

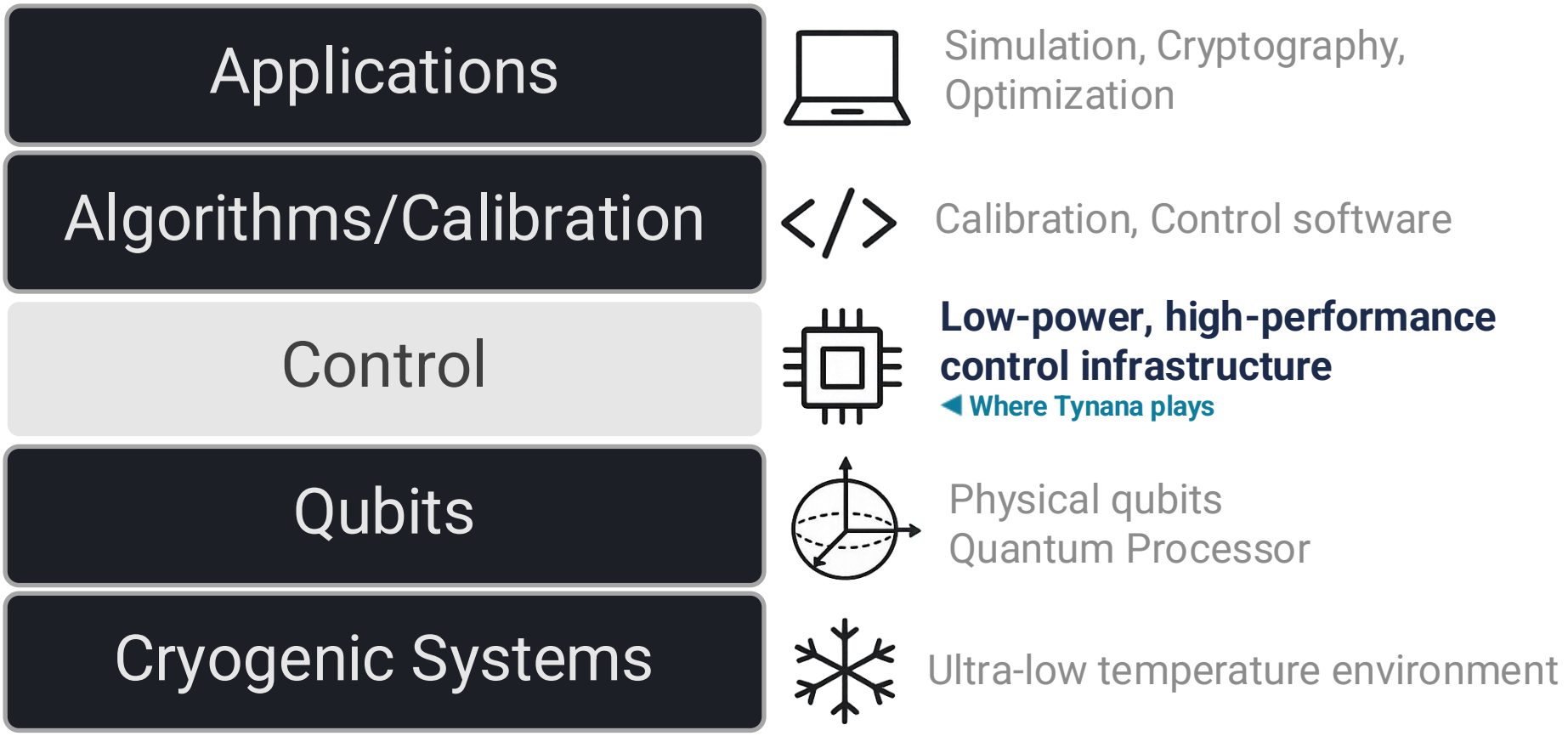
WE BUILD QUANTUM CONTROL INFRASTRUCTURE

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Quantum Computing Platforms

Superconducting	Trapped ion	Neutral atom	Spin	Photonics
Google, IBM	IONQ	QuEra	diraq	PsiQuantum
STRENGTH	**STRENGTH**	**STRENGTH**	**STRENGTH**	**STRENGTH**
Fast gates Mature tooling	High fidelity Long coherence	Large arrays Reconfigurable	Compact qubits CMOS processes	Low decoherence Networking
LIMITATION	**LIMITATION**	**LIMITATION**	**LIMITATION**	**LIMITATION**
Cryogenic load Dense wiring	Slower gates Complex optics	Atom loss Laser complexity	Device variability Cryogenic control	Photon loss Probabilistic gates
2Q GATE FIDELITY*	**2Q GATE FIDELITY***	**2Q GATE FIDELITY***	**2Q GATE FIDELITY***	**2Q GATE FIDELITY***
99.9%	**99.99%**	**99.5%**	**99.5%**	**99.22%**
MATURITY	**MATURITY**	**MATURITY**	**MATURITY**	**MATURITY**
Cloud access QEC demos	Cloud access QEC demos	Early systems QEC demos	Small prototypes	Universal prototypes

The control layer is the bottleneck



The next scaling bottleneck is not the qubit chip — it is the control layer.

The Control Layer Is the Next Scaling Bottleneck

Quantum computers need more than better quantum processors. They need control systems that can scale.

Today, quantum computers rely on bulky cables to send thousands of precise signals into an ultra-cold refrigerator. As these machines grow, those cables **add heat, take space, and create a blind spot**: the system cannot always tell whether a bad result came from the quantum chip or from a bad signal delivered to it.

Tynana replaces that blind, cable-heavy control path with optical fiber, in-fridge ASIC (Application-specific integrated circuit)s, and built-in signal monitoring.

Quantum Control Market Size

Global quantum computing company revenues exceeded $1 billion in 2025 and could reach up to $4.4 billion by 2028. -- *McKinsey Quantum Technology Monitor 2026.*

$74.2M
Global Quantum Control Systems Market (2024)

$383.7M
Projected Market (2031)

26.8%
CAGR (2024–2031)

Quantum control is a specialized infrastructure market. While big companies often build control systems in-house, commercial platforms are becoming the preferred solution for research labs, startups, and system integrators.

