

# Quantum Computing @ HCL Technologies

By Enterprise Technology Office (ETO)

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# Quantum Computing @ HCL Technologies

Exploring Quantum Computing technologies across industries since 2015 - powered by Ecosystems, Talent, Research & Development, Industry Applications and Offerings

## Vision: To future-proof enterprises in their Quantum Computing(QC) journey

We are helping industry leaders understand and capitalize on the capabilities of quantum computing through a ready-to-innovate ecosystem via identified QC champions (technology and business), research IPs, use cases and scale ready offerings (QC Inspire, Workshops, Proof of Concepts and Fluidic Capability Centers). Thus, delivering first-mover QC advantage to the enterprises.

## Industries

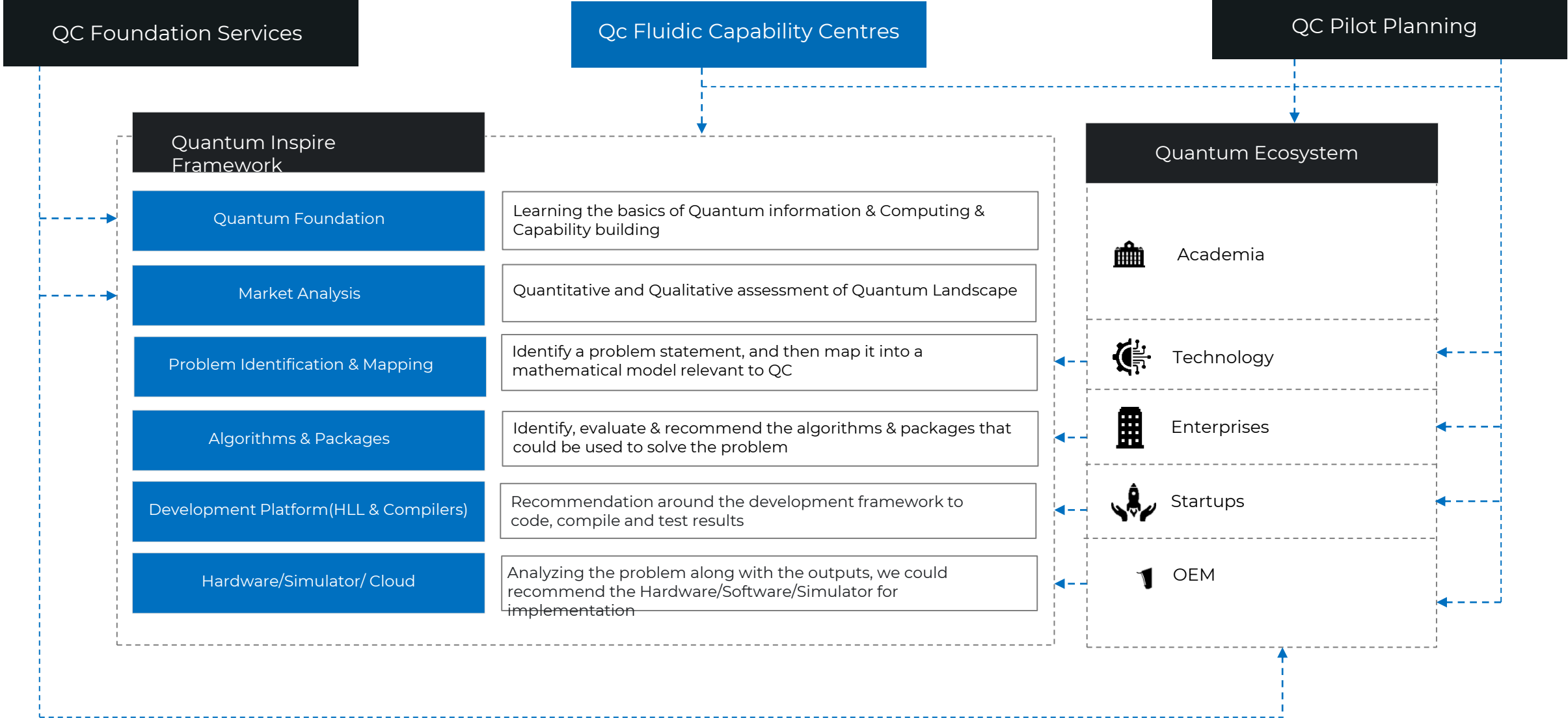
- ▶ BFSI
- ▶ Life-Sciences
- ▶ HealthCare
- ▶ Energy & Utilities
- ▶ Oil & gas
- ▶ Travel & Transport

## Use Cases

- ▶ Portfolio optimization and asset allocation.
- ▶ Molecular structure analysis by combinatorial optimization.
- ▶ Protein design using unconstrained discrete optimization.
- ▶ Battery usage optimization.
- ▶ Predictive maintenance using variational quantum classifier.
- ▶ Disruption management by optimized traffic re-routing.
- ▶ Hash collision for proof-of-work cryptocurrency mining.

