SECOND UNITED NATIONS WORLD GEOSPATIAL INFORMATION CONGRESS 2022

ADVANCING NATIONAL MAPPING AGENCIES

How NMGAs are staying at the forefront of the future geospatial information ecosystem

David Henderson, Chief Geospatial Officer

Ordnance Survey

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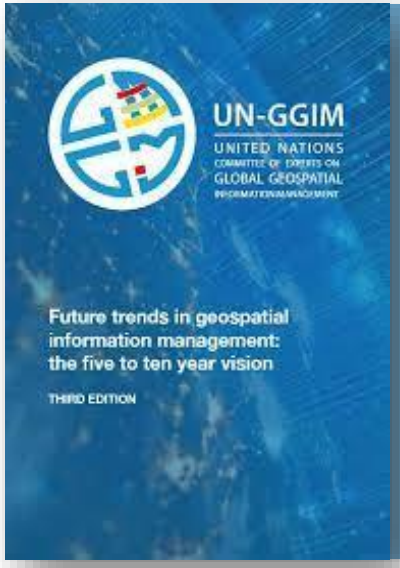
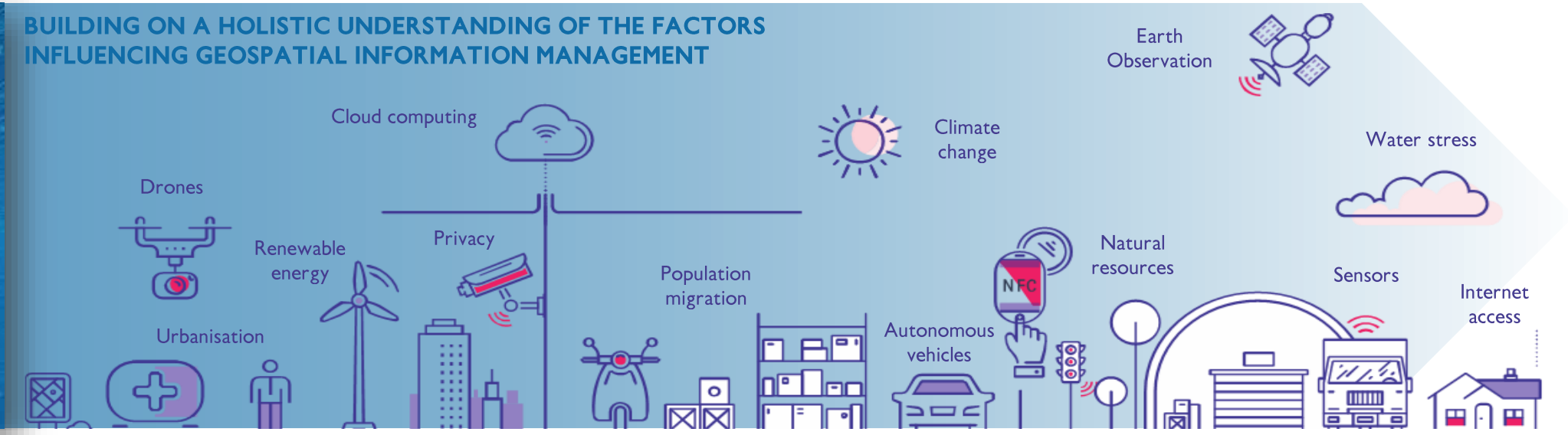
Setting the scene – The level of geospatial maturity of each NMGA, the priorities of the nation, and a unique set of external factors determine the precedence of the future geospatial information ecosystem for reducing the digital divide.

1. Keep it simple and complementary to the IGIF methodology.
2. Recognise there is no one future geospatial information ecosystem that is equally relevant to all, but a set for factors that can help determine the best path for NMGAs.
3. Understand which factors are the most beneficial for overcoming legacy systems.





