GETTING QUANTUM READY

A Framework for Exploiting Quantum Computing in SMEs

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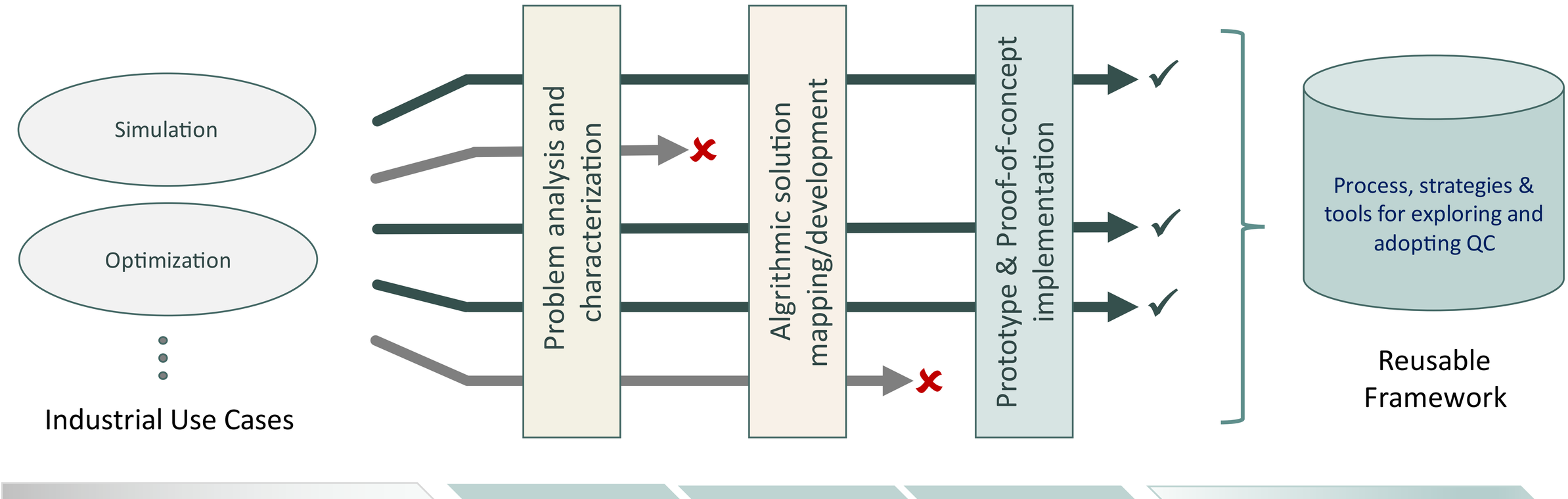


