ORDNANCE SURVEY

UN-GGIM Future Trends report – Overview

Christin Walter, Foresight Specialist



Setting the scene

"We always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next ten."

Bill Gates (1990s)



- Global trends of expanding urbanisation, concerns about food production, climate change issues, the need for sustainable land management and development and growing inequality are putting the globe under stress.
- The way in which our society is organised amplifies the structural threats that climate change and the emergence of new infectious diseases have upon the world.
- Governments and institutions can make the necessary investments in the many components of preparedness of which geospatial information is key.
- The report will complement the Integrated Geospatial Information Framework helping to ensure that the Framework integrates and takes advantage of the latest innovations and trends.



What is the Future Trends report?

The Future Trends report provides expert opinion on the mid to long term-developments in geospatial information and is a strategic insight document for all countries and the global geospatial information community.

It is broad in nature, looking at emerging trends in technology, legal and policy, skills and training, the private and non-governmental sectors, and in the role of government.

Recognizing that disruption and change in the geospatial community are likely to occur as a result of the linking of multiple trends, the report explores a diverse set of emerging and developing trends. Among others, these include data privacy and ethics; Digital Twins; Artificial Intelligence and data analytics; and, capacity building.

The full <u>Future Trends report</u> can be accessed here.





Geospatial drivers and trends

- Relevance of data integration and interoperability increase
- Products and solutions produced from multiple data sources becoming the norm
- New opportunities for data gathering, i.e. autonomous vehicles
- Crowdsourcing and VGI become established ways of data collection
- High-resolution highrevisit Earth Observation data become valid alternative to aerial imagery
- Big Data processing has become a normal path of geospatial data processing
- Integration of multiple data sources requires licensing harmonisation
- Digital platforms provide access to data at scale
- Linked Data enables knowledge-on-demand

- Ubiquitous connectivity enables deployment of new tech
- Digital infrastructure through sensors and IoT
- Interconnecting modes of transport through intelligent mobility
- Digital Twins for modelling, simulation and prediction
- Wide uptake of edge computing to enable intelligent mobility, the IoT, and smart cities
- Visualisations and immersive technology widely used to enhance customer experience and decision making
- Machine learning, deep learning, and AI disrupt geospatial production
- Data cubes can deliver analysis ready data
- Quantum computing enables intensive processing

These trends should not be considered in isolation.

It is recognised that disruption and change in the geospatial industry are likely to occur as a result of the linking of multiple trends.

- Rise of products and services specifically designed for the urban environment
- Demand for real-time information provision
- Digital divide and exclusion continue to hold back universal digital transformation
- Seamless experience between outdoor and indoor mapping becomes an expectation
- Viable integrated Smart City solutions becoming wide spread

- Increased diversity at work in technology. science, and innovation
- Talent and consumer shift - changing values and attitudes
- Incubator spaces enable innovation to enter markets swiftly
- Regeneration of business ecosystem through the rise of nongeospatial start-ups
- New collaboration agreements with industries outside of geospatial emerge

- Digital ethics and privacy addressed by national and international initiatives
- Cybersecurity conversations increase in tandem with increase in digital devices
- Pace of digital and tech change puts pressure on national institutions to address policy and legislative shortcomings
- Pressure on aovernment institutions to be more tech and digital savvv

Technological advancements Evolution of user requirements

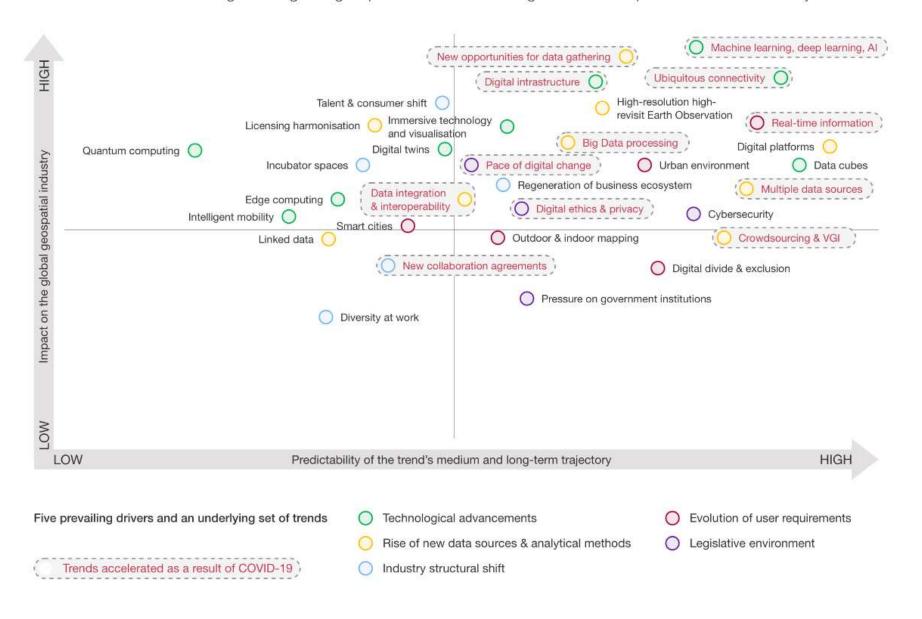
Industry structural shift

Legislative environment



The impact of the pandemic on geospatial trends

Five drivers will advance change in the global geospatial information management landscape over the next 5 to 10 years



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- Analysis of spatial big data to trace people's movements
- Using contextualized data,
 digital maps and technologies
 to predict behaviour
- Machine learning techniques using aerial and satellite data

The global response to COVID-19 has reminded the geospatial sector of the importance of both human and physical geographies working alongside one another.



Thank you!

For follow up questions, please email: christin.walter@os.uk

