Q-STAR

Quantum STrategic industry Alliance for Revolution

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Q-STAR | Quantum STrategic industry Alliance for Revolution was founded in Japan in 2021 to foster new industries and business opportunities with quantum technology. Its members include major corporations, startups, small and medium-sized enterprises, and academic institutions. Q-STAR actively partners with organizations worldwide and across industries to promote the growth and application of quantum technologies.

Quantum technology is advancing rapidly, and expectations for its impact on society are growing worldwide. To ensure Japan plays a leading role in this field, it is essential that industry, government, and academia work together to accelerate innovation and practical applications.

Q-STAR was established as a forum to bring these stakeholders together, to connect research with implementation, and to create new opportunities for industry and society. Our vision is to make quantum technology something that people can use naturally and unconsciously in daily life, just as we now use electricity or the internet.

Through activities such as proposing use cases, developing human resources, studying materials and devices, and promoting global collaboration, we will contribute to building a sustainable quantum ecosystem. At the same time, we will engage in dialogue with policymakers and the public to ensure that quantum technologies are implemented in ways that benefit society as a whole.

Together with our members, Q-STAR will continue to lead the advancement of quantum technology in Japan and contribute to solving global challenges.

Taro Shimada

Chair & Representative Director of Q-STAR | Quantum STrategic Industry Alliance for Revolution

Corporate Officer, President and Chief Executive Officer of Toshiba Corporation

ABOUT Q-STAR

Quantum STrategic industry Alliance for Revolution

Established: May 9, 2022

Form of Establishment: General Incorporated Association

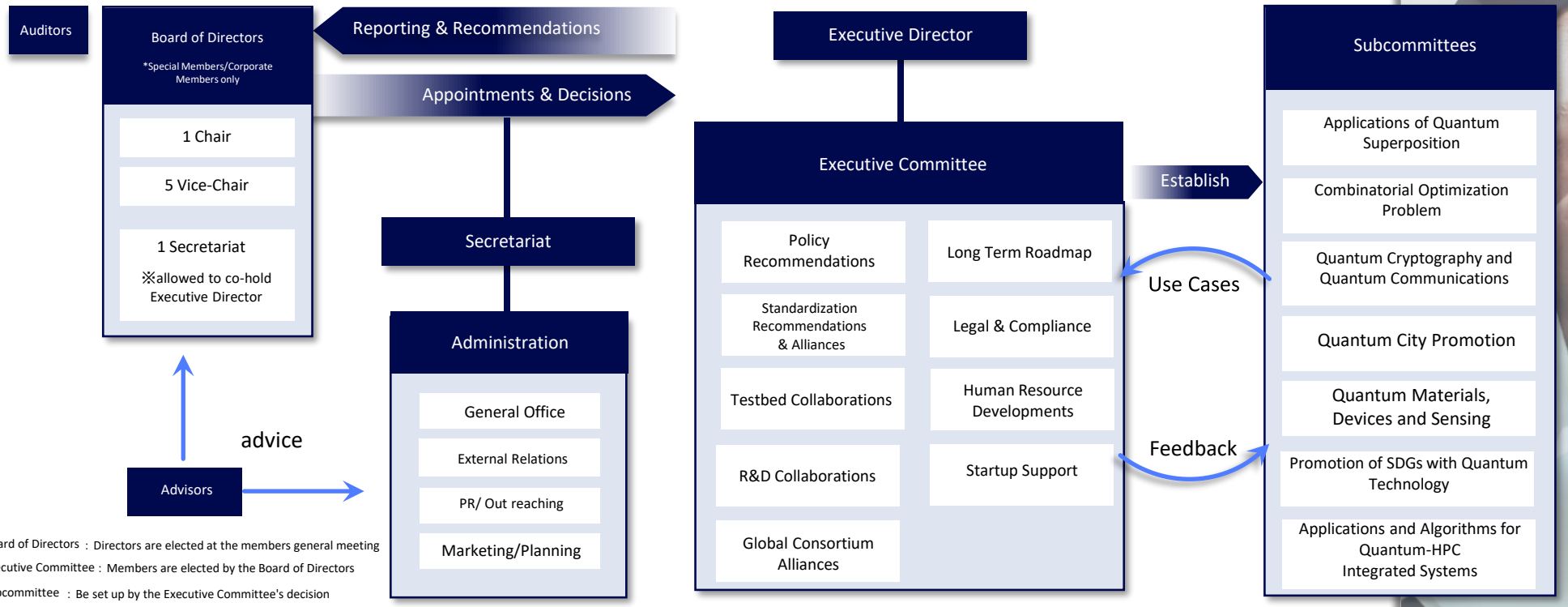
Purpose: Creation of quantum-related industries and businesses