Source: UN-GGIM. (2020). *Future Trends in geospatial information management: the five to ten year vision – Third Edition.*

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Unlocking insights from geospatial data

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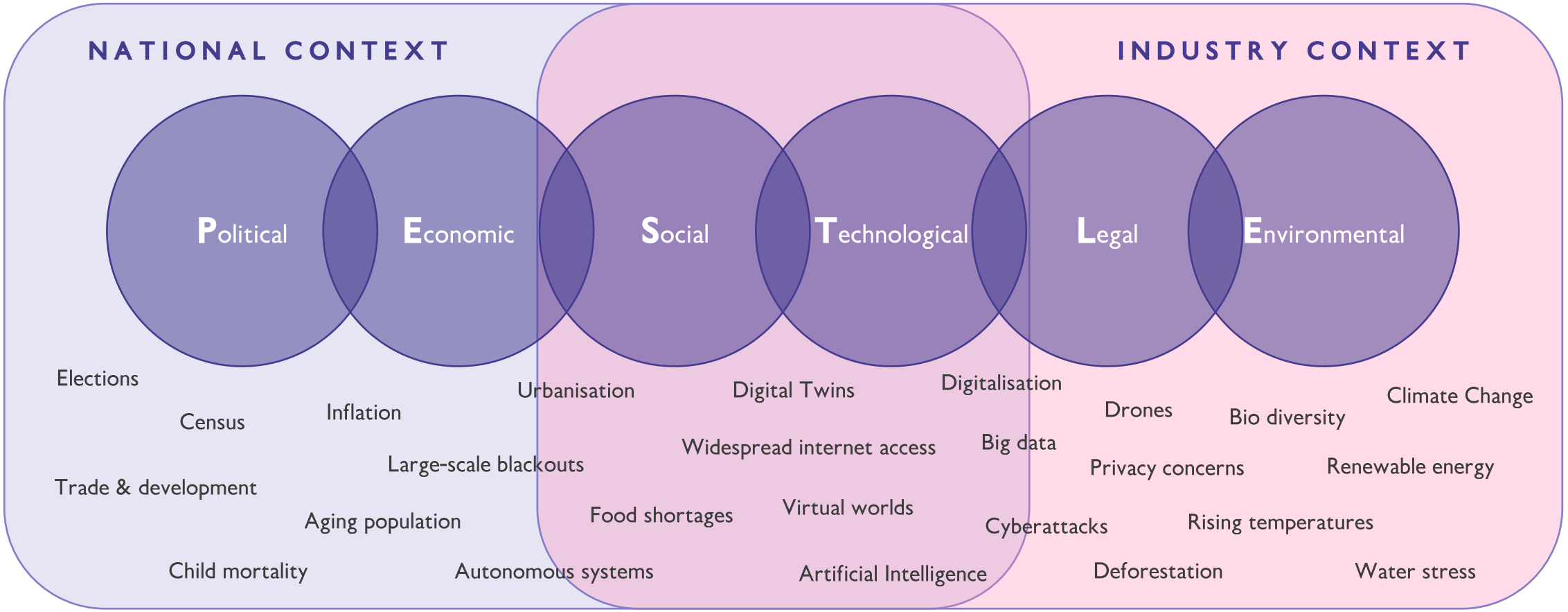
External environment – Every NMGA is influenced by a different set of factors that determine its immediate actions and future opportunities.



Having a overview of the multitude of factors impacting NMGAs from a national and industry perspective can help clarify how and which developments to prioritise

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A decade of sustainability

"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.
- Confidence in trusted analysis comes from high quality geospatial data. Quality data stems from well-defined systems capture, maintenance and information governance – and is made discoverable, accessible and usable.

