ORDNANCE SURVEY

The power of geospatial – achieving it globally

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‘The world’s most valuable resource is no longer oil, but data’

The Economist

“Everything happens somewhere…”

Nancy Tosta, June 2001

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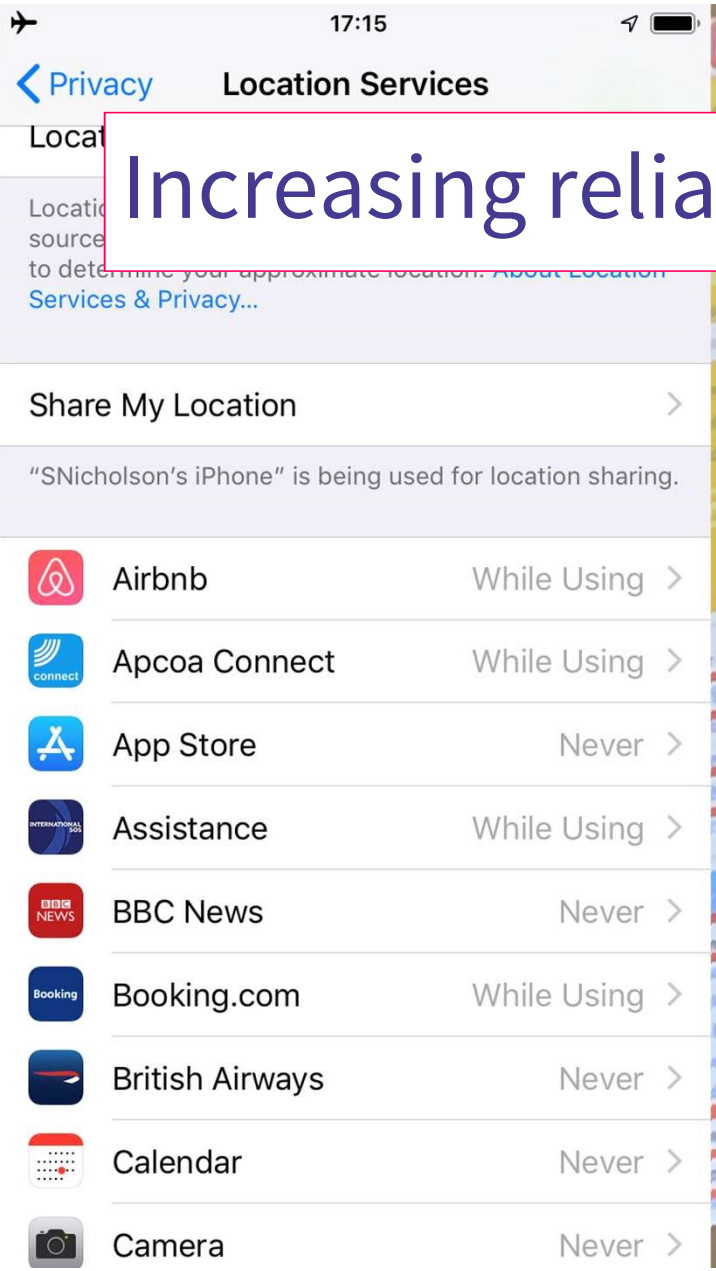
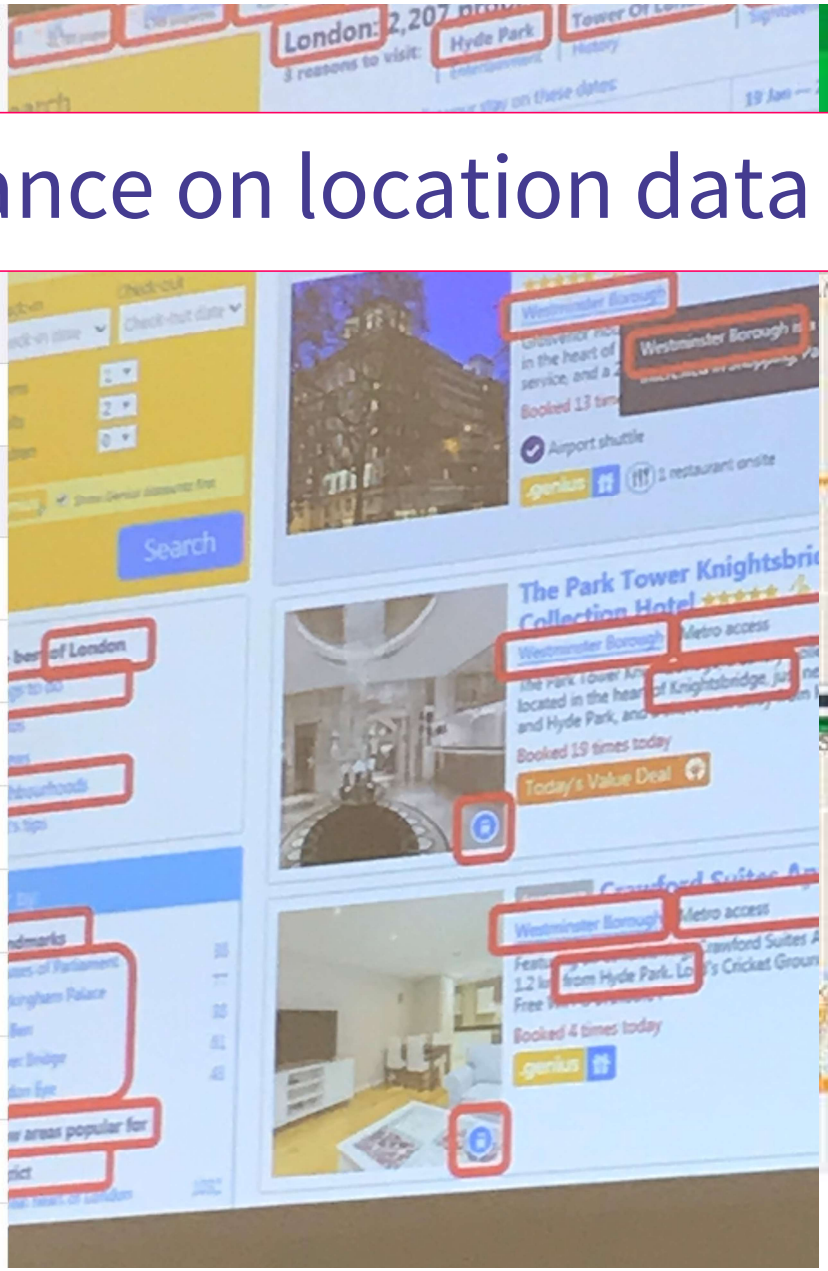
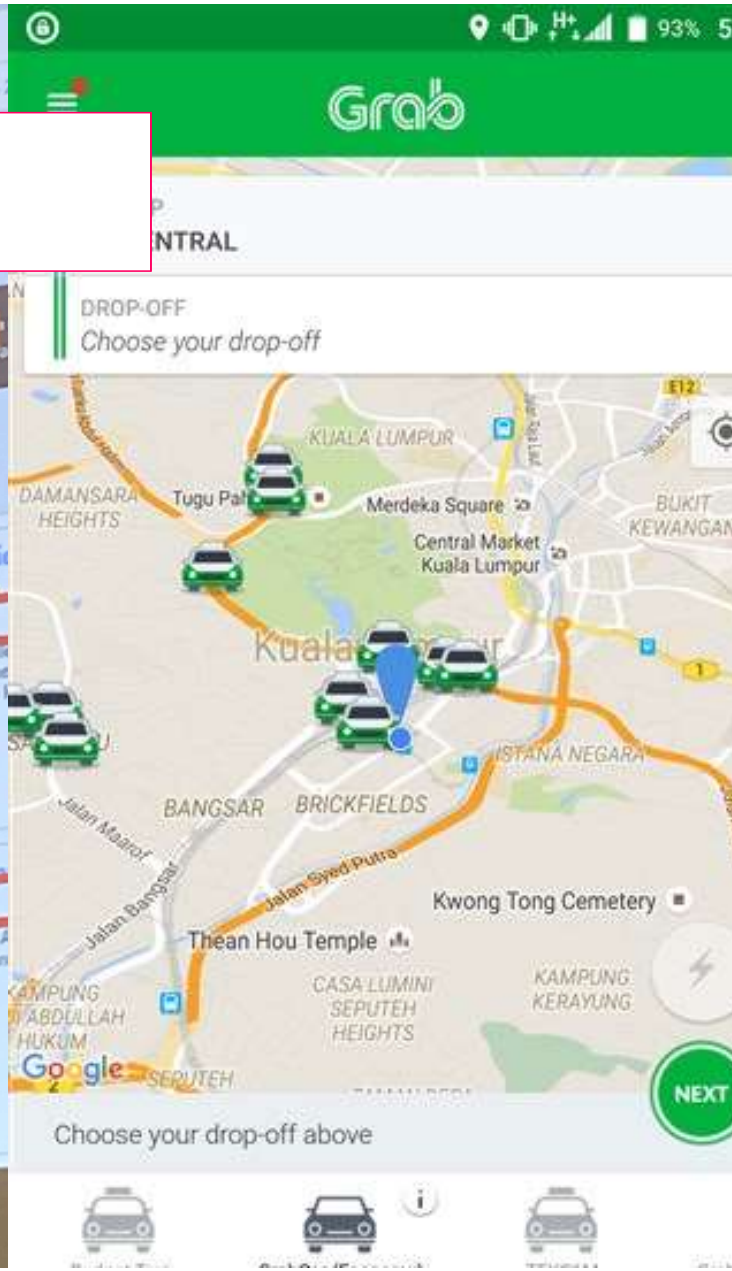
Increasing reliance on location data



