The Swiss Quantum Ecosystem and Strategy

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Swiss Quantum Initiative

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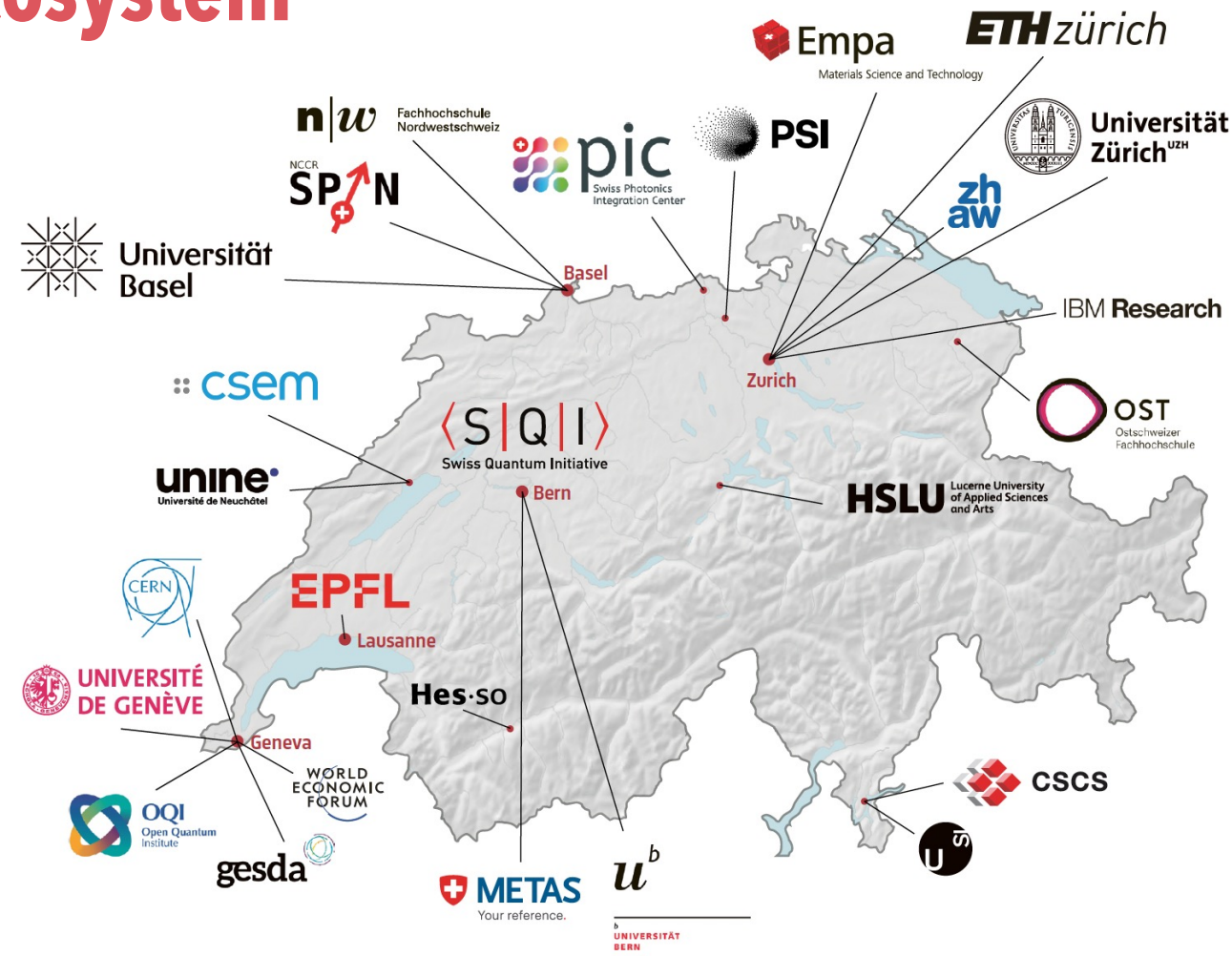
scnat swiss academy of sciences

