

SHAPING THE QUANTUM FUTURE FROM EUROPE



We build quantum computers

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High-Performance Computing

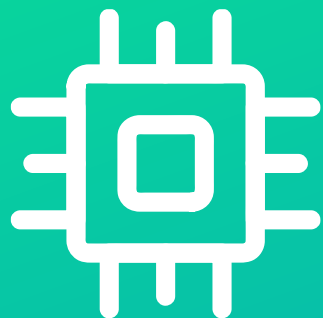
10 MW: 10,000 years*

*according to Google
2.5 days according to IBM

Quantum Computing

10 kW: 200 seconds

Google CEO
Sundar Pichai

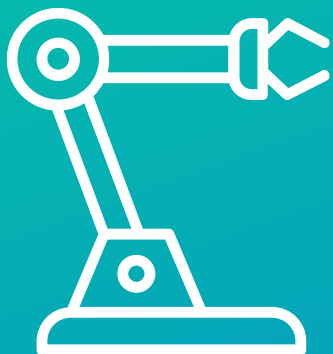


High-tech



Finance

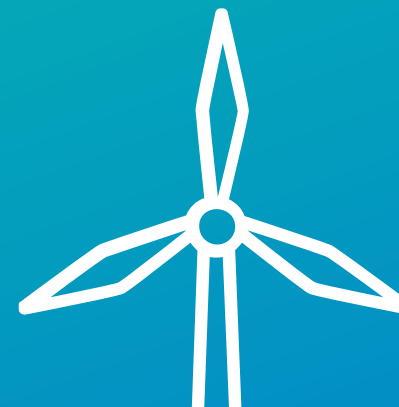
Application fields



Industrial Goods



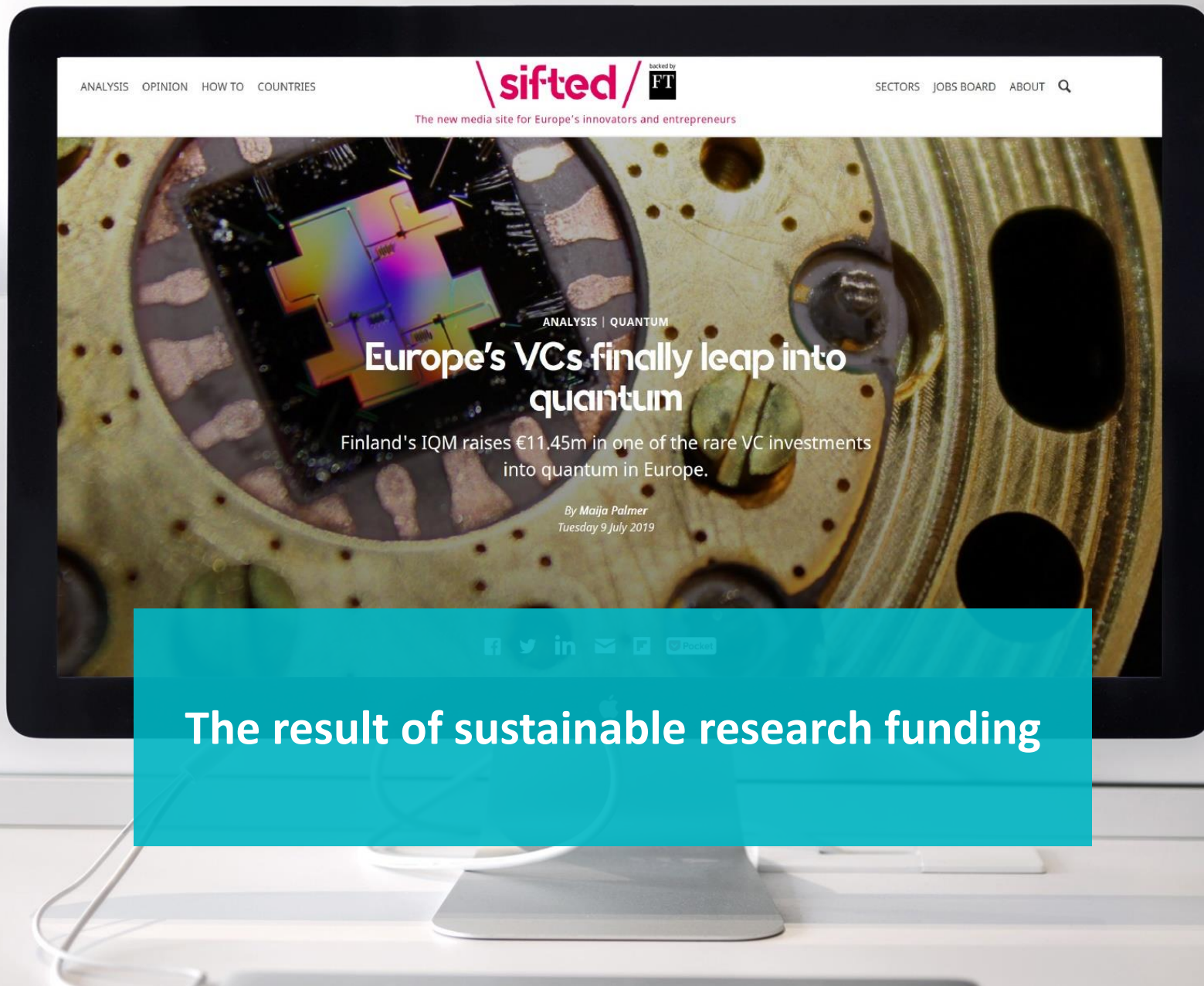
Chemistry & Pharma



Energy

Global activities





The result of sustainable research funding

Why does it happen in Finland?

Sustainable public funding:
120 quantum experts in Helsinki

World leading infrastructure:
Clean room and low temp labs

Otaniemi research campus:
Resource for great talents

Infrastructure support:
State research center VTT
Supercomputing center CSC

Quantum Ecosystem
Blue Fors
Quantastica
Aivon
Eigenco (now in IQM)

Jake Taylor: *“Helsinki is a hotspot for quantum technology”*
Assistant Director for Quantum Information Science at White House

Hardware Companies



Bluefors is the global market leader in cryostats for quantum computers.

IQM is the leading quantum processor hardware company in Europe.

Components and Materials Companies



Finnish Quantum Ecosystem

Software Companies



Quantastica is a Serbian company with Finnish investors that is moving to Finland.

More software companies are expected to follow as a result of investments into quantum hardware.

Government



VTT has a roadmap for quantum computing research and manufacturing facilities.



Business Finland has a role in promoting the ecosystem growth.



CSC has its own quantum team and is investing in the field.

