







### Big data is one of many disruptive technologies



The source of information in this Mind Map comes from http://www.mckinsey.com/insights/business\_technology/disruptive\_technologies



## Space is per se not disruptive – but a very powerful enabler



### Earth observation showcases how space can benefit human society



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contains modified Copernicus Sentinel data (2015–16) /CESBIO/ESA DUE GEO-Rice Innovator project



#### Can space help to bridge the "Digital Divide"?



#### Global IoT, M2M and the Industry 4.0 Vision – Blessing or Curse?



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#### In a global-interlinked industry scenario, Cybersecurity becomes a GLOBAL threat!

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10.000

# The digital age has made information widely available



Source: Hilbert, M., & López, P. (2011). The World's Technological Capacity to Store, Communicate, and Compute Information. Science, 332(6025), 60 –65. <u>http://www.martinhilbert.net/WorldInfoCapacity.html</u>



#### Quantum Cryptography: a tool for ultimate secure transmission?



QUESS – the Quantum Space Satellite of 500 kg mass, located at an altitude of 1000 km – is a Chinese-European Collaboration to showcase the feasibility of Quantum Key Distribution as of summer 2016.



## Will Big Data enable us to build a computer with AI?



- AI ← Dartmouth College, 1956
  - Four types of intelligence: Visual / Verbal / Physical / Rational (Expert systems)
  - Strong AI: Creation of an intelligence
  - Weak AI: Simulation of intelligent behaviour



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## The 3 classical natural sciences form the basis for progress...





#### ... and for a landscape of emerging risks