Swiss quantum ecosystem

- Universities and Universities of Applies Sciences
- 4 Quantum Centers (Basel, Geneva, Lausanne, Zurich)
- Research and excellent education under one roof
- National research centers and RTOs
- More than 30 companies active in the field
- SMEs are a backbone
- Home to multinational corporates

… and overall, rather small (geographically)



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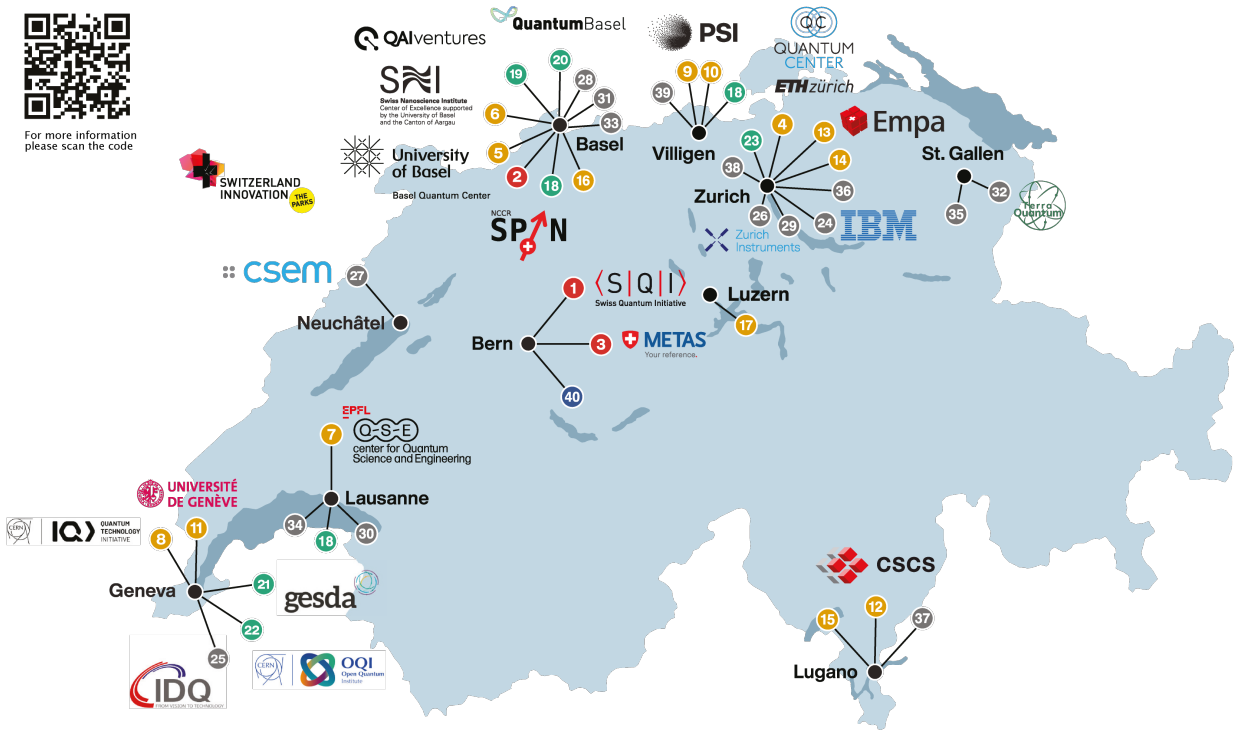
Quantum innovation in Switzerland grows from universities and startups outward