Governance

Mission & Policies

Management

Trend analysis, Industrialization & Use case development



Board of Directors : Directors are elected at the members general meeting

Executive Committee : Members are elected by the Board of Directors

Subcommittee : Be set up by the Executive Committee's decision

GOVERNANCE | THE BOARD

Chair	**Taro Shimada** Representative Director Corporate Officer President and Chief Executive Officer Toshiba Corporation	Director	Nobuhiko Koga Chief Officer, Frontier Research Center, Chief Executive Officer, Toyota Central R&D Lab. Inc. Toyota Motor Corporation
Vice-Chair	Takashi Niino Chairperson of the Board NEC Corporation	Director	Satoshi Miki CEO, Founder Fixstars Corporation
Vice-Chair	Hiromichi Shinohara Executive Advisor NTT Inc.	Director	Hiroshi Nakata COO, JIJ Inc.
Vice-Chair	Toshiaki Higashihara Director, Executive Chairman, Representative Executive Officer Hitachi, Ltd	Director	Norishige Morimoto CTO, IBM Japan, Ltd.
Director	Masahiro Nomoto President Chodai Co. Ltd.	Director	Kan Takase Representative Director and CEO OptQC Corp.
Director	Hiroshi Suzuki Managing Executive Officer & CTO TOPPAN Holding Inc. .	Director	Kazuhiro Nakashoji Chief Executive Officer Yaqumo Inc.

GOVERNANCE | THE MISSION

The Mission

Our mission is to create new businesses through quantum technology in the mid-to-long term. Guided by a global vision, our initiatives embrace cross-industry and cross-sector collaboration to enable real-world adoption

The Initiatives

1. **Provide updates on the latest research in Quantum Technology.**
   Share the latest research findings in Quantum Technology with industry leaders.
2. **Identify and propose applications for Quantum Technologies.**
   Explore and suggest practical use cases across multiple industries.
3. **Examining quantum-related technologies**
   Discussing and sharing information about necessary materials and devices for Quantum Technology
4. **Develop human resources in Quantum Technology.**
   Discuss strategies to build and train skilled professionals in the field.
5. **Validate systems and rules.**
   Clarify necessary standards, IP rules, and frameworks for social implementation of Quantum Technology.
6. **Collaborate with organizations in Japan and overseas.**
   Work with national and international groups to promote Q-STAR's mission.
7. **Raise public awareness and recommend policies.**
   Increase understanding of Quantum Technology and provide policy suggestions.

MANAGEMENT | GROUPS & ROLES

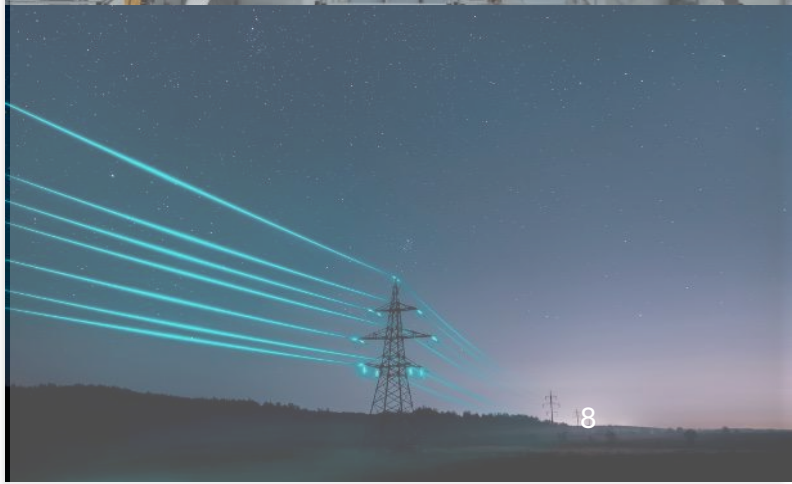
Working Groups: Quantum Industry trend analysis