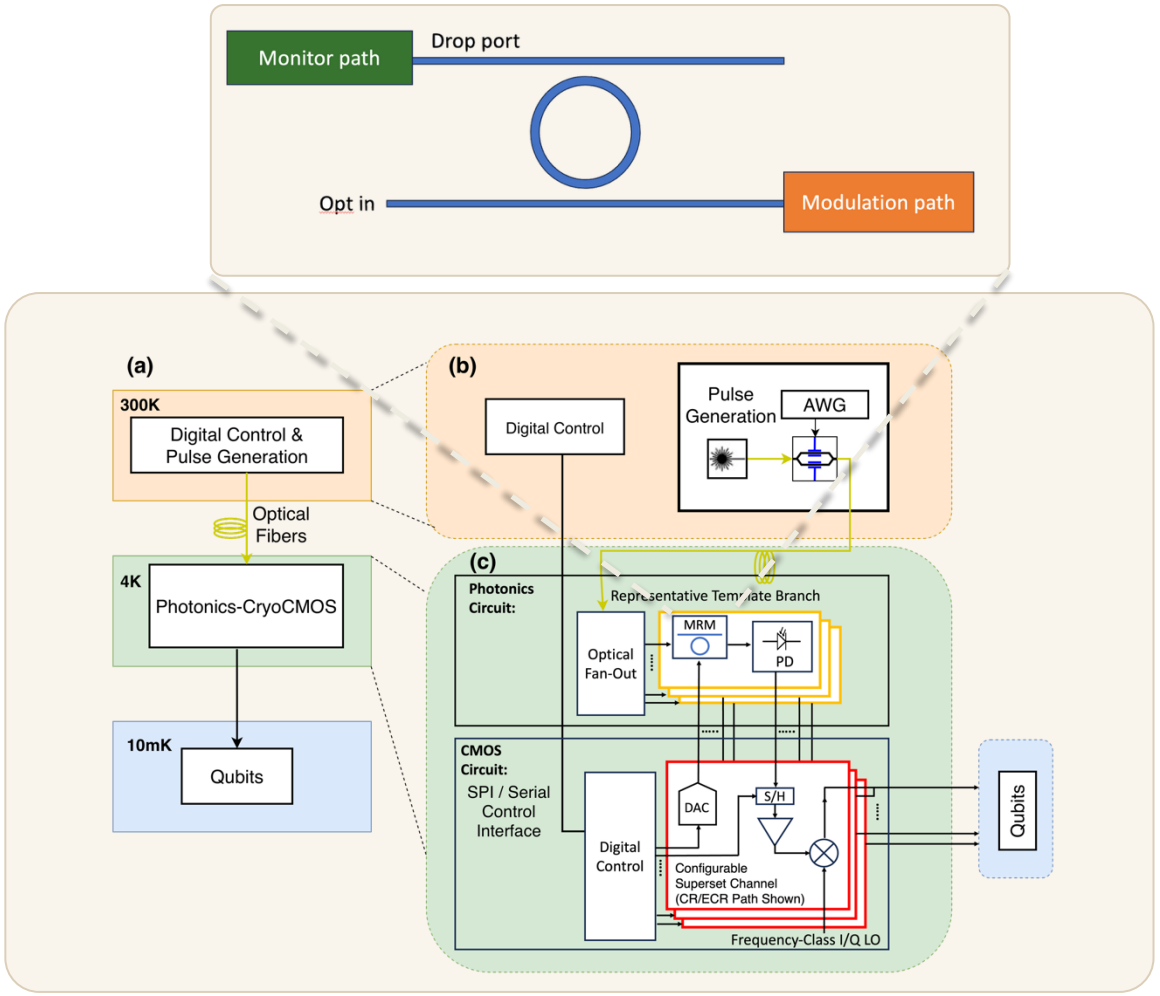
Source: QYResearch, Global Quantum Control System Market, 2025.

