**R&D phase** | Research **Expected Commercialization** | FY30-

Mehr Licht!
More Photonics for Intelligence

#D06

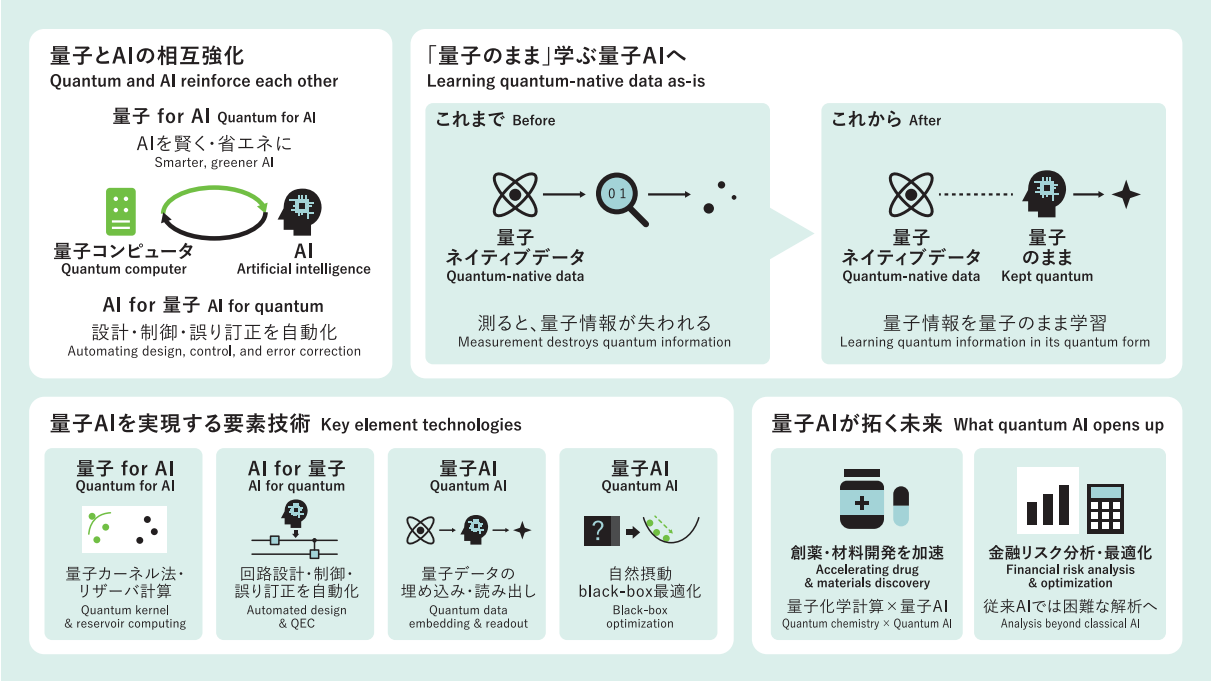
#AI & Quantum Infrastructure#Digital & AI Transformation#Carbon Neutral

# Quantum AI for Quantum-Native Data

Black-box learning of quantum behavior without state collapse

## Technical Challenges & Goals

As quantum technology advances, methods are needed to analyze complex data from quantum devices and sensors without information loss. Since measuring a quantum state destroys information, we aim to integrate quantum technology and AI, develop AI that learns quantum data as-is, and understand the unknown quantum world.




## Key Technologies

### Core Technologies

- Quantum for AI: kernel methods, reservoir computing
- AI for quantum: automated design, control, QEC
- Quantum AI: learning as-is, black-box optimization

### Key Differentiators

- Learning directly on quantum states, with theoretical advantages reported for certain tasks
- Proprietary natural-perturbation black-box optimization for quantum data without backpropagation

## Use Cases

**Financial Services**

By integrating quantum simulation with Quantum AI that learns directly from quantum states, we aim to better predict molecular properties for drug and materials development, as well as financial risk analysis and optimization.

**Exhibitors**

NTT, Inc. Network Innovation Laboratories
NTT, Inc. Communication Science Laboratories

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