Switzerland
A Hub for Quantum

Project Quantum

swissnex

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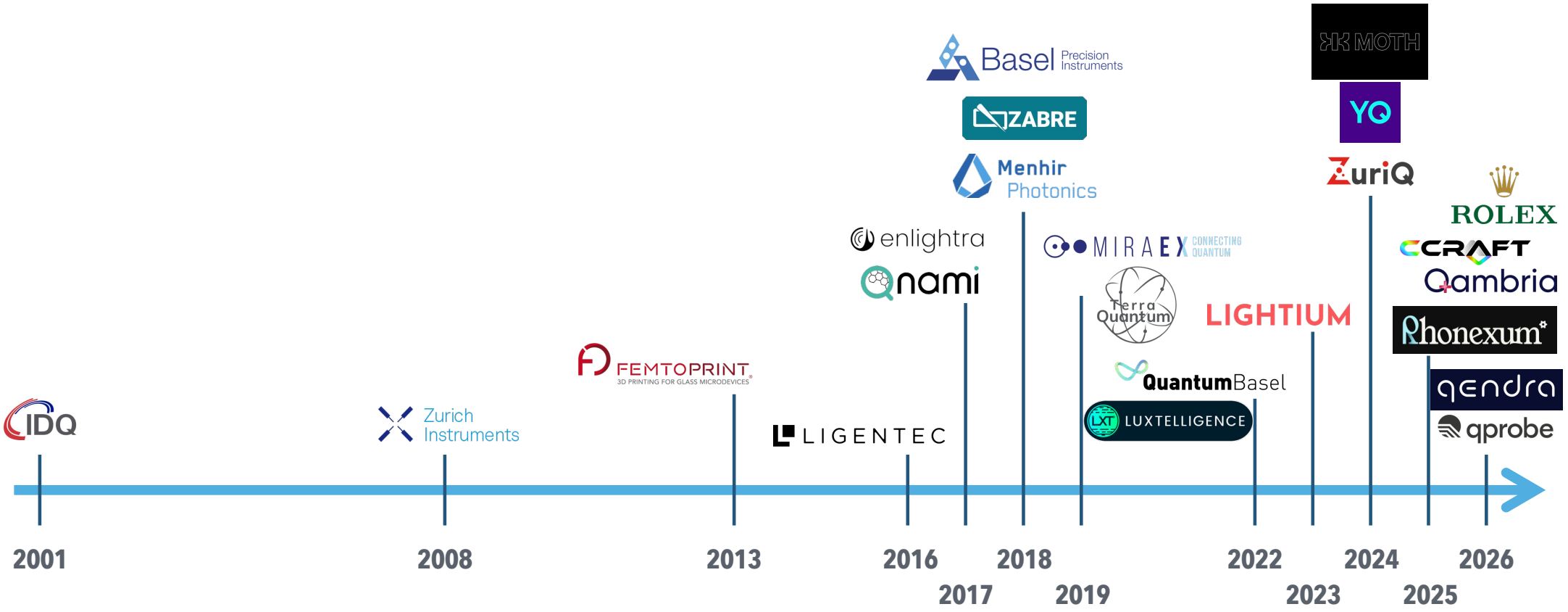
Timeline of Swiss-based quantum startups



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The Swiss Quantum Initiative (SQI) is

- mandated by the Swiss Confederation via SERI,
- hosted by the Swiss Academy of Sciences SCNAT and
- coordinated and led by the Swiss Quantum Commission (SQC) on a voluntary basis

Cooperation with the Swiss National Science Foundation SNSF and Innosuisse

scnat
swiss academy of sciences

Swiss National
Science Foundation

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Innosuisse – Swiss Innovation Agency

The strategic intent goes far beyond fundamental science and aims to cover the full value chain

SQI goal: *"Strengthen Switzerland's leading position* ***across the entire value chain****"*

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Stakeholder map

(simplified)