Hybrid photonic/CMOS Controller Architecture

30× LOWER ACTIVE POWER
<1 mW per Channel. modeled 4 K active electronics

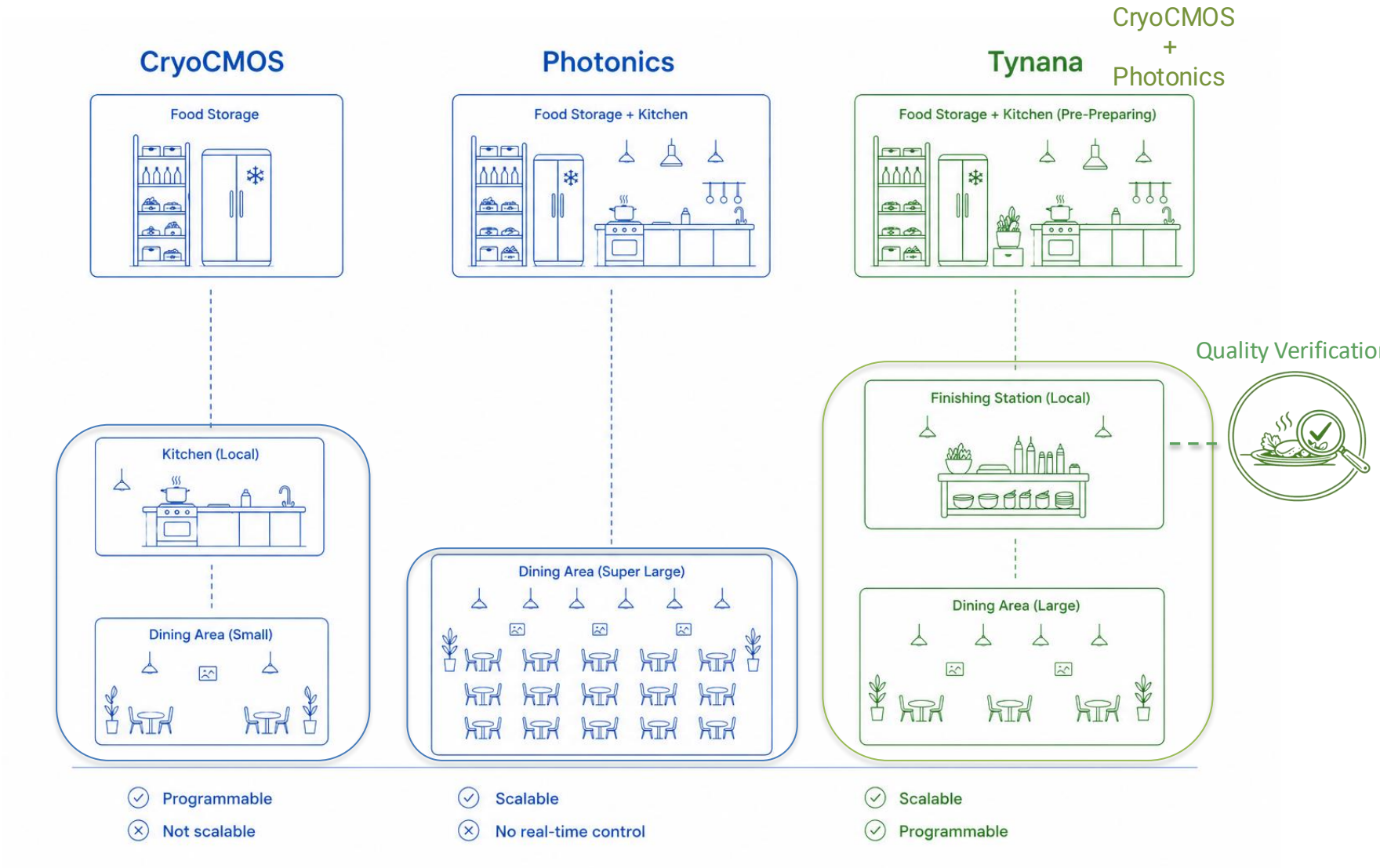
100× LESS CRYO MEMORY
Only parameters, not waveform memory

40x BETTER GATE-FIDELITY
Modeled error budget after adding the monitoring path



Patent Pending (USPTO Provisional Application No. 64/078,129 filed May 29, 2026)

New Qubit Controller Architecture Analogy



TYNANA: Infrastructure for Scalable Quantum Systems

Building scalable quantum-control infrastructure

Phase 1: Core Demo

2026 – 2027 Q2

- Tape out the first integrated prototype (Oct 2026)
- Validate the full control chain in a 4 K cryostat
- First cryogenic packaging via fiber-attach partners

$150K

Phase 2: Control Module Product

2027 Q3 – 2028 Q4

- Tape out our first dedicated controller chip
- Form an IC design team
- Develop control software
- Bring cryogenic packaging and testing in-house

$1.5M

Phase 3: Optical Readout & Scale-Up

2028 Q4 – 2030

- Extend to TFLN photonics for microwave-optical readout
- Scale to 100+ control channels

$3M

We are seeking $150K to complete Phase 1, along with advisors and strategic partners in quantum hardware, circuit design, and commercialization.

Recognition

NVIDIA Inception Program member (May 2026), with early exposure to NVIDIA's startup ecosystem and industry partners.
Selected for the National NSF I-Corps Quantum+X program to accelerate commercialization through customer discovery and market validation.

Tynana Team

Bowen Liu

Full-stack controller architect — photonics, RF/mixed-signal CMOS & superconducting-qubit control. Leads core IP and the hybrid photonic/CMOS architecture.
Ph.D. researcher (RPI),
M.S. Columbia;
cryo-CMOS develop experience at Cornell;
analog circuit design experience at Montage Technology.

Peter Zhang

Zero-to-one founder — co-founded PBRMAX (Sequoia-backed Series A+). Leads structuring, financing & commercial deals. CIPP/US;
$13M+ deal track record.
Attorney in NY state