

CELTIC-NEXT

Project Proposal Pitch

13th of March, Online

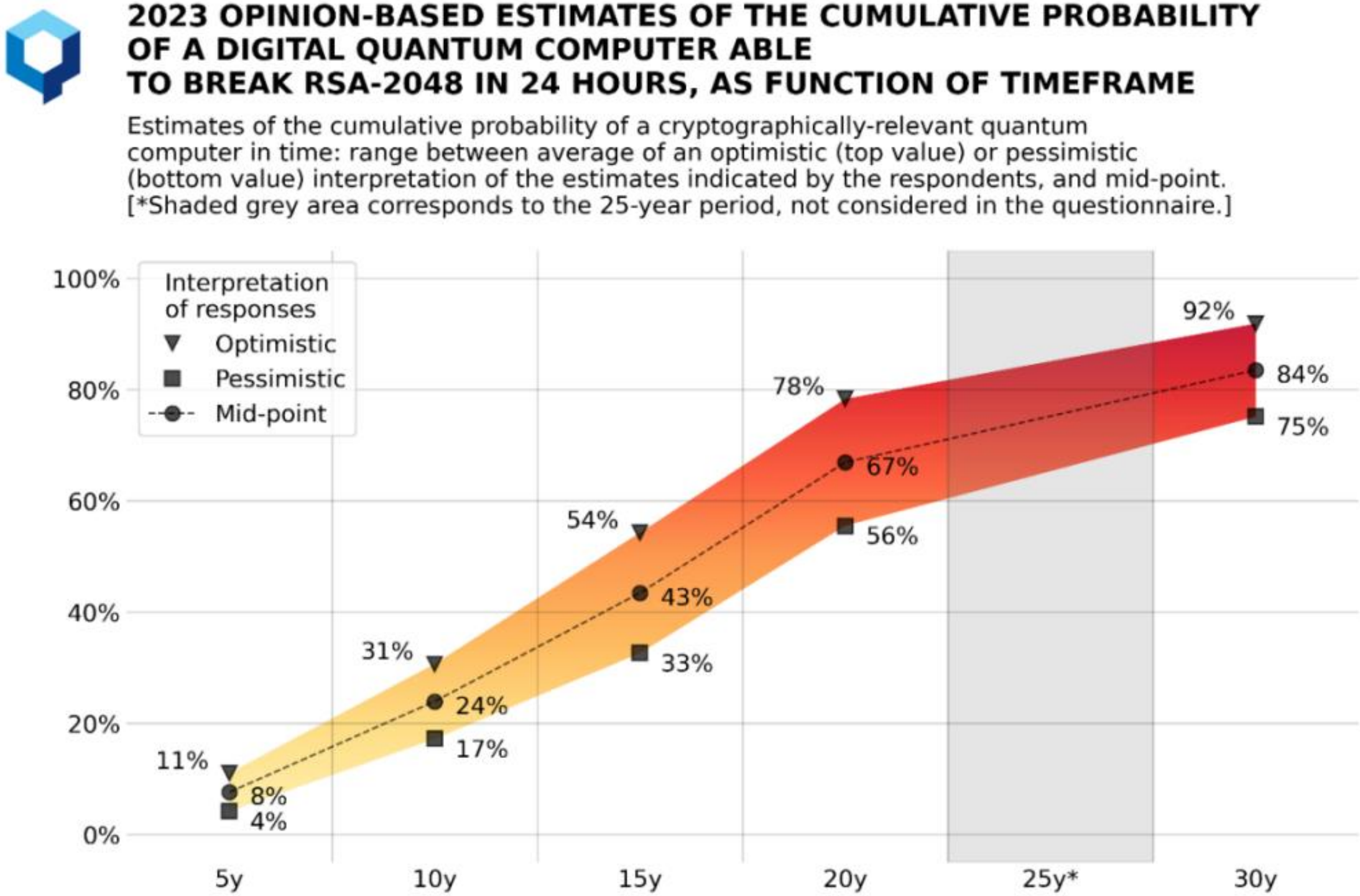


6G-Guard: Defending Mobile Communication in Post-Quantum World

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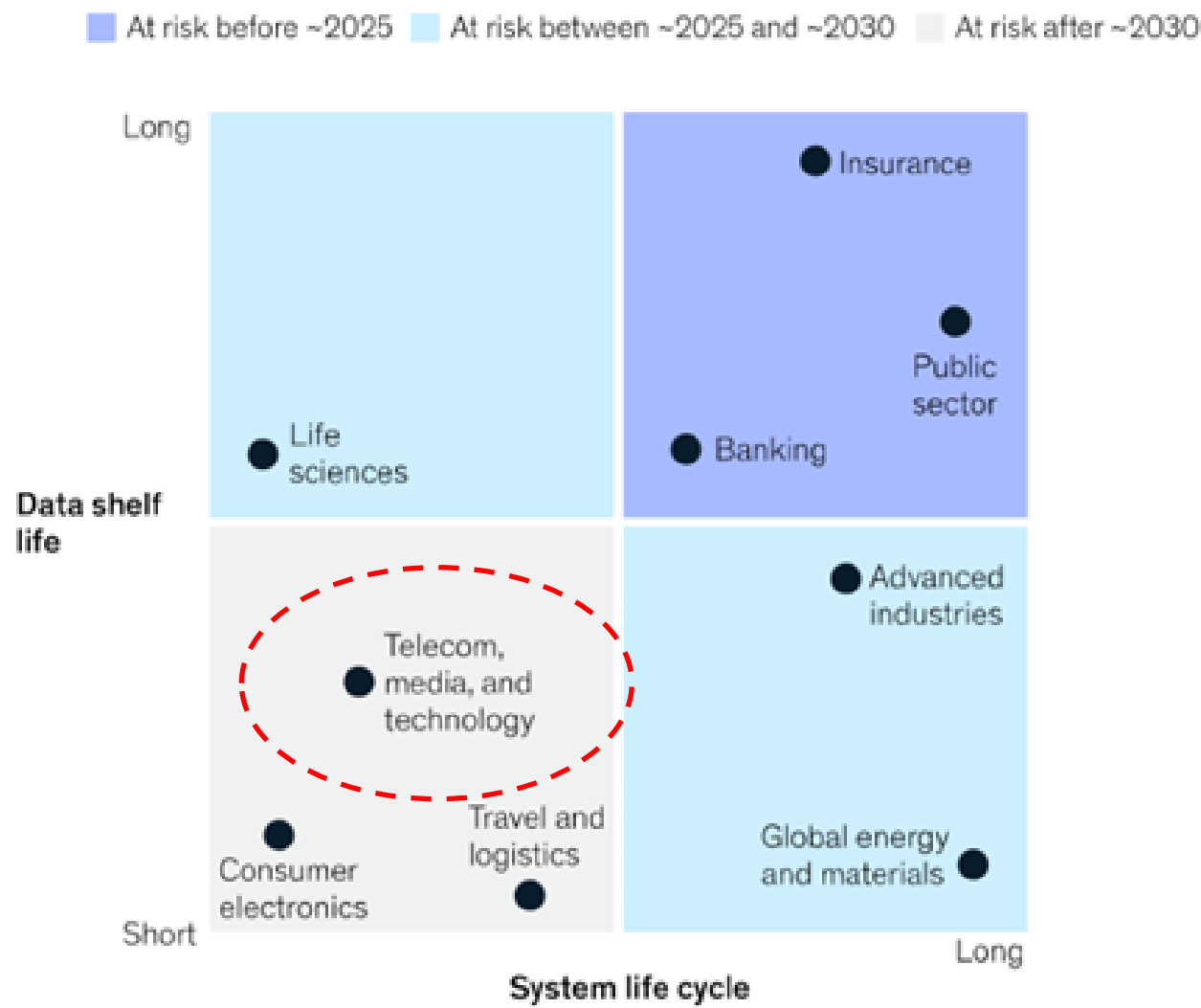
Teaser



<https://globalriskinstitute.org/publication/2023-quantum-threat-timeline-report/>

Industries should prepare for post-quantum cryptography based on data shelf life and system lifetime.

Risk of quantum-powered attack by industry



In the post-quantum era, MNOs must maintain their commitment to privacy-preserving communication services.



Organisation Profile



DIVERSIFIED STRATEGIC FOCUS AREAS

Digital Services & Solutions: **4.8 Mn paid user**
 Digital Business Services: **#1 ICT Solutions Provider**
 Techfin: **7.3 Mn** Paycell user, **2.9 Bn** consumer fin. loan book in Financell