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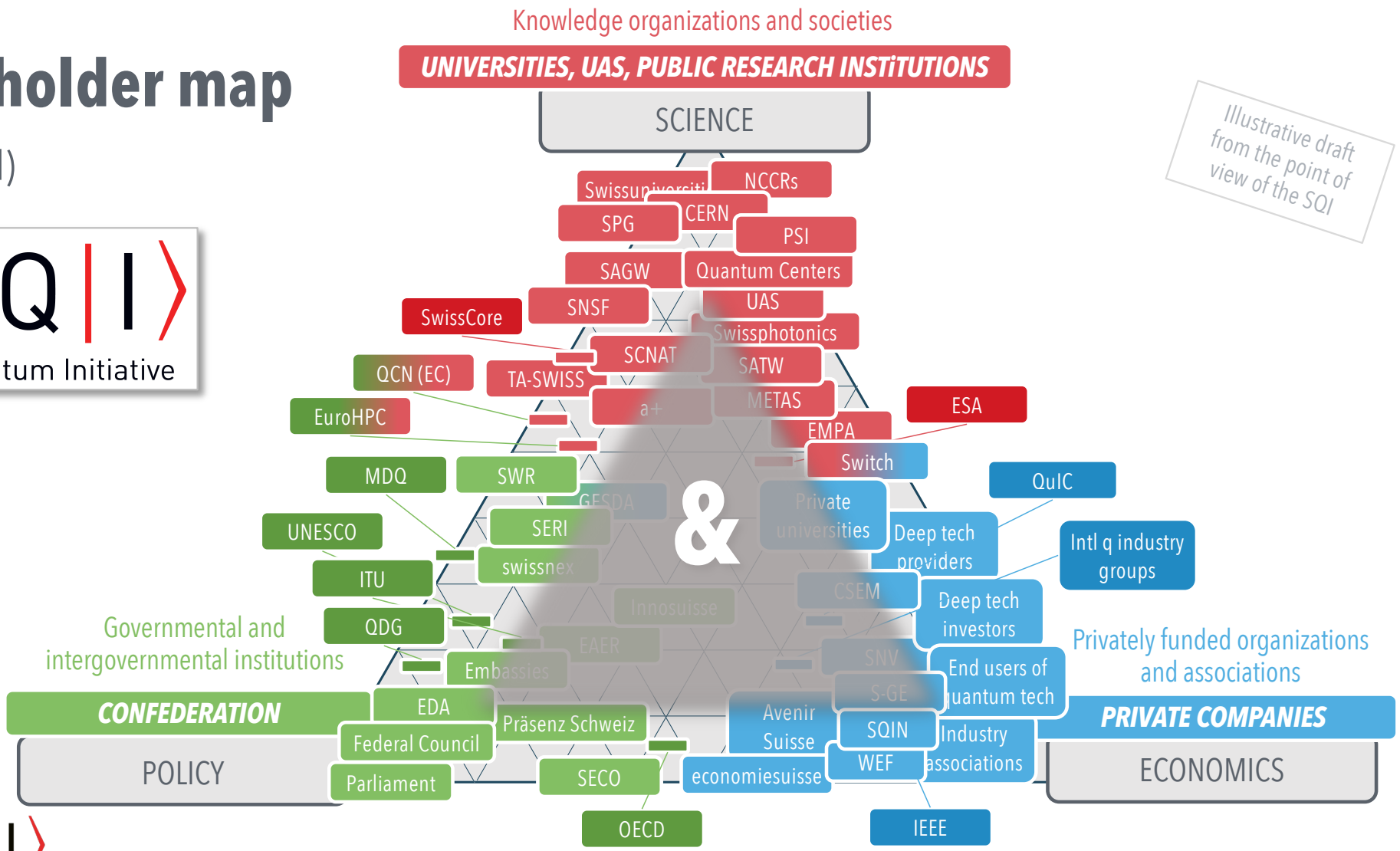
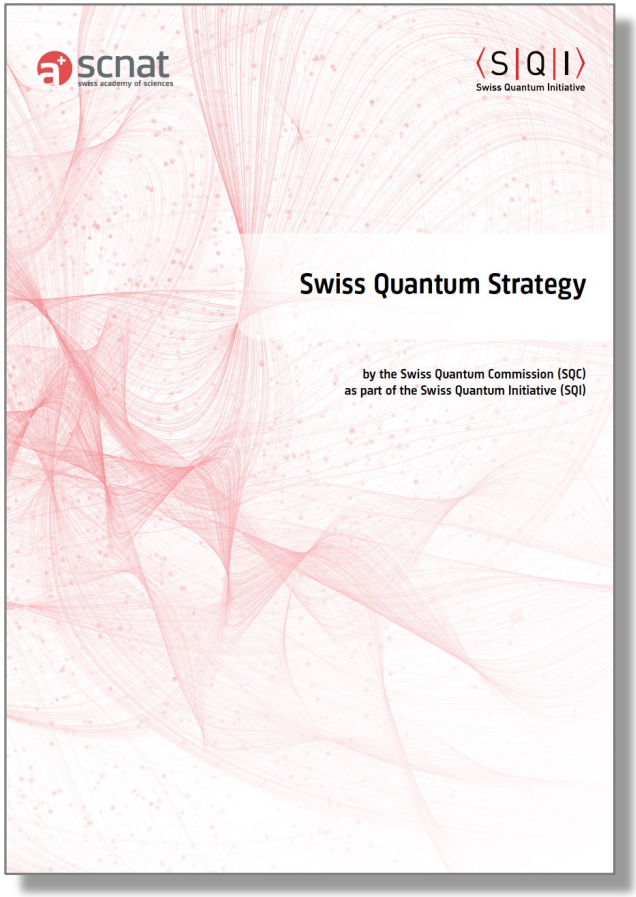