Universities and Academia



UNIVERSITY OF TURKU



HELSINGIN YLIOPISTO
HELSINGFORS UNIVERSITET
UNIVERSITY OF HELSINKI



ACADEMY OF FINLAND



JYVÄSKYLÄN YLIOPISTO
UNIVERSITY OF JYVÄSKYLÄ

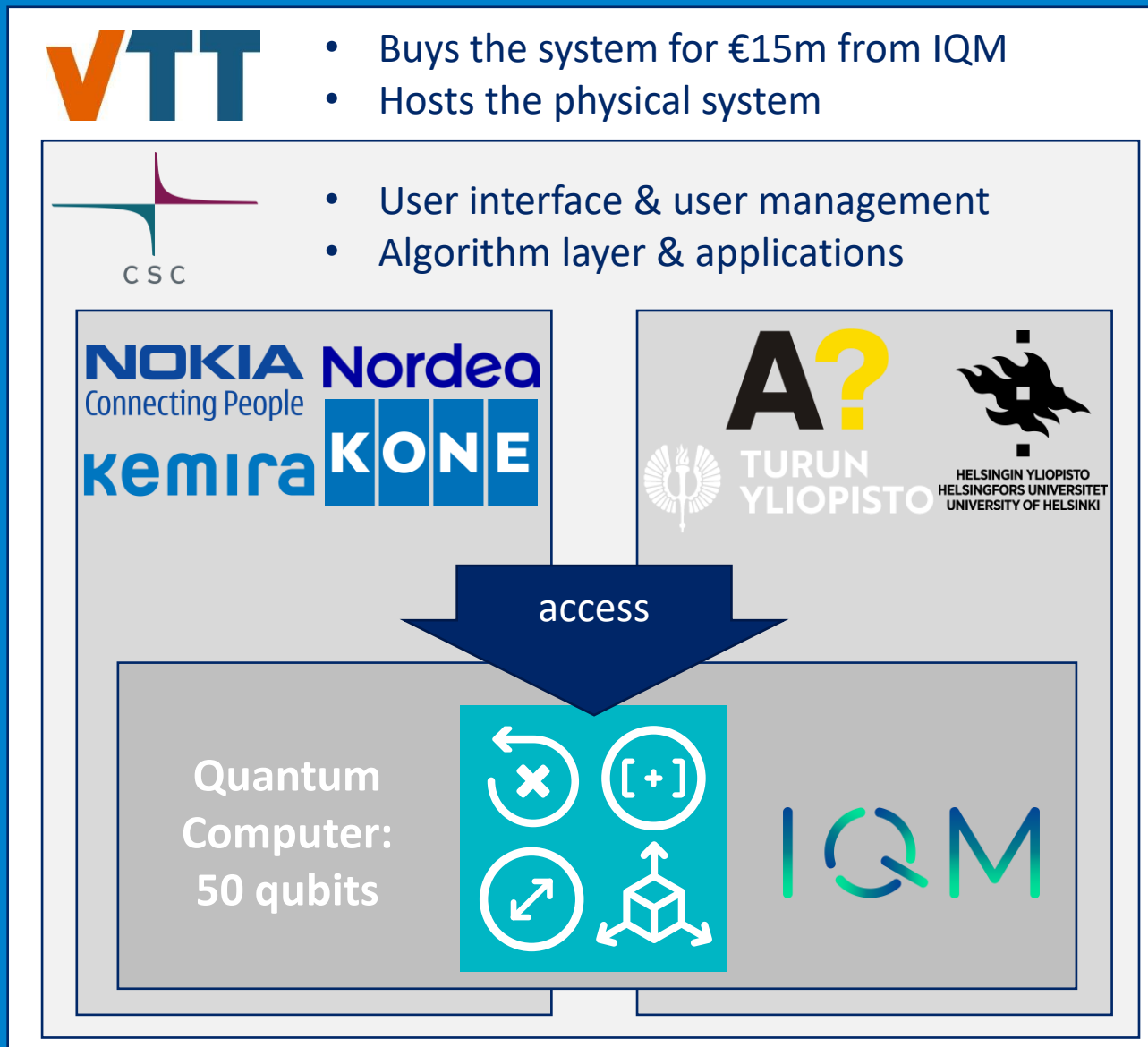
Finnish Quantum Computer

VTT, CSC, and IQM join forces to build a fast lane to quantum computing

Goal: Deploy a quantum computer in Finland in three stages

Utilizing several Finnish subcontractors:
"Cooled by BlueFors"

A quantum computer makes Finland the European leader for quantum computing and positions Finland among the United States and China as a global leader



A group of approximately 20 people are gathered indoors for a holiday celebration. Most are wearing red and white Santa hats. They are posed in several rows, some sitting on a large green modular sofa in the foreground, others standing behind them. The background features large windows looking out onto a dark, snowy night. The overall atmosphere is festive and social.

ION

Entangling People and Technology

IQM summary

IQM is a unique chance for Finland to create a competitive landscape for quantum computing

Only European startup with **scalable approach**

IQM has a patent portfolio for new concepts for qubit reset and qubit readout as well as thermal management. These are the bottlenecks for current quantum processors

Unique quantum team with a size comparable to Google's Quantum Hardware Team

IQM is deeply integrated into the global research ecosystem having access to the most-limited resource in the field: Quantum Experts

Over 10 years academic R&D in quantum circuits

IQM is a spin-off from Finland's leading Aalto University and the state research center VTT still utilizing a strong partnership with them

Extremely **cost-efficient fabrication** in a professional clean room

IQM's quantum processors are fabricated together with VTT. We develop next-generation solutions such as 3D integration and quantum-limited amplifiers

Streamlined and scalable microwave electronics

IQM has experienced in-house microwave engineers to develop very low-power and cost-efficient control electronics

IQM: A complete quantum team

Prof Mikko Möttönen – Chief Scientist

Leader of Aalto University's QCD group.
More than 100 scientific articles.
Highly connected globally.

Dr Jan Goetz – CEO

Deep expertise in quantum hardware
gained during Marie-Curie Fellowship
at Aalto University.



Dr Kuan Yen Tan – CTO

Experience as Academy Research Fellow and
Consultant for Microsoft.
Deep expertise in fabrication technology.

Dr Juha Vartiainen – COO

Expert in product development.
PhD in Quantum Computing.
>10 years of industry experience.



35 full-time employees
05 external advisors

14 nationalities
25 PhDs



Dr Juha Hassel

Team Leader System Integration

Former group leader in QTF and senior scientist at VTT Technical
Research Center of Finland. Expert in cryogenic electronics &
Docent at Aalto University.



