

# QC & Politics

## Some definitions:

- Quantum Computational Supremacy:** the situation of technological progress where a universal quantum computer (a theoretical model of a hardware and software that can simulate the operations of a quantum computer) is capable of performing calculations that are beyond the capability of any other classical computer.



What would happen if a world superpower, economic or political, obtained the quantum supremacy before the others? What would the implications be, if one nation or company had more computing power than another nation or competitor? Which would the consequences of possible inequalities be, as far as society, the military, economy, and science are concerned?

Which kinds of professions would the world of the **second quantum revolution** need? Maybe a quantum advisor? A quantum engineer? Instead, which professions would disappear? A cooperation between the public and the private sector is undoubtedly necessary, in order to reinvent competences and create new job profiles.

## Some examples:

- IBM Q System One:** At the CES (Consumer Electronics Show) in Las Vegas between 9 and 10 January 2019, IBM presented the System One, said by the company to be the first universal quantum computer ready to exit a laboratory. It has a 20-qubit processor and will serve scientific and commercial purposes. It will not be sold but will be accessible via Internet. According to the experts, it does not exceed the power of some supercomputers.
- AcceleraItalia IBM:** it is a collaboration between IBM and 48 Italian universities. They united for creating a common pathway for education

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and research which has the aim of creating new job roles that can tackle the future technological innovation and the digital transformation.

- **FET Flagship in Quantum Technologies:** ten-year research programme that has been launched by the European Commission with an investment of one billion euros thanks to the requests of scientists, entrepreneurs and institutions representatives collected in the *Quantum Manifesto*—a document written in 2016 for showing the urgency of developing the field of quantum technologies in Europe and make it able to compete on a global level in the new technological challenges.

Links	Descriptions
<a href="https://www.youtube.com/watch?v=LAA0-vjTaNY">https://www.youtube.com/watch?v=LAA0-vjTaNY</a>	IBM Q System One Advertisement
<a href="https://www.research.ibm.com/ibm-q/system-one/">https://www.research.ibm.com/ibm-q/system-one/</a>	IBM Q System One website
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<a href="https://qt.eu/app/uploads/2018/04/93056_Quantum-Manifesto_WEB.pdf">https://qt.eu/app/uploads/2018/04/93056_Quantum-Manifesto_WEB.pdf</a>	Quantum Manifesto
<a href="http://www.qtflagship.cnr.it/">http://www.qtflagship.cnr.it/</a>	[ITA] CNR (Italian National Research Council) website on Quantum Technology Flagship.
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