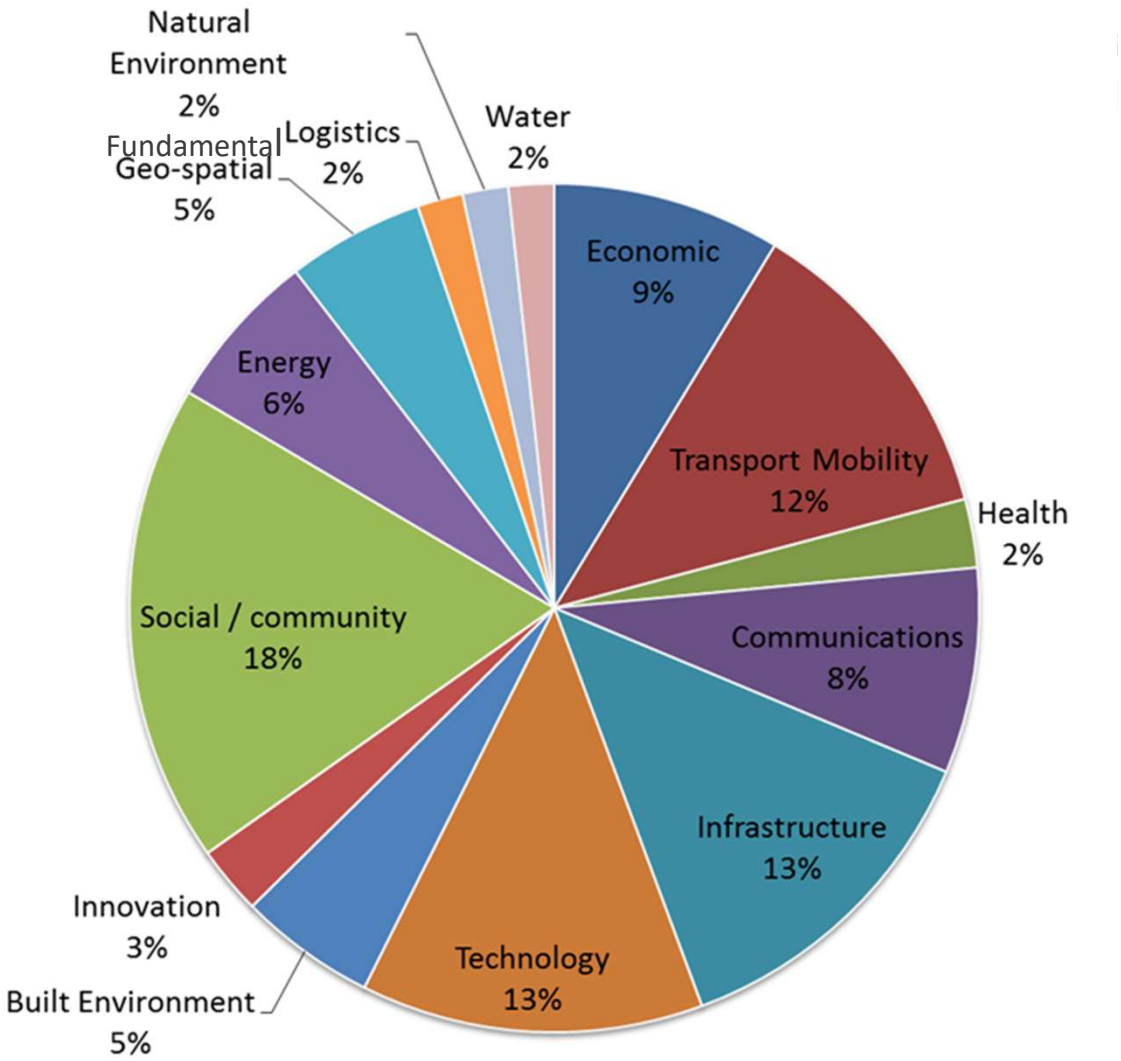




The Data Ecosystem

80%

of data has an associated location



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Disasters – an example of sharing

Dealing with disaster – who has the critical data?