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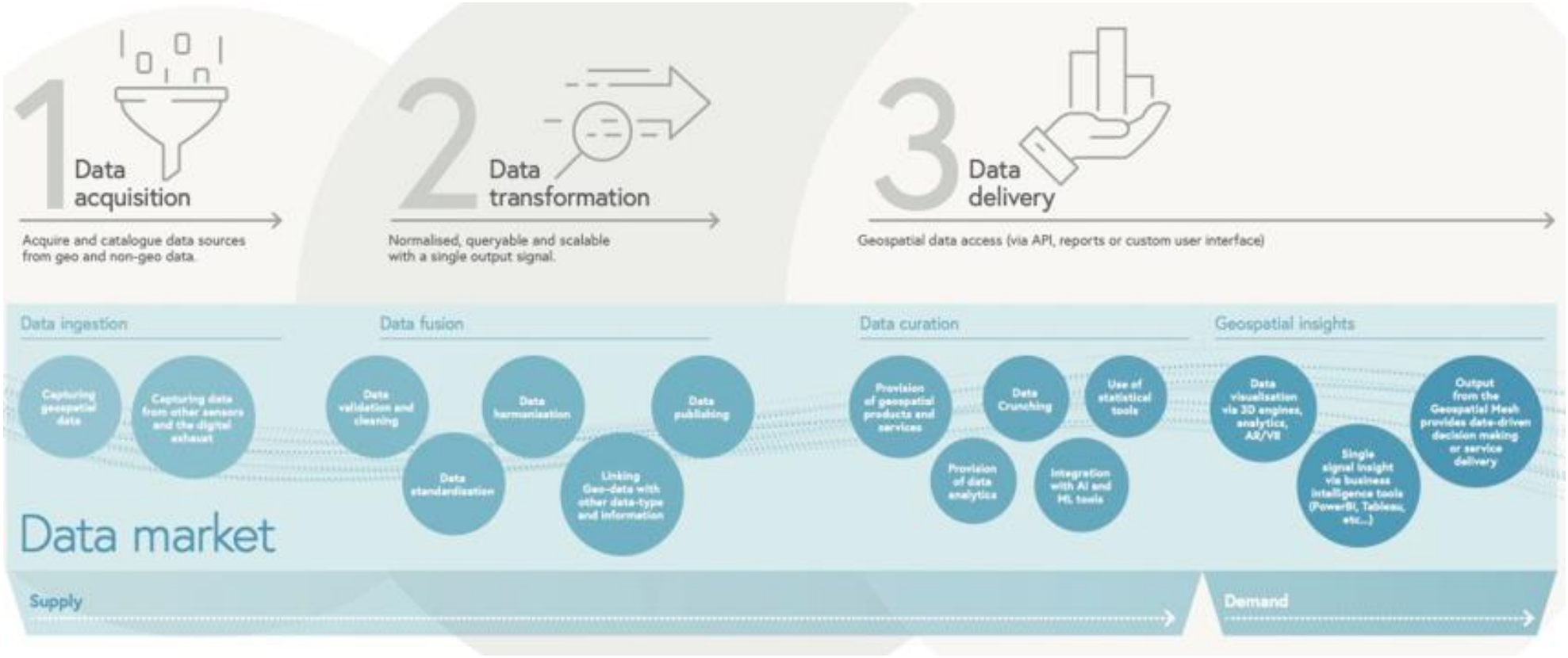
Internal capabilities – To bridge the gap between where an NMGA is, and where it aims to be, starts with knowing what you have.



Source: Knowledge Transfer Network and Ordnance Survey. (2020). *The power of place.*

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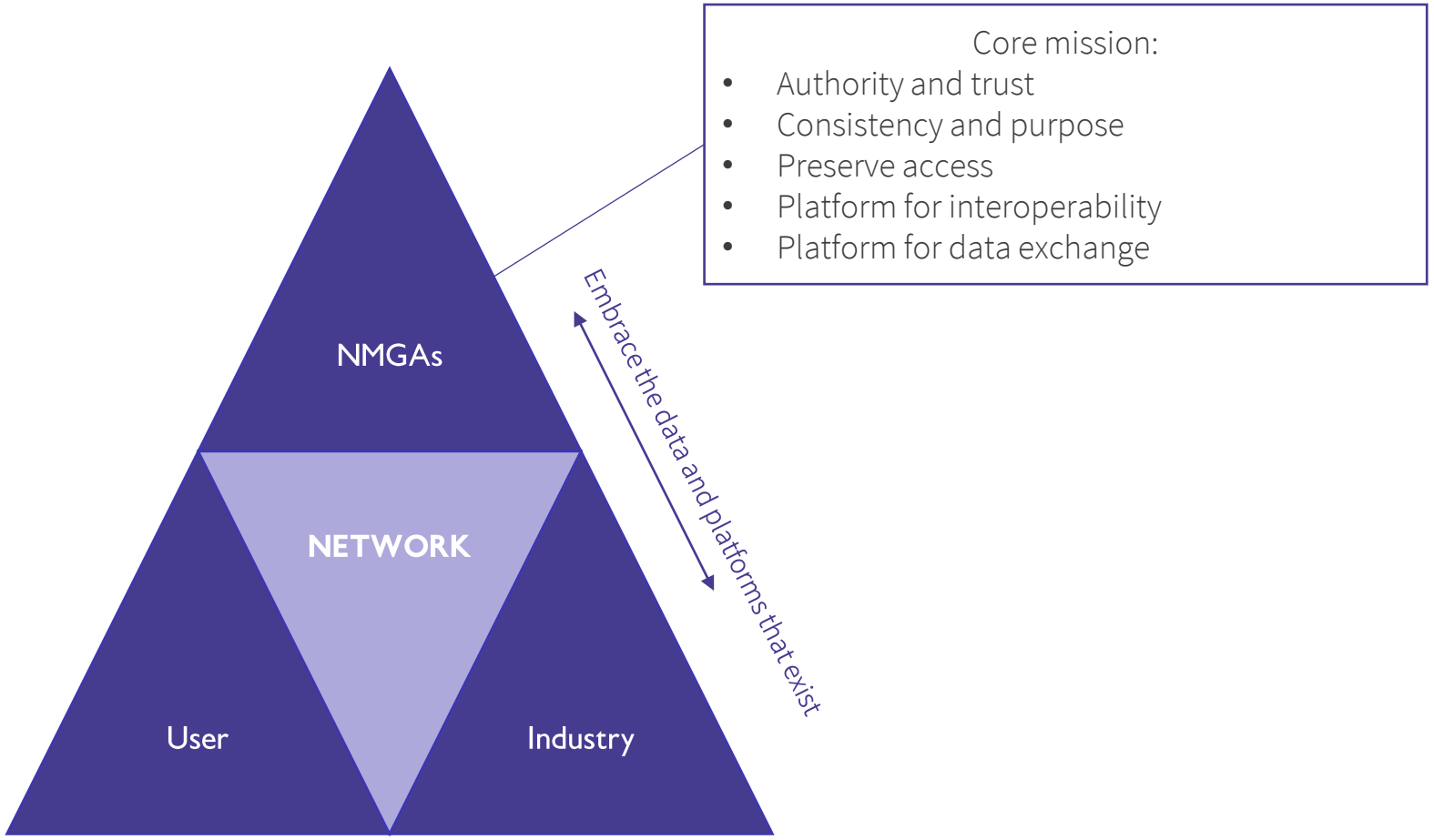
What does this tell us about the future geospatial information ecosystem and the role of NMGAs within it?



