

How Quantum Computers Can solve Social Issues?

Yaqumo CEO

Kazuhiro Nakashoji

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Kazuhiro Nakashoji

- Born in Thailand -> Raised in Malaysia
- Graduate School of Engineering, Department of Nuclear Engineering
- Joined Dream Incubator (DI)
Worked in India, Vietnam and Tokyo. Involved in strategy planning, business development, and public-private policy projects
- Founded Yaqumo 2025/04



Yaquimo

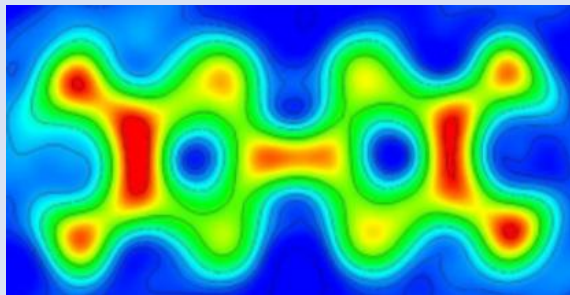
Simple Question



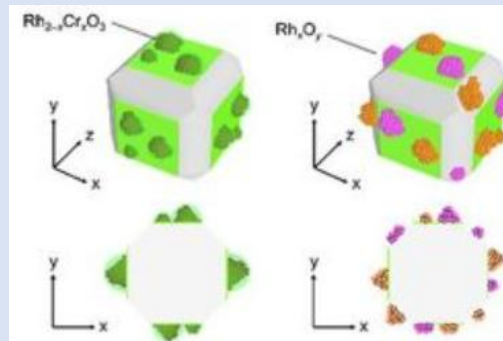
Limitation of simulations

Highly efficient Solar Panel (Photocatalyst)

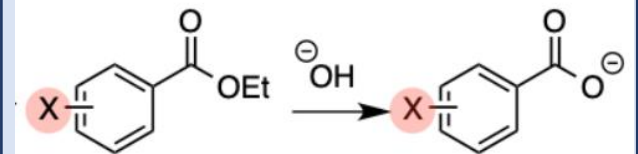
Electronic State Analysis



Material Screening



Reaction Mechanism Analysis



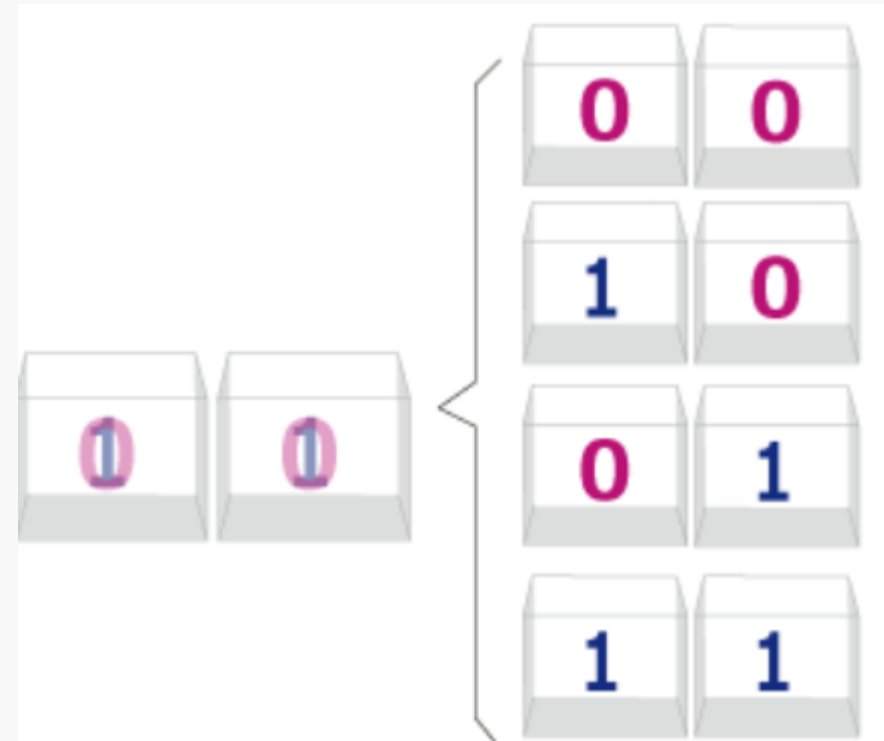
Large scale Simulations!!!