Health	Agriculture and Rural Developm't	Defence and Security	Cities and Local Government	Natural Resources and Environment	Digital knowledge system	World Bank Project A, B
Revenue Generation	Construction and Transport	Telco's	Logistics	Utilities	SDGs	'the crowd'

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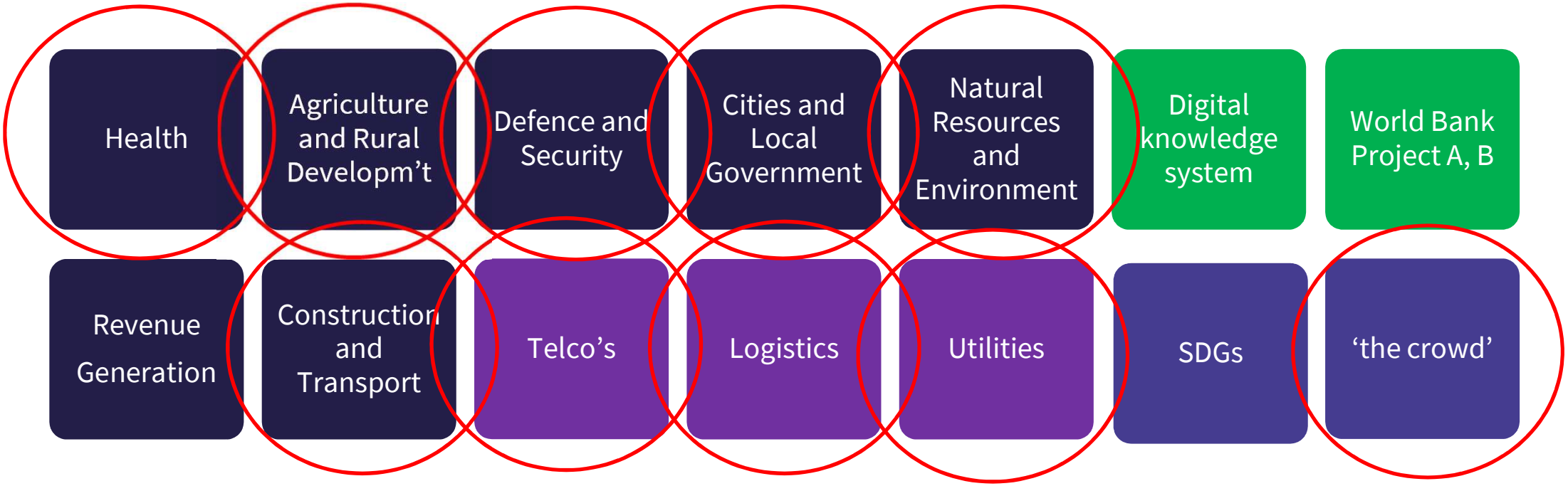
Dealing with disaster – who has the critical data?



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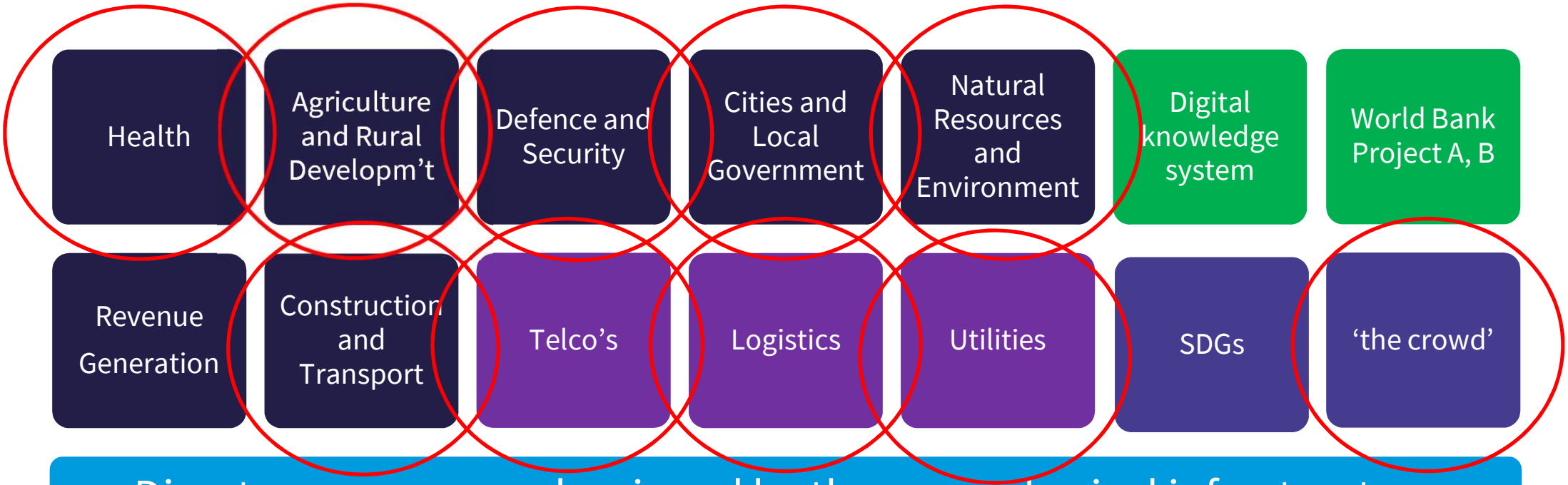
Dealing with disaster – who has the critical data?



