

ABSTRACT

The development of quantum technology has reached a stage that threatens the security of the public-key cryptography underpinning the financial business sector while Indonesian law does not yet possess an instrument specifically regulating it. The first problem is the utilisation of quantum technology by financial businesses worldwide and in Indonesia and the potential for disruption detrimental to consumers. The second problem is the regulation of the utilisation of quantum technology in the financial business sector in Indonesia and in the United States and China in balancing the rights and obligations of financial business service providers and consumers.

This research employs the normative juridical method with statutory, conceptual, and comparative law approaches, resting on secondary data in the form of primary, secondary, and tertiary legal materials, and analysed qualitatively.

The research findings show that the financial business sector is at once the early adopter of quantum technology and the custodian of the most exposed consumer data, such that the Harvest Now, Decrypt Later strategy inflicts harm in the present. Indonesia's technology-neutral legal framework is unable to furnish legal certainty because the content of its security obligations cannot be ascertained *ex ante*. The United States and Chinese models cannot be applied owing to institutional constraints and constitutional incompatibility. This research formulates the SANDIKALA Framework, which constructs post-quantum migration obligations through the modalities of law, architecture, market, and norms.

Keywords: Quantum Technology; Legal Certainty; Consumer Protection