Dr Kok Wai Chan

Team Leader Fabrication

Former Senior Scientist at Microsoft. More than
10 years of expertise in semiconductor fabrication
for qubits.



Dr Pasi Lähteenmäki

Team Leader Scalable Electronics

Former CEO of Eigenco Oy.
Expert in microwave electronics.



Olli Ahonen

Team Leader Software

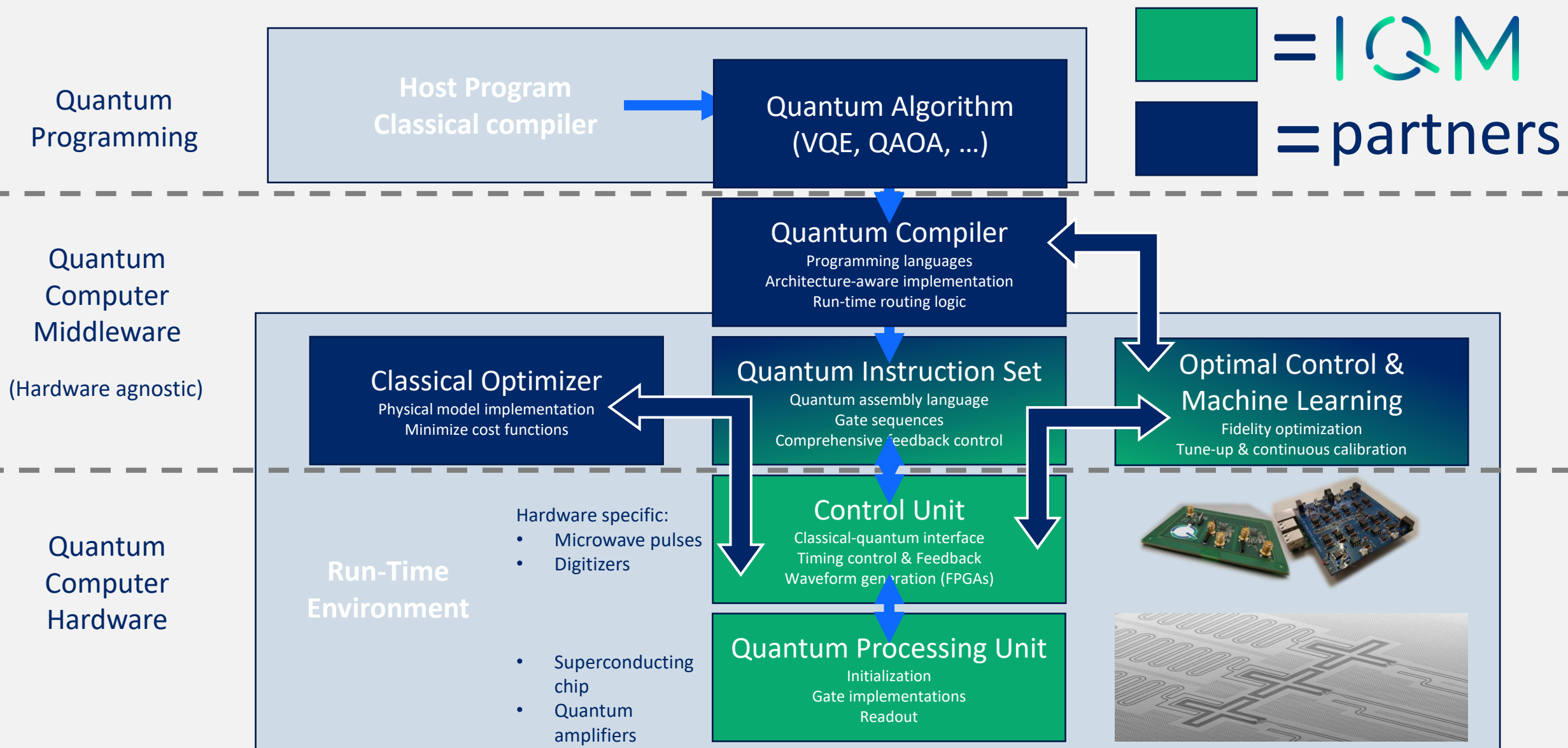
Ex-CTO at Kivra Oy. SW experience in Zalando and Futurice.
Physicist by training.



Dr Johannes Heinsoo

PhD from globally-leading group in
ETH Zurich. World record in readout
speed.

Quantum Computing stacks





IQM: The future is in the Quantum

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