Principle of Quantum Computer




















Classical Computer



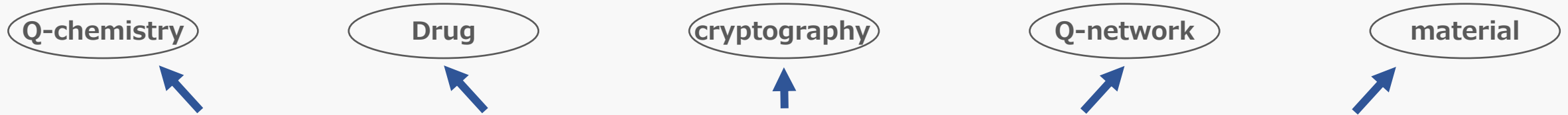
Quantum Computer



Types of Quantum Computer

		Superconducting qubits	Trapped ion	Neutral atoms	Photons
Main players		 	 		 
	Scale	 Refrigerator and cabling problem	 Difficult to scale up the system due to repulsive interactions	 Easily scale up by increasing the laser power	 In principle, good scalability
	Fidelity	 Achieve QEC threshold (Variation in manufacturing quality)	 Achieve the best fidelities	 Drastically improving Comparable performance to SC qubits	 Not reaching a practical level
Clock	 High-speed operations (Short coherence time)	 Slow gate operations and ion shuttling	 Fast gate operation, Slow readout and shuttling	 In principle, fastest operations	

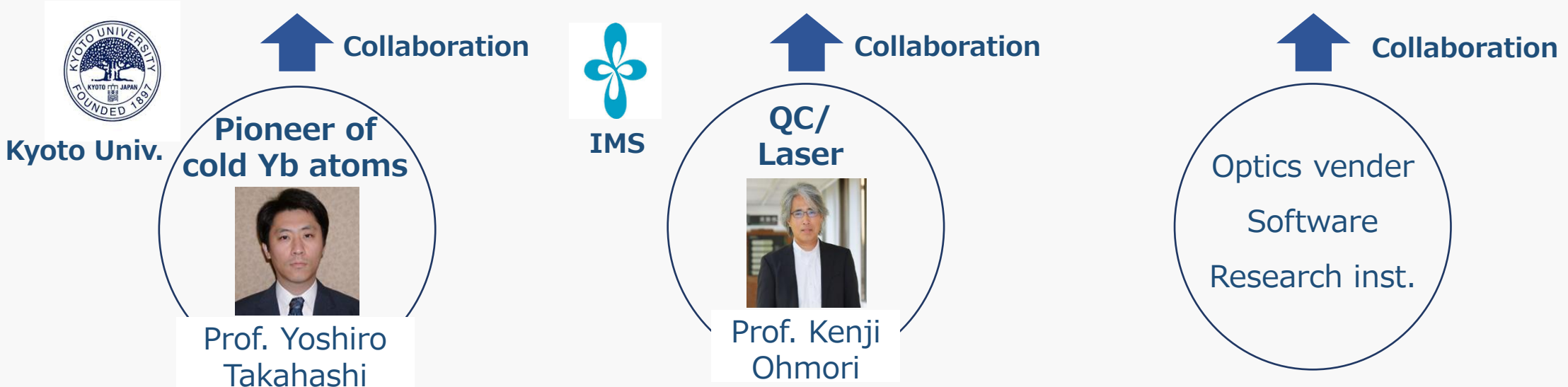
Our Vision



Yaqumo : R&D of neutral atom-based QC

- Mission : Develop truly useful QC and expand human computation capabilities
- Goal : commercialize a world-class, practical FTQC by 2030

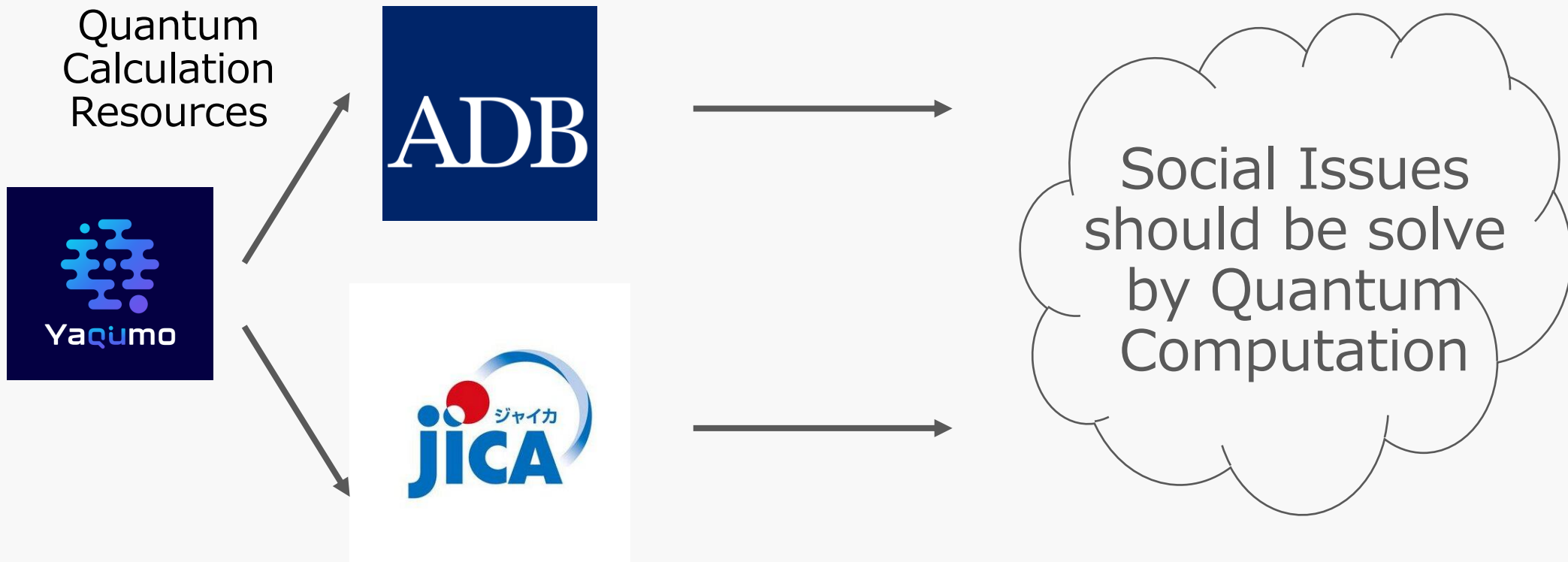
Logical Qubit : 100~	Logical error : 10^{-5}	Clock Time : μ Sec order
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How Yaquimo Can Contribute to ODA??

