



How to analyze quantum computing use cases

At the **France Quantum 2025** event in Paris on June 10th, 2025, I had a chance to deliver a keynote on how to analyze quantum computing use cases. It was a first of a kind presentation on this topic as far as I am concerned.

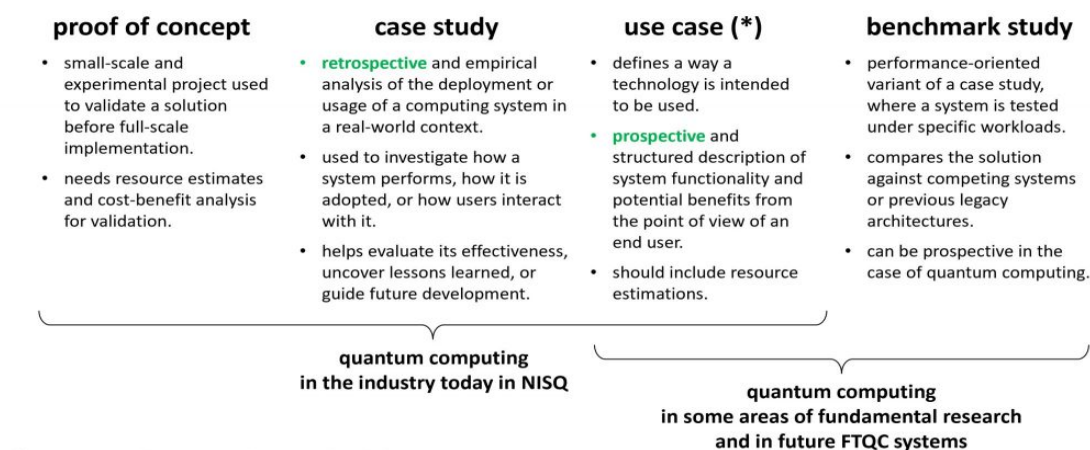
I started with semantics, explaining the difference between a use case (prospective) and a case study (retrospective). In the first case, you not only need to describe potential benefits (with a mix of speedup, better results quality, lower capex/opex costs including energy), but also provide resource estimates. In the second case, which is quite rare, at least in the industry and beyond fundamental quantum physics research, you need to describe actual benefits in comparison with state of the art classical computing. Right now, you have >99% use cases and <1% case studies of actual industry deployments. It may change in the future with hardware progress (both in NISQ and FTQC regimes) and it will require a lot more quantum algorithms and software innovation.

The video replay is available: **How to analyze quantum computing use cases**, June, 10th, 2025 (30 mn).

As well as the **slides** and some comments on **LinkedIn**.

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Some of my talk is based on the related paper I published back in October 2023. I added a critical view on the key elements missing in most use cases. And the semantics discussed above.



A framework to analyze quantum computing case studies

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