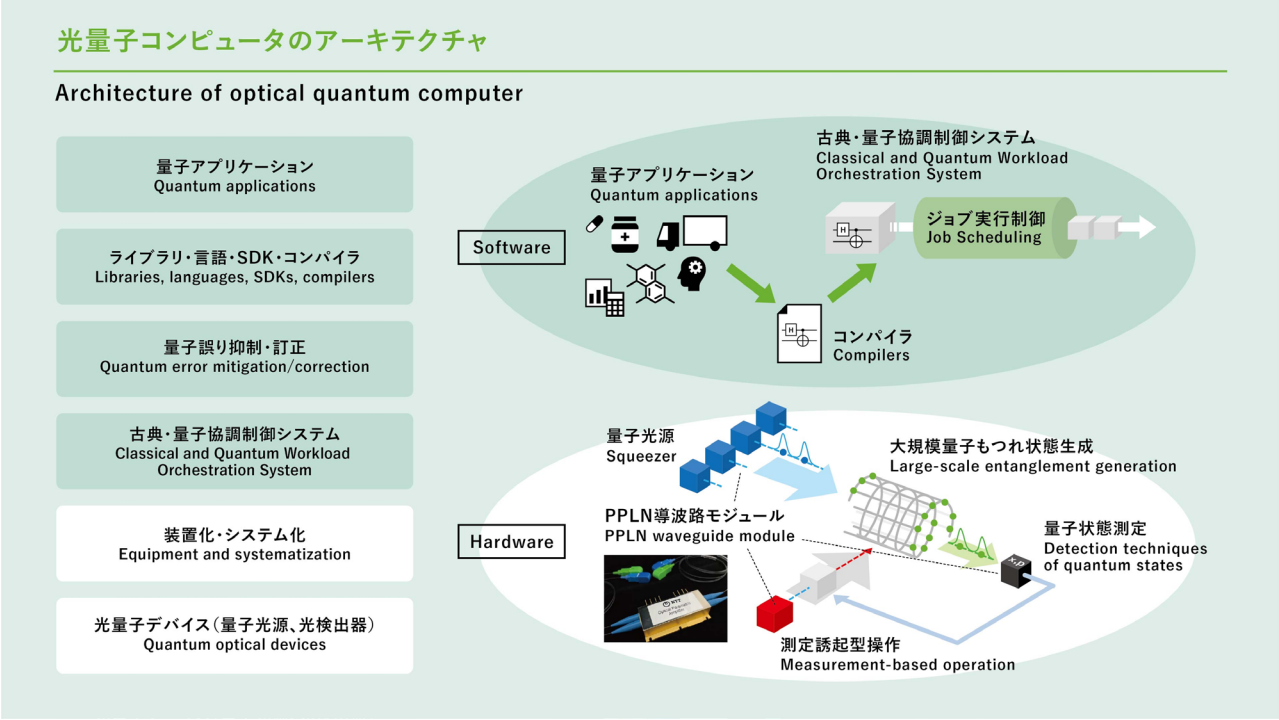
Carbon Neutral # Digital Infrastructure

Creating a sustainable future through quantum computing

Optical quantum computing for the future

Background and Technical Challenges

The industrialization of quantum computers requires device technology with large-scale quantum computing capabilities and application platform technology tailored to device characteristics.



R&D Goals and Outcomes

By 2030, we will develop a large-scale general-purpose optical quantum computer capable of solving various problems.

Key Technologies

01 Core Technologies

- High-performance quantum light-source/detection device
- Quantum error suppression and correction
- Classical and quantum cooperative control

02 Key Differentiators

Large quantum computers typically require physical expansion. Optical systems can multiplex information in space, time and frequency axes, making it easier to develop large-scale quantum computers.

Use Cases	Multi-Industry	**R&D phase**	Research
Technology Schedule	FY30-	**Commercialization Schedule**	FY30-

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NTT Network Innovation Laboratories

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