Doners

Developing Countries



How Yaquimo Can Contribute to ODA??

TECHNICAL ASSISTANCE COMPLETION REPORT

Division: Human and Social Development Division (SEHS)

TA No., Country and Name		Amount Approved: \$1.0 million	
TA 7268-REG: Regional Public Goods for Health: <u>Combating Dengue in ASEAN</u>		Revised Amount: N/A	
Executing Agency: ADB/SERD	Source of Funding: ADB's Regional Cooperation and Integration Fund under the Regional Cooperation and Integration Financing Partnership Facility	Amount Undisbursed: \$54,750	Amount Utilized: \$945,250
TA Approval Date: 7 April 2009	TA Signing Date: 7 April 2009	Fielding of First Consultant: September 2009	TA Completion Date Original: 30 April 2011 Actual: 31 July 2012
			Account Closing Date Original: 30 April 2011 Actual: 26 October 2012

Description

Aided by the global financial crisis with reduced funding for public health, dengue is fast becoming a global public health problem. According to the Dengue Strategic Plan for the Asia Pacific Region (2008–2015) of the Western Pacific Regional Office (WPRO) and the South-East Asia Regional Office (SEARO) of the World Health Organization (WHO), about 1.8 billion people in the Asia Pacific region are at risk of dengue. In Southeast Asia, it causes about two to three hundred thousand dengue cases and a thousand deaths per year, about half of these in the Philippines. Children and young adults are mostly affected, both rich and poor. Dengue is caused by a virus transmitted through mosquitoes, and unlike for other communicable diseases, dengue control methods including vector control, public education, infrastructure, and case management are not well established, while vaccine development has been slow. About 80% of the larvae of mosquitoes carrying the dengue virus mature in domestic water storage containers. As part of integrated vector management, larvivorous fish such as guppy can be used in water jars and tanks as a biological control agent along with environmental management and residual spraying during outbreaks. Asian Development Bank (ADB), in partnership with WPRO and recipient governments, supported a regional technical assistance (TA) to pilot larval source reduction and control in Cambodia, Philippines and Lao PDR. ADB's Strategy 2020 supports communicable diseases control (CDC) as a regional public good.

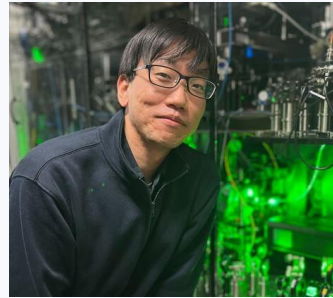
MEMBERS

■ Board Member



CEO : Kazuhiro Nakashoji

- University of Tokyo
- Dream Incubator: Strategic Consulting
- Kyoto iCAP EIR



CTO : Yuma Nakamura (Ph.D.)

- Graduate School of faculty of Science
Kyoto University
- Head of Technology in Yaquamo



CSO : Takafumi Tomita (Ph.D.)

- Graduate School of faculty of Science
Kyoto University
- Leading the development of QC in Japan

■ Advisor



- Global lead of Yb research
- Joins Moon shot Project

Prof. Takahashi

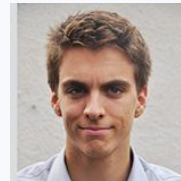
■ Advisor



- Global lead of QC research / development
- PM of MS

Prof. Ohmori

■ Advisor



- Top scientist in optical tweezer
- Lead MS project

Sylvain Research Associate Prof.

■ Advisor



- Head of innovation in DBJ
- Led the investment to QoLab

Mr. Takemori



Yaquimo