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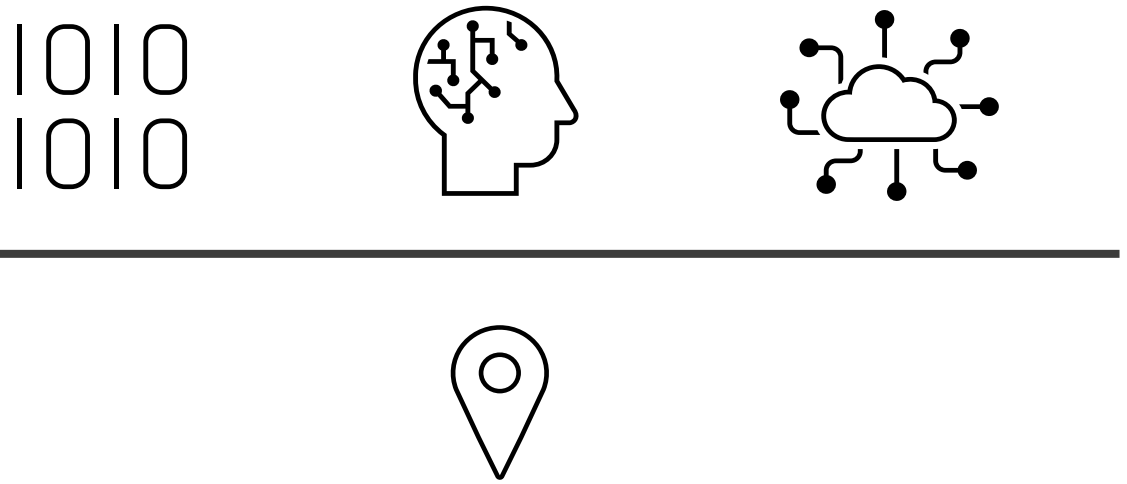
Location is the common denominator

Data is the backbone of new products & services & fundamental to the efficient and optimal running of internal processes



*Big Data: Velocity, Variety & Volume; driven by democratisation of technologies e,g. IoT, Satellites & CAVs

OS data framework

Vision and strategy

Products and services

Data framework

Data strategy and narrative
Sets our direction and need for change

Data principles
Aligning our policies and processes for data under a common set of principles

Data
Data fit for a digital age

Platforms and technology
Capability development

People
Great people with great skills

Our data mission: To connect data through the language of location, to enable greater insights, better decisions and smarter outcomes.