Illustrative draft from the point of view of the SQI

«With strategic measures and investments, Switzerland is well positioned to play a leading international role in scaling up and commercializing quantum technologies.»



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Swiss Quantum Strategy: principle-based

1. Free scientific research

2. Entrepreneurship

3. Open and liberal market environment

4. Responsible innovation

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Strategic goals
Pillars of the Swiss Quantum Strategy

4.1 Position Switzerland as an **international hub** for quantum science and innovation

4.2 Foster world-leading **interdisciplinary fundamental and applied research**

4.3 Strengthen and extend **translational infrastructures, platforms and engineering services**

4.4 Accelerate **scaling and commercialization** between academia, startups, SMEs and enterprises

4.5 Further strengthen **education and training** for curious and competent scholars and experts

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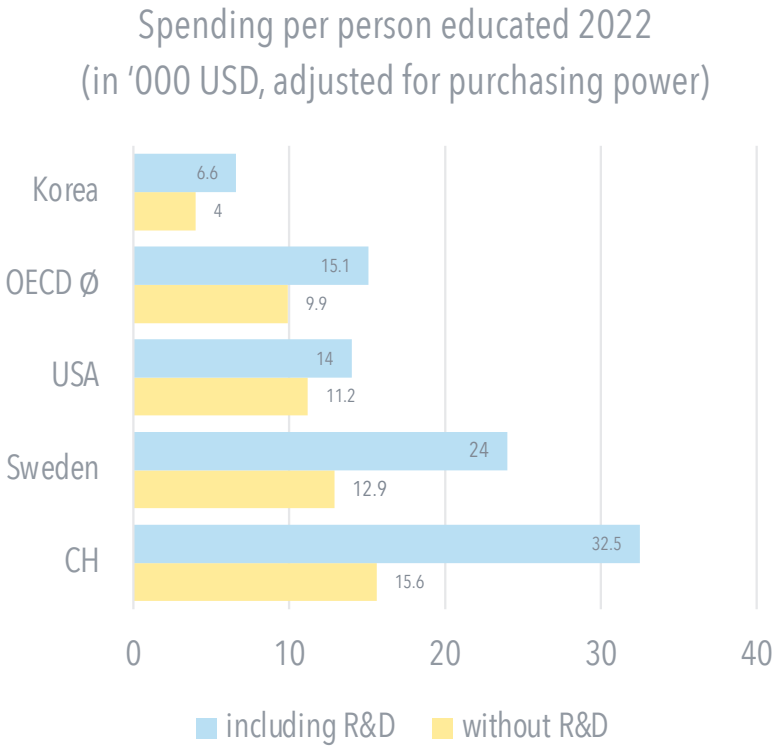
Education and training

The underlying stronghold (much broader than physics PhDs).

