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QUANTUM COMMUNICATIONS AND SECURITY

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GENERAL OVERVIEW

Communications and security is one of the most important industries that quantum computing will change during the next decade. This change brings new challenges that the world must face while enabling exciting, innovative solutions for complex problems.

Although the field of quantum computing and information is plagued by hardware limitations, this subfield is where hardware and technology are the most mature. Many studies and experiments have achieved significant milestones during the past few years. No matter what kind of business your organization does or what industry your organization competes in, it is vital for you to become aware of these changes. Doing so will ensure that your business infrastructure stays secure and you use leading technology.

KEY CHALLENGES

COMPROMISED SECURITY	The arrival of quantum computing undermines widely used encryption schemes like RSA, which affects organizations worldwide. Therefore, new and improved encryption protocols are needed to keep your system secure.
EFFICIENCY	The world has become reliant on data, so more efficient ways of transmitting data have become increasingly relevant. Quantum information enables faster and more secure ways of transmitting information.
SENSING AND MEASUREMENTS	Many industries require technologies that perform precise measurements. Quantum sensors and detectors provide such capabilities.

BUSINESS BENEFITS

Quantum technologies deliver a wide range of benefits to any organization. Some of which may possibly become mandatory.

- Updates your security standards
- Gives your customers peace of mind
- Increases the speed of your data transmissions
- Optimizes your processes

USE CASES

SAFEGUARD CRITICAL DATA TRANSMISSIONS

Many industries, ranging from the public sector to finance and healthcare, among others, regularly handle critical data like military secrets, transactions, and customer information, which requires data transfers.

With quantum key distribution (QKD), your users determine whether their communication channel is compromised, ensuring a perfect safeguard for such critical information transmissions.

FUTURE-PROOF ENCRYPTION PROTOCOLS

Shor's algorithm heralded the interest seen in quantum computing today. But it also undermined the security of widely used encryption schemes like RSA. While QKD perfectly safeguards your information, its costs are prohibitively high and infrastructure changes reach wide.

Look for other classical alternatives to RSA that you can implement today with different post-quantum cryptography (PQC) protocols.

SECURE HIGH DATA VOLUME NETWORKS

Data centers and cloud computing are increasingly prevalent. And with the introduction of the internet of things (IoT) into society, the amount of data you transmit will increase.

Learn how many quantum communication protocols potentially redefine how you relay information in the future by speeding up your data transmissions.

WHY THINK ABOUT QUANTUM NETWORKING NOW?

A World Economic Forum report estimates that **"20 billion devices will need to be upgraded or replaced with post-quantum cryptography in the next 20 years."** Changes in your infrastructure are long processes and, consequently, they take a long time to implement.

You must make sure that your transition is smooth, especially because it's crucial to the security of your systems. A trusted partner like SoftServe navigates your organization through this complex process.

WHY SOFTSERVE

SoftServe is a premier IT consulting and digital services provider. We expand the horizon of new technologies to solve today's complex business challenges and achieve meaningful outcomes for our clients. Our boundless curiosity drives us to explore and reimagine the art of the possible. Clients confidently rely on SoftServe to architect and execute mature and innovative capabilities, such as digital engineering, data and analytics, cloud, and AI/ML.

Our global reputation is gained from more than 30 years of experience delivering superior digital solutions at exceptional speed by top-tier engineering talent to enterprise industries, including high tech, financial services, healthcare, life sciences, retail, energy, and manufacturing.

We partner with major technology players, such as Google Cloud Platform, Amazon Web Services, Microsoft Azure, Salesforce, and NVIDIA, to give clients a competitive advantage in the market.

LET'S TALK

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