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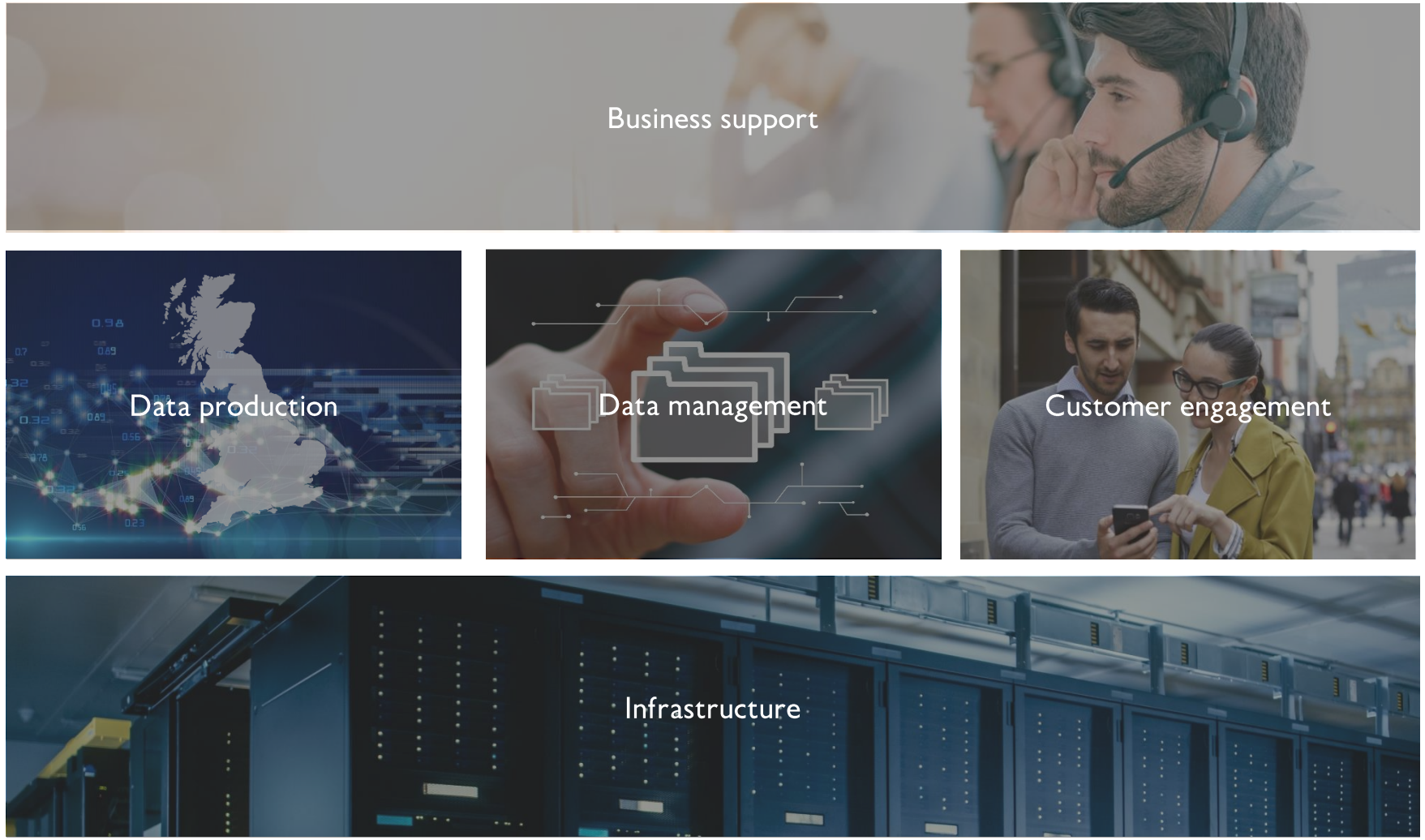
Core architectural framework