- Quantum technologies rely on highly advanced technologies
- Globally: shortage of skilled quantum talent
- Swiss stronghold: dual vocational education
- Research and applied sciences universities
- Designated Masters in quantum engineering degrees



Source: OECD (2025), Education at a Glance 2025: OECD Indicators, OECD Publishing, Paris.

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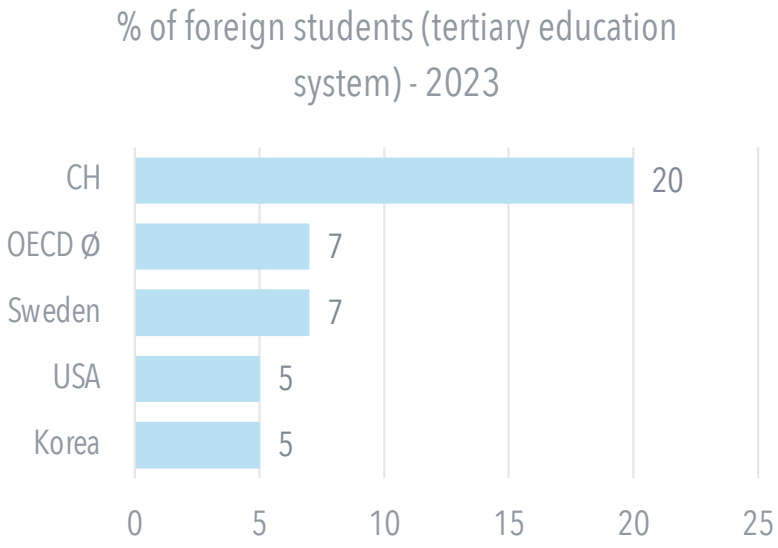
Switzerland: an international hub for quantum

More than ever.

- Switzerland relies on international openness and collaboration
- Open to multi-level collaborations among like-minded countries
- Create long-term sustainable environment of excellence
- Promotion of global talent mobility



Source: OECD (2025), Bildung auf einen Blick – OECD Indikatoren

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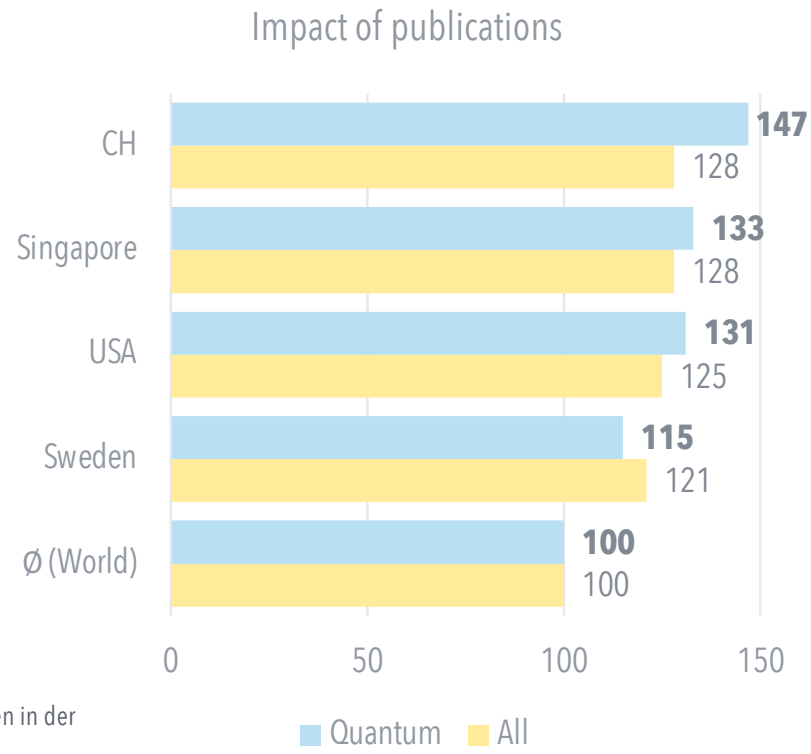
Interdisciplinary fundamental and applied research

Continue. Curiosity-driven excellence.

