

## Sir Mark Walport (Government Chief Scientific Adviser) – The inexorable rise of the machine

### Abstract

Maps have gone through major advancements over last century from putting maps onto physical objects such as parchment to the revolution of digital mapping. Increasingly technology is transforming maps enabling 3D visualisation, mapping change in real time, depiction of place in different ways and personalisation. Technology is important and matters to government. Bringing datasets from central and local government together enables the whole country to remain resilient, and enables collaboration of people, helps customers with modelling, monitoring expenditure. Today there is growing awareness for the potential of machine learning and the capabilities the rise of machines bring.

- So-called ‘place cells’ in the brain the people navigate the world. The brain of taxi drivers, for instance, gets larger as they become more used to where places are.
- Putting maps on objects was the first geo advance
- In the 20<sup>th</sup> century great advances in instrumentation and measurement were made helping the quality of surveying equipment
- Much of the economy is dependent on positioning, navigation and timing. As we become more dependent on technological systems, we need to look at resilience
- The development of digital maps has been a critical change
- Within a short space of time much development has happened that has allowed people to be put on maps, and the use of maps in the domains of research as enabled researchers to visualise datasets of different topics as diverse as plotting a genome study
- Precision farming, for instance, has created opportunities and markets
- Geospatial is relevant in the way buildings are constructed and throughout the entire lifecycle of the building
- Increasingly over the last few years, central and local government have utilised datasets underpinned by Ordnance Survey maps in national emergencies
- Increasingly there are concerns about safety and privacy
- *Maps matter.*

### Q&A

*How can we stimulate closer workings between people and data?*

- Government needs to be a good customer, then more people will use data
- the use of data needs to be demystified for policy-makers
- Modelling, AI and machine learning provide great opportunities

- However, there is high opportunity cost, because someone has to pay for it