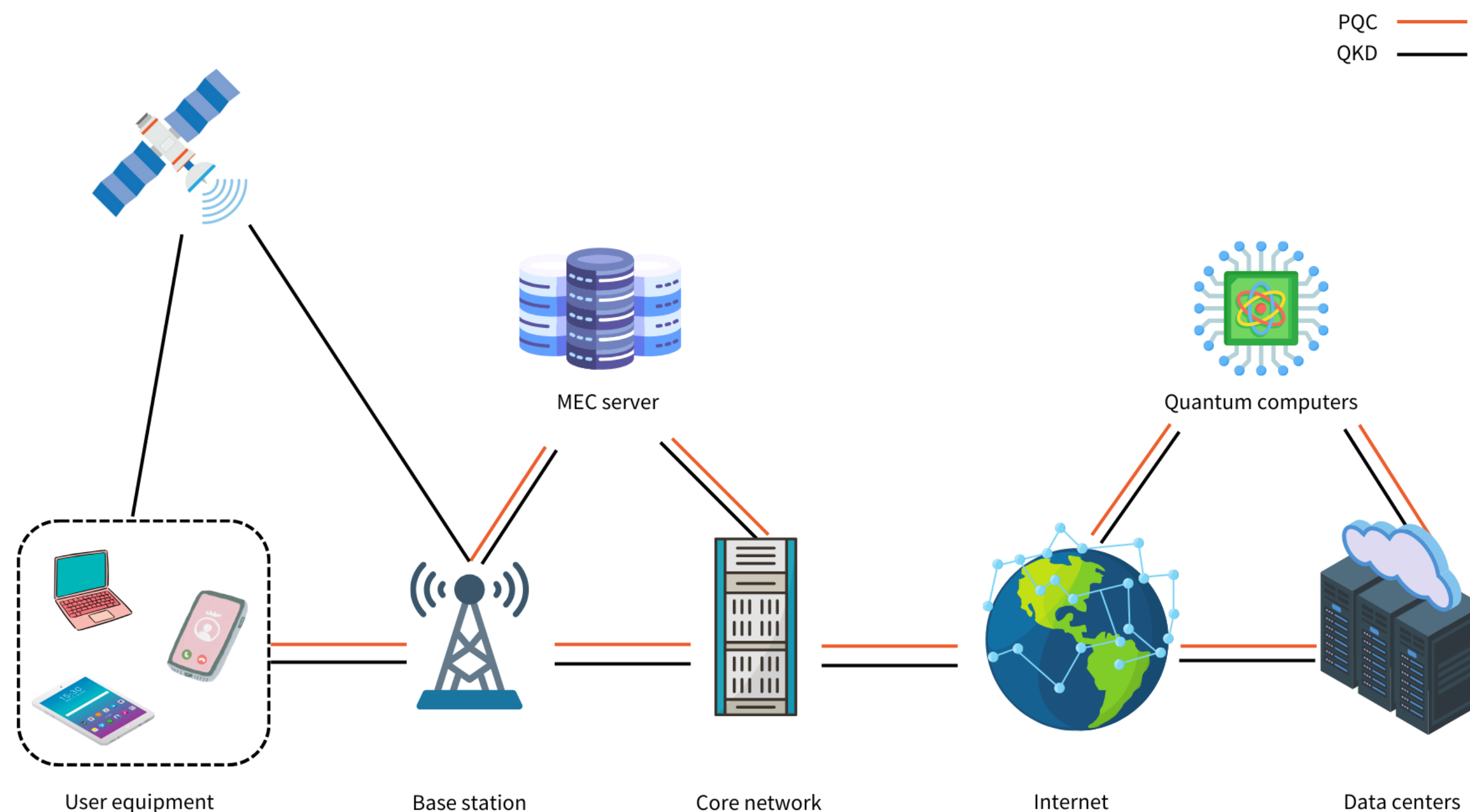


#1 DIGITAL OPERATOR IN TURKIYE

Market leader in mobile: **37.5 Mn**
 Best challenger in fixed broadband: **2.8 Mn**
>99% coverage
9K towers
5.2 Mn fiber homepass



Proposal Introduction



Vision: Establish a **robust** and **secure** framework for mobile communication infrastructure, specifically targeting the evolving landscape of 5G/6G networks in the **post-quantum world**

Motivation: Recognition of the **imminent shift** towards quantum technologies and the **potential vulnerabilities** it poses to existing mobile communication systems

Target: Development of innovative **solutions** and **protocols** tailored specifically for the secure transmission of data over 5G/6G networks in a post-quantum world

Proposal Introduction

Expected Outcome:

The **development** and **deployment** of a comprehensive suite of quantum-safe solutions tailored for 5G/6G mobile communication infrastructure. This includes the integration of **quantum-resistant encryption algorithms**, **quantum key distribution mechanisms**, **quantum algorithms for network optimization and management**, and **advanced intrusion detection systems** into existing networks. The outcome will be a **robust framework** that enables secure and reliable communication in the post-quantum era.