- Exploration of diverse approaches could lead to game changing breakthroughs
- Quantum science for science
- Strength built on long-term strategic investments
- Known for its excellence in basic and applied research



Source: Staatssekretariat für Bildung, Forschung und Innovation: Wissenschaftliche Publikationen in der Schweiz, 2008-2022 - Eine bibliometrische Untersuchung zur Forschung in der Schweiz, 2024

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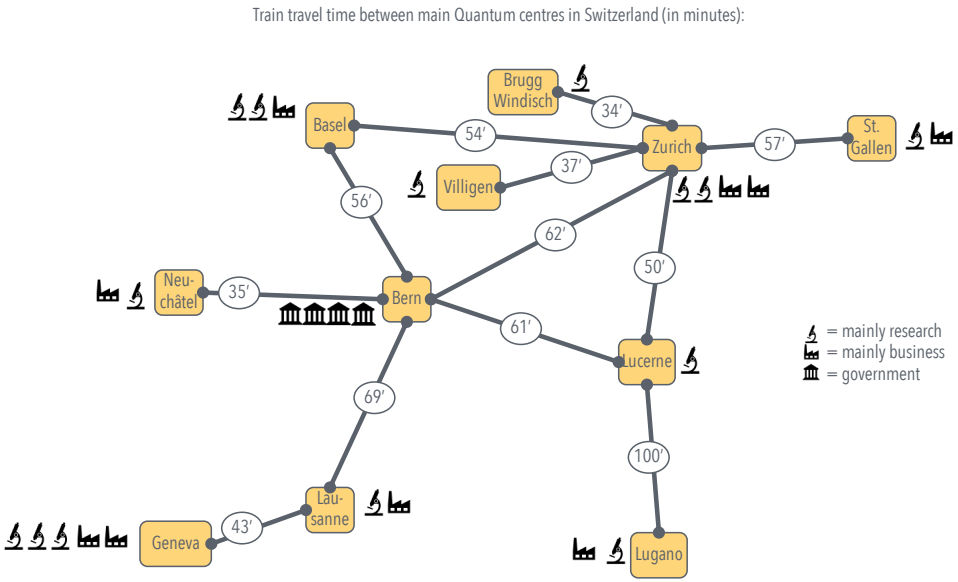
Translational infrastructures, platforms and engineering services

Focus. Develop. Invest.

- Infrastructures have critical influence on innovation
- Need quantum engineering teams to serve innovation process
- Existing organizations like CSEM and PSI bridge the gap for higher product maturity levels (TRL 5 to 8)
- Quantum players currently lack sufficiently structured and application-oriented access to relevant infrastructures