# The HCL Quantum Inspire Services

## HCL Quantum Computing Services



# The HCL Quantum Inspire Services

## QC Foundation Services

### Overview

From time to time, you may have been inspired—but have you ever thought about what inspiration is, and the effect it has on you? HCL Technologies bring to you the inspirations for exploring open innovation & kick-starting your innovation journey to help technology enthusiasts understand the basics of quantum computing.

### Who should avail this service?

Anyone who is interested in exploring the domain of quantum computing..

### Outcome

- ▶ Market research (startup ecosystem scan + competitor analysis + investment trends) across industry specific quantum segments
- ▶ 2 QC centric webinars (business & technical)

### Duration

3 Days

### Cost

\$5000

## QC Fluidic Capability Centers

### Overview

Under this service catalogue, HCL Technologies will support in establishing a fluidic exploration team structure with co-directors and advisory panel coupled with identifying and upskilling internal talent, and forming key quantum ecosystem partnerships – both locally and globally. This will culminate in identifying viable pilot use cases and conducting early pilot planning.

### Who should avail this service?

CEOs, CTOs, government bodies

### Outcome

- ▶ QC Inspire webinar series
- ▶ Identify internal talent/enthusiasts Training on QC
- ▶ Training on QC
- ▶ Hands-on experience with PoCs & Whitepapers
- ▶ Establish ecosystem network

### Duration

6-9 months

### Cost

Needs to be discussed

## QC Pilot Planning

### Overview

Pilot planning will kick-start with the on-set of a problem-framing workshop to define the target customer/audience, help the decision-makers align, and focus the sprint on a clear business problem & help them understand the requirements/current gaps. This will aid in developing a proof of concept - testing the potential of identified solution in the market.

### Who should avail this service?

Scientists, R&D Heads, BU Heads

### Outcome

- ▶ Define & prioritize the problem statements.
- ▶ Validate whether the problem is quantum solvable
- ▶ Recommendation around the algorithms/packages to be used
- ▶ Recommendation on QC Infrastructure (hardware/software) required
- ▶ Help in defining the business case for PoC execution

### Duration

4-6 weeks

### Cost

\$30,000

# The HCL Quantum Inspire Services- Case in point across HCL

## QC Foundation Services Technologies

### The Need

Quantum Computing is a deep-tech, niche technology that was getting explored with a need of market information to familiarize and educate people.

### How we did it ?

We started the knowledge enhancement sessions with Quantum Inspire series which constituted of multiple webinars focusing on core tech as well as specific verticals.

### Program Outcomes

- ▶ 10 Inspire webinars conducted
- ▶ 8 ecosystem partners engaged
- ▶ 4 industries covered
- ▶ 10+ use cases discussed
- ▶ 800+ Quantum enthusiasts inspired
- ▶ 3 fire-side chats conducted

## QC Fluidic Capability Centers

### The Need

Quantum Computing is an ecosystem play for sure as no one has full expertise yet. HCL Technologies wanted to create in-house capabilities without putting much pressure on the commercial aspect to start with.

### How we did it ?

We helped people in upskilling around quantum technology by training them through eSTiP™ Academy for QC. In parallel, we expanded and built our QC ecosystem as well.

### Program Outcomes

- ▶ 22 QC Champs Graduated Created Quantum Ecosystem
- ▶ 30+ Startups Explored
- ▶ 7 Academic Alliances
- ▶ Trade Mission & VC Partnership

## QC Pilot Planning

### The Need

Things have started to move forward from the point of only exploring the technology. Clients are looking for pilots/proof of concepts to be delivered.

### How we did it ?

We enabled our fluidic workforce and started working with them on planning for few pilots across different verticals and taking into context multiple business cases.

### Program Outcomes

- ▶ 5 PoCs in progress
- ▶ 4 Verticals (Transport, BFSI, Chemistry, Cybersecurity)
- ▶ 12 Use cases evaluated
- ▶ 6 Use Cases Recommended
- ▶ Deployment across Multiple QC Cloud Platforms

## News mentions:



[Press Release](#)



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[www.hcltech.com](http://www.hcltech.com)

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