Potential Impacts:

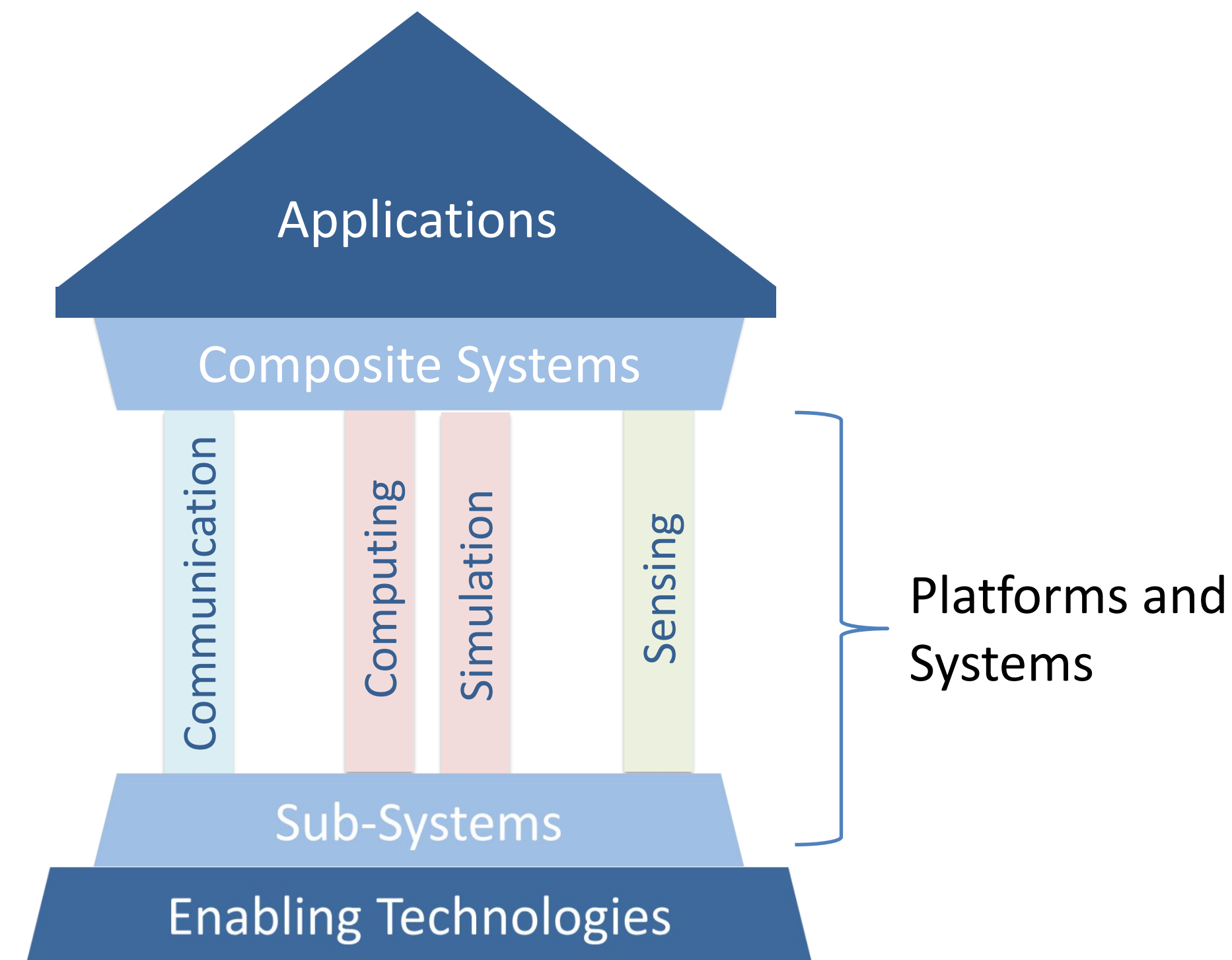
- It will ensure the **resilience of mobile communication networks** against emerging quantum threats, safeguarding sensitive data and critical infrastructure.
- It will foster **innovation and technological leadership** in the field of quantum-safe communication, positioning stakeholders at the forefront of secure network development.
- It will enhance **trust and confidence** among users, businesses, and governments, driving widespread adoption of quantum-safe practices in the mobile communication sector.

Project Roadmap:

The project duration is expected to span **36 months**, divided into distinct phases. The initial phase will focus on **research and development**, including the design and testing of quantum-resistant algorithms and protocols. Subsequent phases will involve **implementation, integration**, and **deployment** of these solutions within 5G/6G networks. Throughout the project, there will be ongoing evaluation, refinement, and optimization to ensure the effectiveness and scalability of the developed framework. Additionally, stakeholder engagement, training, and dissemination activities will be conducted to maximize impact and promote knowledge exchange.



Partners



<https://www.cencenelec.eu/areas-of-work/cen-cenelec-topics/quantum-technologies/>

Turkiye consortium is almost full!

We are looking for the collaboration with partners who are interested in the application of quantum technologies in telco domain and have an experience on:

- Post quantum cryptology
- QKD
- QRNG
- Quantum algorithms
- Quantum data encoding
- Satellite-based QKD Solutions
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Contact Info

For more information and for interest to participate please contact:



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