Disaster response underpinned by the same physical infrastructure (roads etc) – the aim should be the same "digital twin"

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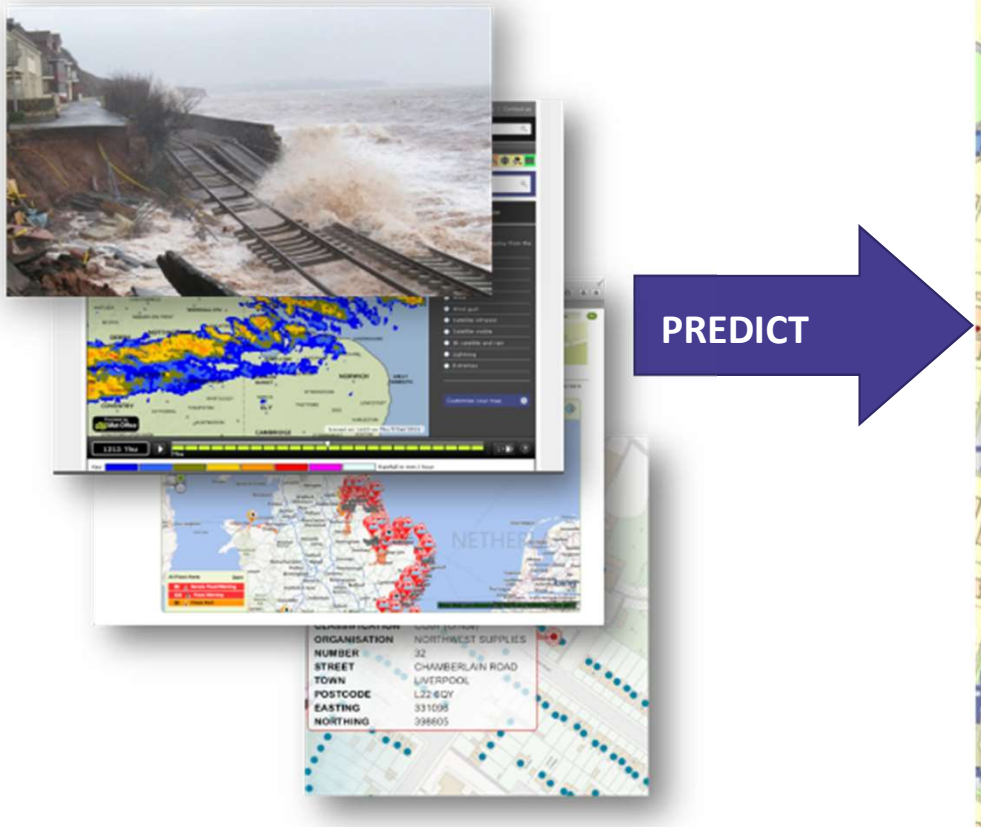
Integrating data - who do we evacuate to avoid risk from tomorrow's storm?



PREDICT

Data from Ordnance Survey, Environment Agency, Meteorological Office and GeoPlace

Societal Benefits

- Resilience
- National Defence and Security
- Comprehensive urban and rural planning
- Land tenure
- eGovernment services
- Sustainable Development Goals

Security of land tenure underpins development

- Land: 75% of world GDP
- Effective infrastructure planning and delivery
- Access to credit and tenure security
- Fair compensation
- Land tax

Vietnam Industrial Development Strategy
to encourage the development of the private sector and foreign invested sector.

Esperance, 39, a mother of four used to be in constant dispute with her neighbours over ownership of the land she lived on. Through a DFID-funded land registration programme, the dispute is now settled and she is a proud landowner.

Economic Benefits

- Increased tax revenue
- Land tenure and security
- Investment
- Government efficiency and effectiveness
- Digital business
- Industrial Planning
- Agriculture
- Innovation and jobs

Evidence that good data creates wealth

UK: potential $8-14 billion per annum economic value from private sector adoption of geospatial data. Particularly: Retail and logistics, Property and land, Infrastructure and construction, Mobility, Natural resources

According to the McKinsey Global Institute, cross-border flows of data grew 45 times from 2005 to 2014, and accounted for $2.8 trillion (approx. 3.3%) of global GDP in 2014.