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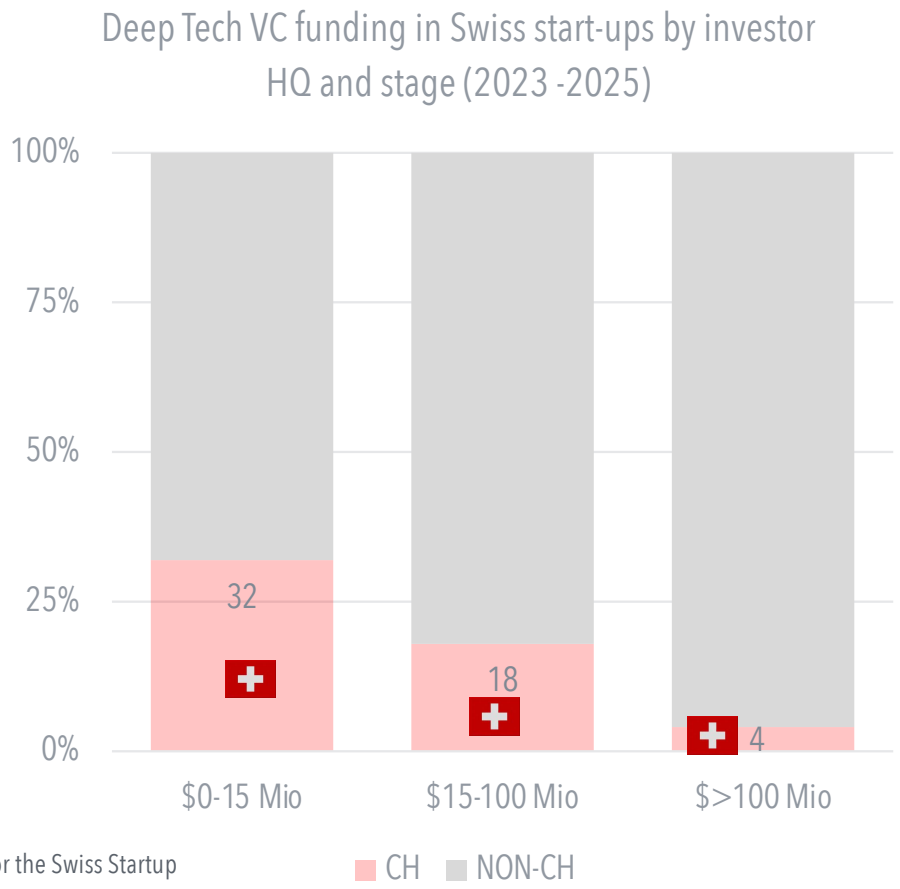
Commercialization and scaling

Bolder and faster. Invest.

- Long development cycles, high capital intensity and complex regulatory requirements
- Technology transfer, IP management, mid- to later stage innovation support for scaling efforts and industry partnerships
- Establishment of state-supported Deep Tech funds



Source: Swiss Start-up Association; "Swiss Deep Tech Report 2025: Five Structural Signals for the Swiss Startup Community"; June 2025

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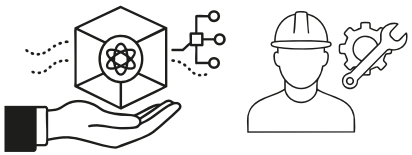
Top translational priorities going forward

Translational infrastructures, platforms and shared services

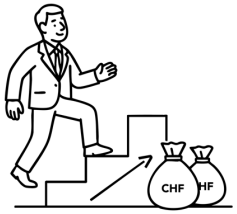


Longer-term shared investments.

Public-private matching funds.

Strategic fit with host institutions.

Financing scaling up and culture of early adopters

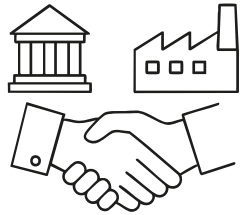


Additional start-ups and scaling.

Growth-oriented instruments.

Public institutions as early adopters.

State-supported Deep Tech fund



Mid - to long-term benefits.

Boost deep tech investments.

Cross-thematic approach, including but not limited to quantum technologies.

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What makes the Swiss Quantum Ecosystem special?

- **Bottom-up innovation model:** Quantum technologies emerge from excellent research, startups, and industry needs – not central planning
- **Research as economic infrastructure:** ETH Zurich & EPFL function like innovation platforms, continuously feeding the ecosystem
- **Strong "enablers", not just end products:** Companies like Zurich Instruments and HUBER+SUHNER create value by enabling others
- **Small country, global impact:** Swiss quantum firms compete internationally by focusing on precision, reliability, and niches

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