Introduction

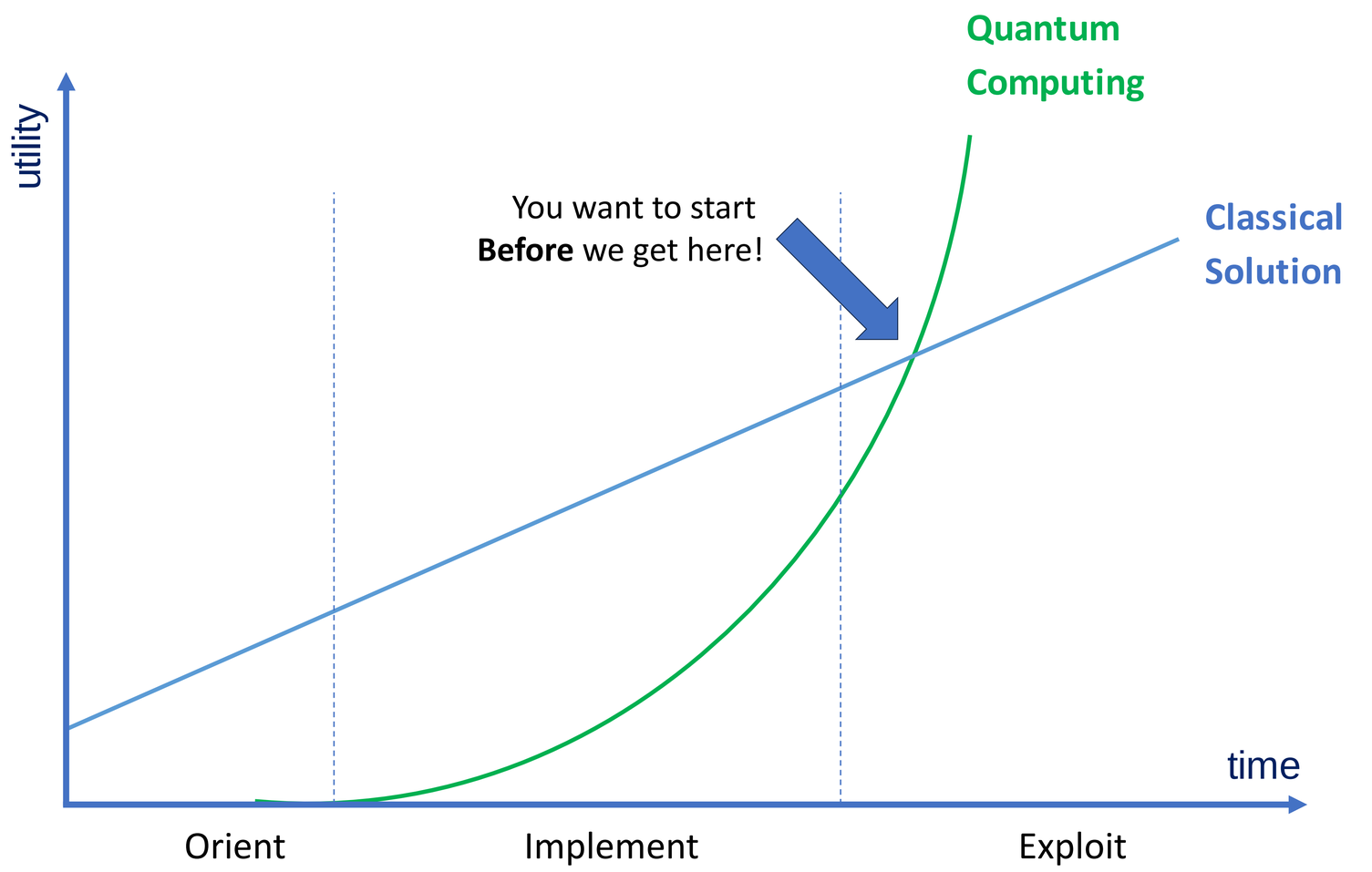
Entry into quantum computing is very hard for small and medium-sized companies due to their limited time and resources. However, evaluating whether quantum computing technologies will prove beneficial for them in near-term and to develop realistic and reliable adoption strategies requires developing expertise now. *QuantumReady* is expected to cut the time spent for exploration and evaluation down to 50%, which will allow more companies to evaluate and eventually realize the benefits of quantum computing.

Challenges

- Identification of suitable Tasks
  - What problems are suitable for Quantum?
  - And which are not?
  - What improvement can I expect?
  - What is the time frame?
- Building expertise
  - Which experts do I need?
  - Do I need them in-house?
  - Where can I find them?
  - Can I get funding?
- Utilize Advantage
  - How do I materialize the advantage?
  - How do I retain my advantage?
  - How do I expand my advantage?

Goals

1. Develop a **clear set of principles** to characterize promising use cases for existing and near-term quantum processing units
2. Engineer **concrete algorithmic solutions** for promising use cases using state of the art quantum-classical hybrid algorithms as template
3. Realize **prototype/proof of concept implementations** of the developed solutions to demonstrate their feasibility
4. Define a **general evaluation criteria** and repeatable development strategies to efficiently assess and realize future solutions



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