European Commission calculating that "even limited use of big data analytics solutions by the top 100 EU manufacturers could boost EU economic growth by an additional 1.9% by 2020."

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The economic contribution

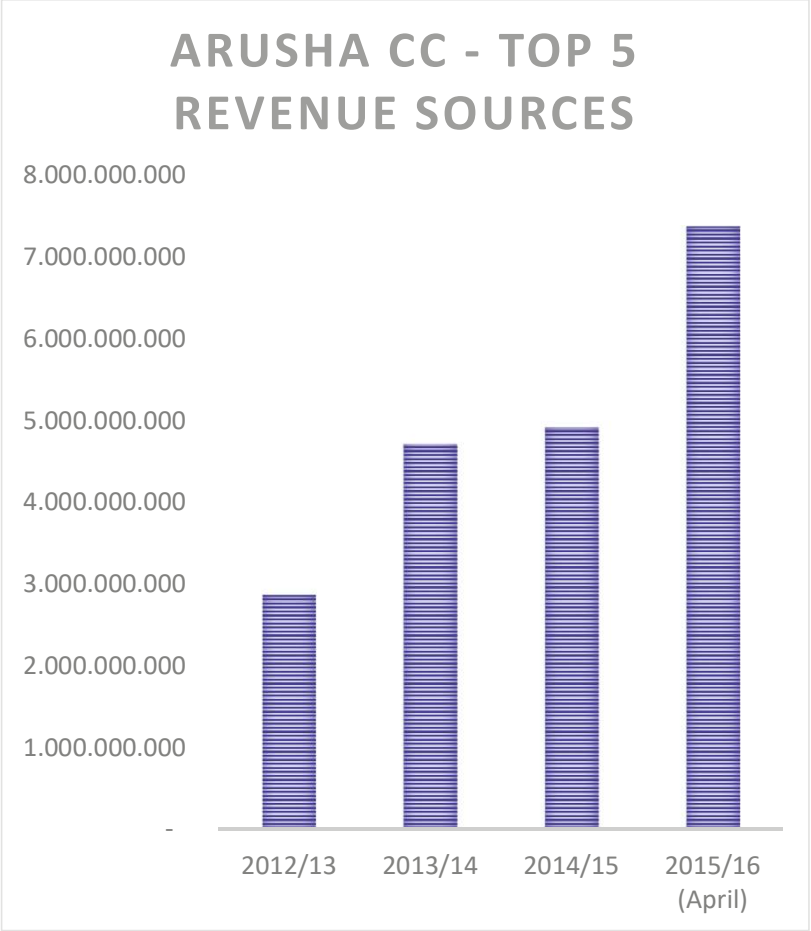
Year	Study	Relates to:	Country	GDP impact
2008	ACIL Tasman	Impact of modern spatial information technologies	Australia	0.6-1.2%
2008	ACIL Tasman, SKM & Ecological Associates	GI contribution to productivity	New Zealand	0.6%
2010				0.23%
2011	ACIL Ta			0.4%
2011	Geol			0.25%
2012	Richard			0.09%
2012	Boston Consulting Group	Geospatial Industry (including remote sensing satellites)	USA	0.5%
2013	Oxera	Geospatial Industry as % of GDP	Global	0.2%
2014	Indecon	GI Contribution to the economy	Ireland	0.33%
2015	Hickling Arthurs Low, Acil Allen Consulting, Fujitsu & ConsultingWhere	Contribution of geospatial industries and GI to GDP	Canada	1.1%

Creating and using geospatial information could enhance Vietnam GDP by US$400–US$1200m pa

HEALTH WARNING – THESE ARE HIGH INCOME NATION STUDIES, EVERY NATION WILL BE DIFFERENT

Revenue Example: Arusha Local Government Revenues

- Service levy, property tax, billboards, parking fees, income from sale or rent, market fees and charges, secondary school fee etc.
- Local Government Revenue Collection Information System: Geographically locate all taxpayers and properties
- Comprehensive spatial database: satellite imagery, roads and individual buildings digitised, unique property reference number, attributes (e.g. use, condition, age),



World Bank Land and Property Conference 2017. The role of ICT in delivering efficient revenue collection in developing countries: The Tanzanian experience. Prof William McCluskey, African Tax Institute, University of Pretoria, Chyi-Yun Huang, World Bank, Patrick Doherty, Consultant, Prof Riel Franzsen, African Tax Institute, University of Pretoria

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Environmental Benefits

- Landslide management
- Monitoring sea-levels and planning mitigation
- Forest management
- Emission-reduction strategies
- Selection of green energy sites
- Optimised land use.
- Efficient waste collection