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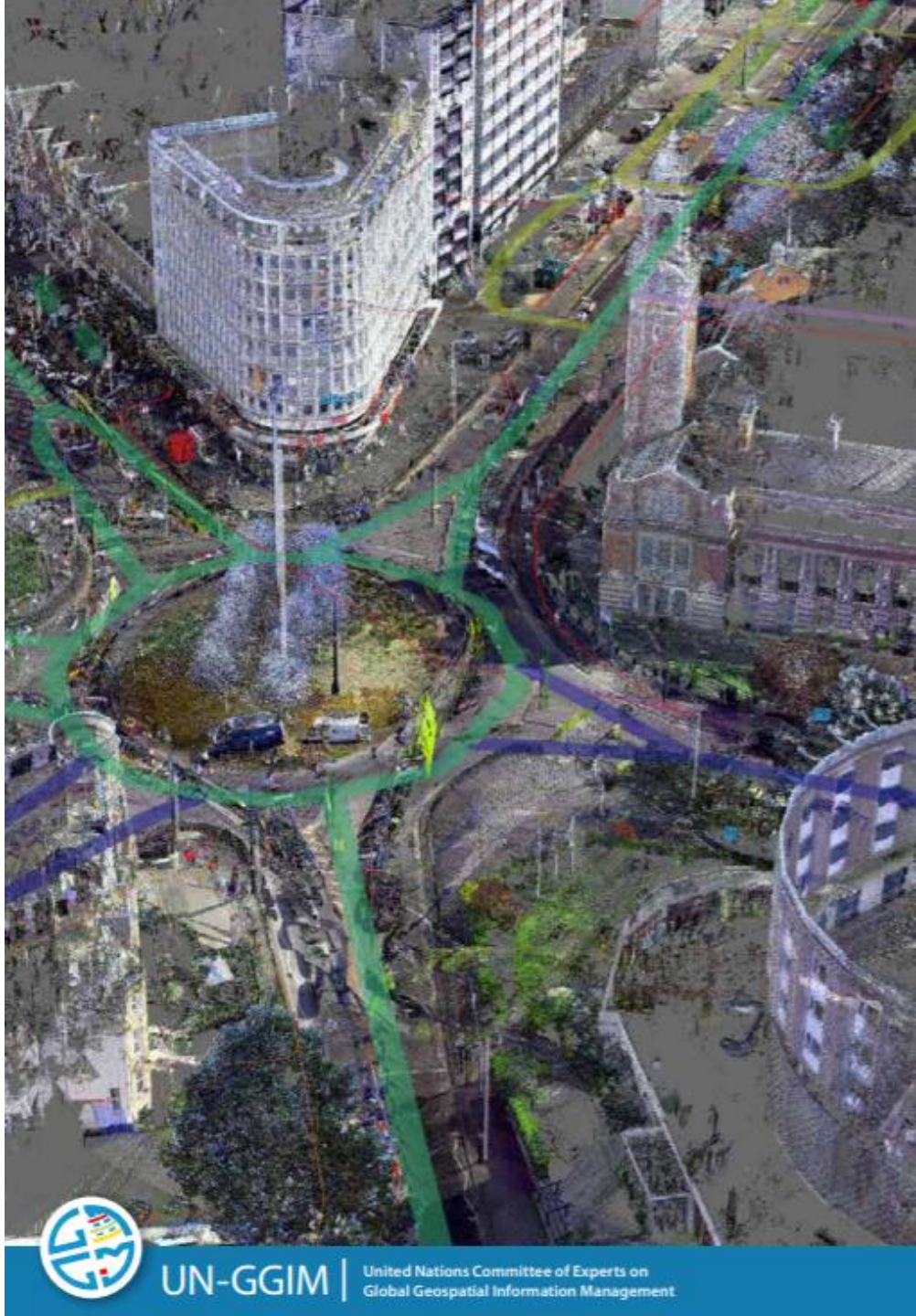
Artificial Intelligence and Geo Production

- GeoAI extracts knowledge from spatial data.
- Continued developments in image recognition and feature extraction, coupled with reduced storage costs, will provide opportunities for faster data capture and maintenance of geospatial information, and will come closer in quality and usability to that which can be achieved by traditional survey methods.
- Increased automation and improvements in machine learning free up time-consuming and resource-intensive tasks leading to higher production efficiency.
- Big Data processing will be the norm as machine learning and deep learning mature and become established functions in geospatial production.



Artificial Intelligence and Geospatial Analytics

- Many forms of technological advancement highlighted in the Future Trends report will produce new streams of geolocated data.
- Sensor data from smart buildings; road & vehicle state information from connected vehicles; other sensor data from the Internet of Things.
- Automation will be needed to:
  - Make sense of (summarise) these streams.
  - Highlight important changes or activity (pattern finding & then exception finding).
  - Integrate data between locations & domains.
- The right features/attributes in NMCAs' foundational geospatial data can greatly ease these analytics.

SHOW THE WORLD HOW TO GET TO A BETTER PLACE

THANK YOU

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