Working Groups	Roles
Policy Recommendations	Submit industrial perspectives and proposals to national policy committees promoting the industrialization of quantum technologies.
Standardization Recommendations & Alliances	Advance contributions to international standardization through collaboration among industry, government, and academia.
Testbed Collaborations	Coordinate testbeds to validate use cases developed by subcommittees.
R&D Collaborations	Share R&D trends through collaboration with academia and promoting technological development.
Global Consortium Alliances	Build and maintain international partnerships, aligning Q-STAR activities with global quantum initiatives.
Long Term Roadmap	Define strategic direction and future initiatives for Q-STAR, including research priorities and industrial adoption milestones.
Legal & Compliance	Organize and share information on legal, regulatory, and compliance issues related to the development and implementation of quantum technologies.
Human Resource Development	Promote talent development and training programs to build a skilled workforce for the quantum industry.
Startup Support	Assist quantum startups with mentorship, resources, and partnership opportunities to accelerate commercialization.

MANAGEMENT | DEVELOPING APPLICATIONS

Subcommittees: Define use cases and promote practical applications through collaboration between vendors and user companies.

Subcommittees	Key Role	Potential Outcomes
Applications of Quantum Superposition	Explore the creation of new systems, services, and businesses through the application of quantum superposition.	Identify areas where innovations such as dramatic improvements in operational efficiency can be achieved through quantum computing.
Combinatorial Optimization Problem	Develop use cases for optimization and combinatorial problems utilizing quantum-inspired technologies (Ising machines) in industrial fields.	Address challenges in fields such as manufacturing, logistics, finance, materials, and drug discovery.
Quantum Cryptography and Quantum Communications	Identify social challenges through the business application and demonstration of quantum cryptographic communication.	Establish robust and secure communication through the industrialization and social implementation of quantum cryptographic communication.
Quantum City Promotion	Explore and deepen use cases in the fields of urban development and social infrastructure and develop experimental and demonstration fields.	Regional revitalization through the social implementation of quantum technologies.
Quantum Materials, Devices, and Sensing	Develop use cases that include the advancement of components and materials supporting quantum technologies.	Social implementation in the fields of quantum materials, devices, sensing, and life sciences.
Promotion of SDGs with Quantum Technology	Align quantum technology development with sustainability goals	Projects targeting energy efficiency, climate modelling, or resource optimization
Applications and Algorithms for Quantum-HPC Integrated Systems	Explore next-generation computing technologies by validating algorithms and applications that combine quantum computing and high-performance computing (HPC).	Expand quantum advantage and build new computational platforms through quantum–HPC integration to solve real-world challenges.



Q-STAR | GROWING TOGETHER

2021
Establishment

Establishment of Q-STAR (September 2021)

24 Members
6 Working Groups
4 Subcommittees

2022
Use Case Development

Became a General Incorporated Association (May 2022)

65 Members
8 Working Groups
5 Subcommittees

2023
Validation Phase

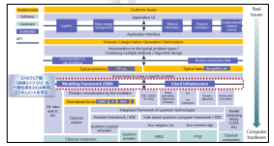
MOU signed to create the International Council of Quantum Industry Associations (ICQIA)

ICQIA

89 Members
8 Working Groups
6 Subcommittees

2024
Laying the Foundation

Defining the Software Infrastructure

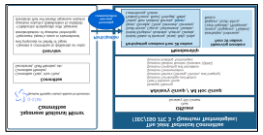


G-QuAT Collaboration

106 Members
8 Working Groups
6 Subcommittees

2025
Towards International Standardization

Starting initiatives as Japan's National Mirror Committee for IEC/ISO JTC3 (Quantum Technologies)



MoUs signed with UK Quantum & NQCP

UKQuantum NQCP NIELS BOHR INSTITUTE

145 Members
9 Working Groups
7 Subcommittees

2026
Advancing Quantum-AI-Digital Integration

Launching Quantum Literacy Standard v1.0 and Quantum Professional Standard v1.0

+Q

Signed MOU with JETRO and G-QuAT to promote International Collaboration

JETRO Japan External Trade Organization AIST G-QuAT

MoU signed with IQMP & VTT

IQMP Illinois Quantum & Microelectronics Park VTT

170 Members
9 Working Groups
7 Subcommittees

Other Accomplishments & Contributions towards National Quantum Strategy

Vision of Quantum Future Society (2022)

Strategy of Quantum Future Industry Development (2023)

Promotion Measures for Development of Quantum Industries (2024)

Promotion Measures for the Development of a Quantum Ecosystem (2025)

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Quantum STrategic industry Alliance for Revolution

Contact Us

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