Vietnam Industrial Development Strategy
"Develop the industrial sector on the basis of green growth, sustainable development and environmental protection"

Sustainable Tourism

Balancing:

- Property rights
- Environment
- Agriculture and ‘Blue’ economy
- Infrastructure development
- Citizen needs

Strategy on Viet Nam’s tourism development until 2020, vision to 2030:
“develop sustainable tourism tied to: cultural values …. environmental protection … landscape preservation ….. security, national defence ……”

“Benefits are cross sector; economic, environmental, social”

Government and revenue

Economic growth/digital economy

Efficiency gains

Enabled citizen

Effective infrastructures and cities

Security and protection of resources

SDG delivery/measurement

Water and health

Disaster response

Managing environment

Ordnance Survey & UK

- Ordnance Survey creates, maintains and distributes detailed GI for Britain
- Data includes Topography, addresses, route networks, terrain, imagery, land use, water networks, geodetic network
- 500 million geospatial features in master map
- 20,000+ changes a day
- Profitable Government Company
- Works internationally

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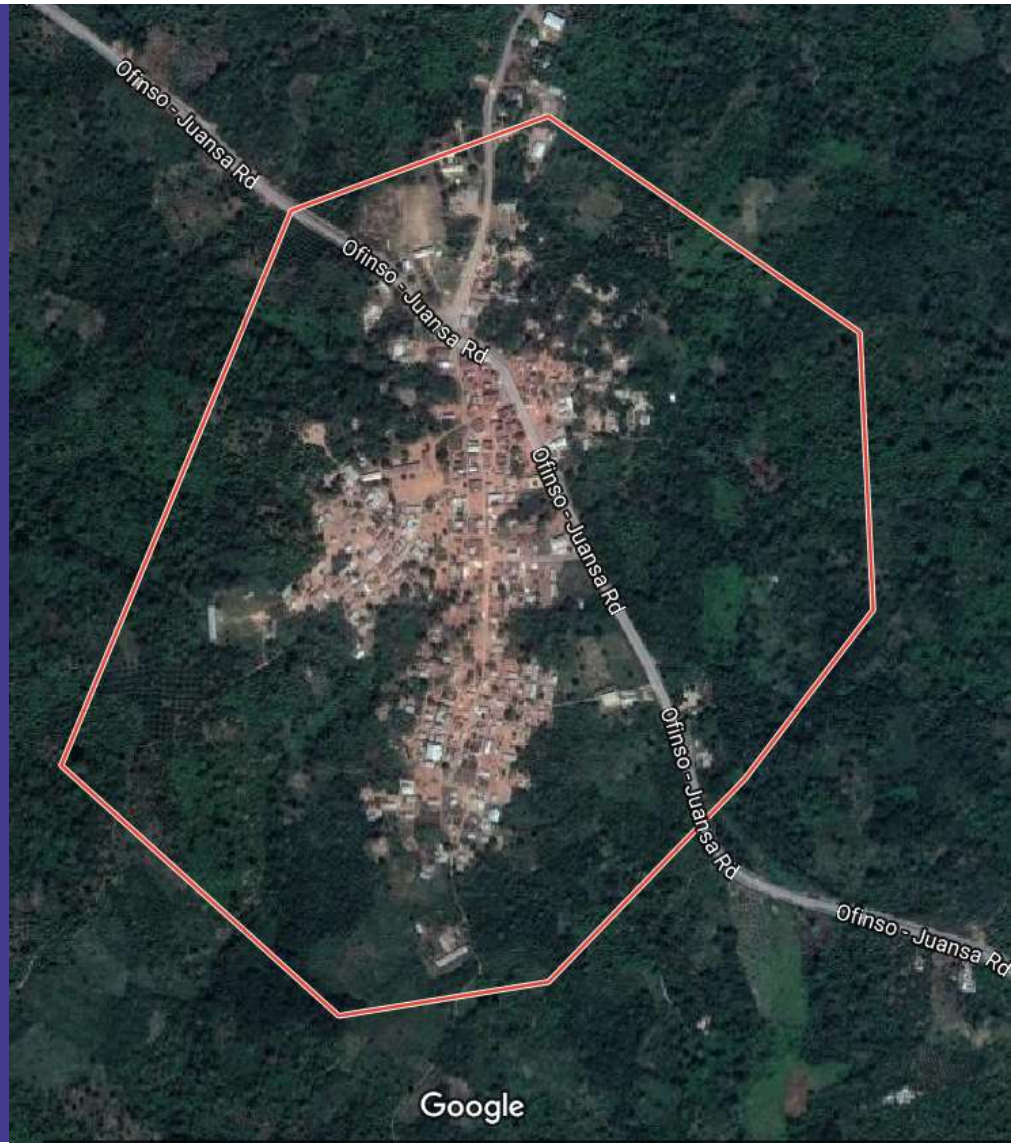
Ghana

