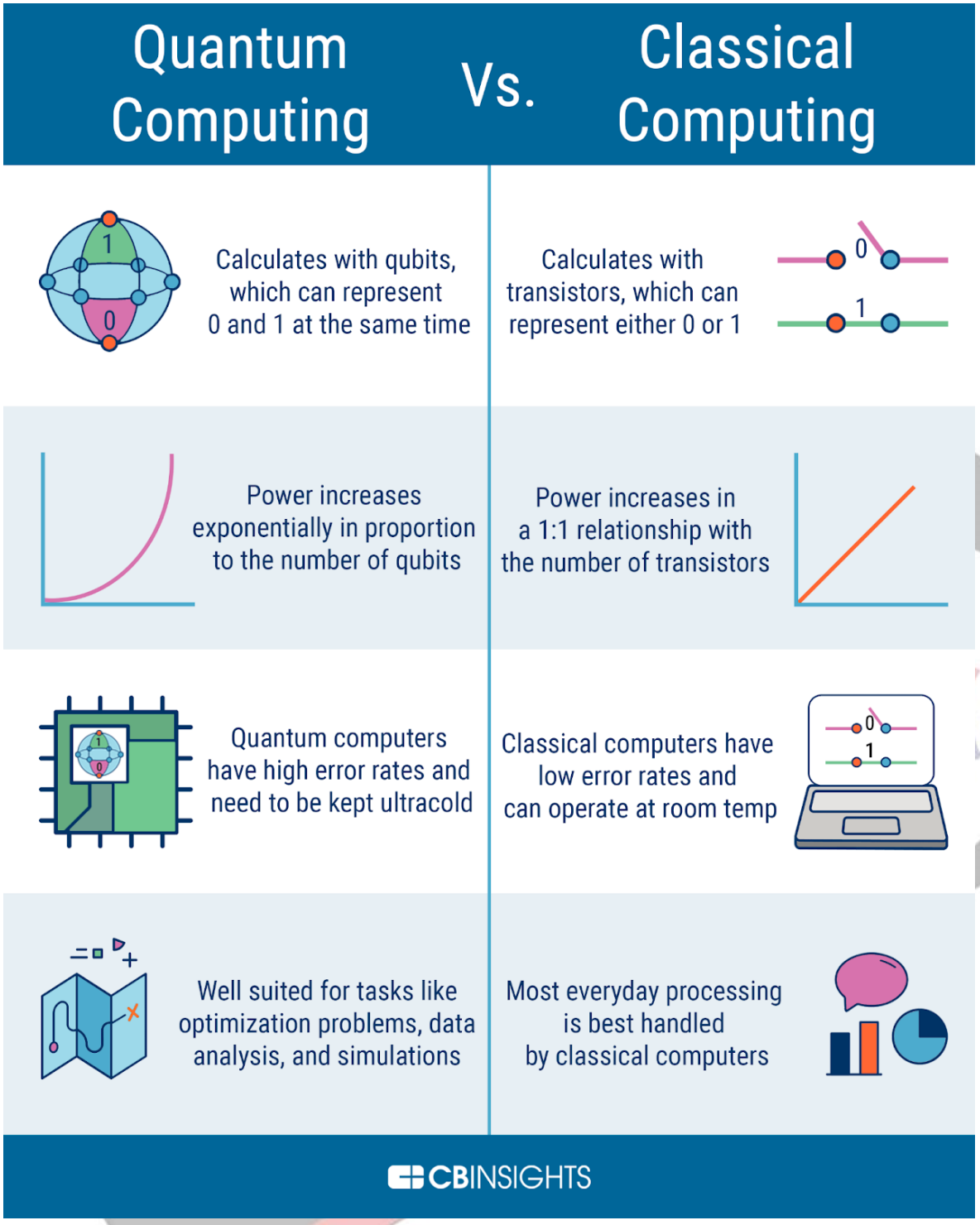
Post-Quantum Encryption Cryptography

Source: HT

Virtual Private Network (VPN) companies are adapting to the **potential threats** posed by **quantum computing** through the implementation of **Post-Quantum Cryptography (PQC)**.

- **Quantum computing** poses several **threats to current encryption** methods due to its ability to perform extremely fast calculations.
    - **Breaking Asymmetric Encryption:** Quantum computers can solve complex mathematical problems like **factoring large numbers** and solving discrete logarithms.
        - This could compromise encryption methods like **Rivest-Shamir-Adleman (RSA)** and **elliptic curve cryptography (ECC)**, which are widely used for secure communication.
    - **Store Now, Decrypt Later (SNDL) Attacks:** Cybercriminals may **store encrypted data instantly and decrypt it late**r when quantum computers become powerful enough, endangering sensitive information.
    - **Industry-Wide Data Security Risks:** Sectors like **finance, healthcare,** and **government communications** face risks of data breaches and financial losses if quantum computers break encryption standards.
- **Post-Quantum Encryption/ Cryptography (PQC):**
- **PQC** refers to **cryptographic methods** that **do not rely on mathematical problems** easily solvable by **quantum computers**.
- It is also known as **quantum-resistant, quantum-safe,** or **quantum-proof cryptography.**
- These methods are designed to **remain secure against attacks** from both **classical and quantum computing systems.**
- A **VPN** technology **encrypts data and hides a user's IP address** to ensure **secure communication between devices** to **protect data privacy and security.**

//



Read More: [Post-Quantum Cryptography](), [Virtual Private Network]()