure that no one has tampered with the hardware or software integrity by authenticating the device identity. There are solutions available in the market for each of these issues. Most of them combine secure hardware components with cryptographic methods. Moreover, QC has a built-in two-factor authentication, and quantum keys can be refreshed in bulk whenever required.

— *Creating a foundation of safe QC using the QKD technique*

QKD is anticipated to take the lead in the information security sector. Moreover, organizations can now implement Product Quality Control (PQC) based solutions and then back them up with QKD to ensure the security of the transition from classical communication to QC.

All these use cases aim to establish enterprise security, which is essential as the technology matures. We also believe that most QC solutions have limitations concerning processing power and pricing. Some solutions are not technically or financially viable because of their limitations, especially when they involve time-consuming, computationally expensive cryptographic processes, such as temporary key creation or encryption. However, organizations can concurrently advance the development of quantum hardware so that software applications are ready when the QC network/channel launches.

06 Potential Regulations and Standards Scenario

Once QC becomes mainstream, it will become essential for researchers, regulators, and legislators to begin discussing the related benefits, threats, and risks it can mitigate. Some security aspects to focus on are data privacy, protection, and sharing. We must not only focus on tools used to perform malpractices but also keep a close eye on their legal and illegal use. This could be done by establishing proper regulatory compliance. As Rob Heverly, Associate Professor of Law at the Albany Law School, said, "instead of focusing on the way in which fraud happens over the internet, just make a fraud law." Heverly's work with the Center for Quantum Networks (CQN) focused on controlling the quantum internet and adequately describing this novel technology to legislators and regulators to make informed policy decisions.

Standards and regulations will be crucial in integrating QC devices into larger, more complicated systems. The testing and measurements required to validate quantum-enabled measurement systems and methods are supported by the establishment of standards. Moreover, the development of components and devices is made possible by standards that may communicate with one another and help to ensure quality concerning objective criteria.

Additionally, in terms of developing new standards for QC and other quantum-based technologies, the UK is at the forefront. The UK National Quantum Technologies Programme (UKNQTP) was created in 2013 after the government announced a USD 308.2 million investment in recognition of the revolutionary potential of new quantum technologies. It has created new possibilities for trading with the UK as a crucial link in the global supply chain. Implementation of the UKNQTP is already progressing the standards for quantum technologies by participating in international standards agencies, allowing the UK to drive the latest developments.

The Institute of Electrical and Electronics Engineers Standards Association (IEEE) is currently developing terminology and performance metrics for quantum computing and communication. Given IEEE's global authority and reputation, these standards could become quite influential and beneficial to the industry if adopted. Quantum Communications Hub, a UK-based quantum technology research company, also states that its goal for QKD is to develop measurement protocols for each system component. These protocols will then enable uniform product validation through a defined assurance process and a network of accredited testing facilities that can provide testing and validation against agreed-upon standards.

07 Conclusion

Quantum communication is an exciting research area rapidly moving towards commercialization. To explore the technology's true potential, enterprises should develop and deploy end-to-end QC infrastructure comprising various hardware and software solutions. This infrastructure will allow information and data to be transmitted while being capable of connecting crucial public communication assets throughout the communication network. By investing in setting up this infrastructure, organizations shall be able to stand out from the competition and operate more effectively and efficiently in an environment that is becoming more dynamic and complex.

An organization's strategy will determine which problems to address and how to maximize value through QC technology. Some of the significant steps that organizations should follow to secure the existing data encryption methods are:

- Conducting robust assessments to understand the internal state of data protection
- Effectively managing encryption keys and protecting them by using distinct keys for information copied across regions and periodically modifying and updating them
- Including security specialists right from the start when creating new software and important updates. By using the development, security, and operations (DevSecOps) concepts for the upkeep of current applications and the creation of new ones, an organization can increase the security of its application landscape

In response to the increasing viability of the quantum era, LTIMindtree is also employing a diverse strategy to explore and integrate the advantages of quantum communication by partnering with IIT-Madras to set up an industry-academia consortium. We also conducted a quantum event in July 2022, bringing together some great minds in this field. Further, our partnership with QNu Labs will develop quantum-safe products and solutions for various end-use verticals.

As quantum technology progresses from fiction to reality, the new age of QC beginning throughout the world will no longer be prescient. A wait-and-watch approach is no longer an option.

Now is the time to act and start investigating multiple aspects of quantum communication.

Delve into the world of Quantum Communication by visiting Solving With Quantum

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