- 1960-1990: 1:50,000
- 1993 1:50,000 land use map of the whole country, with data derived from LANDSAT and SPOT.
- 1:2,500 Large scale photogrammetric mapping of about 50 towns and cities
- Not maintained



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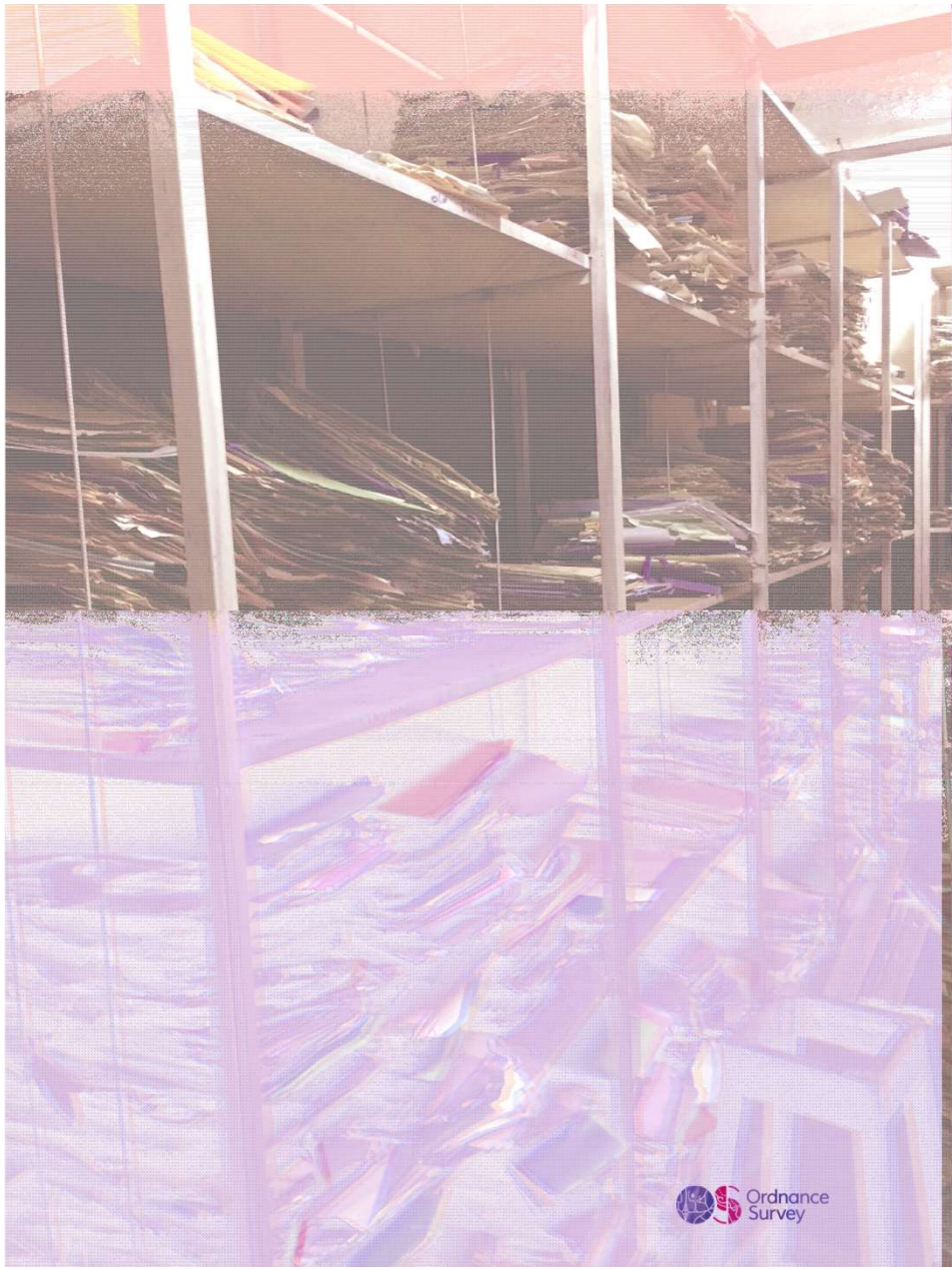
A country in Africa

- Data store



“Are the benefits of geospatial information being achieved?”

Government and revenue

Economic growth/digital economy

Efficiency gains

Enabled citizen

Effective infrastructures and cities

Security and protection of resources

SDG delivery/measurement

Water and health

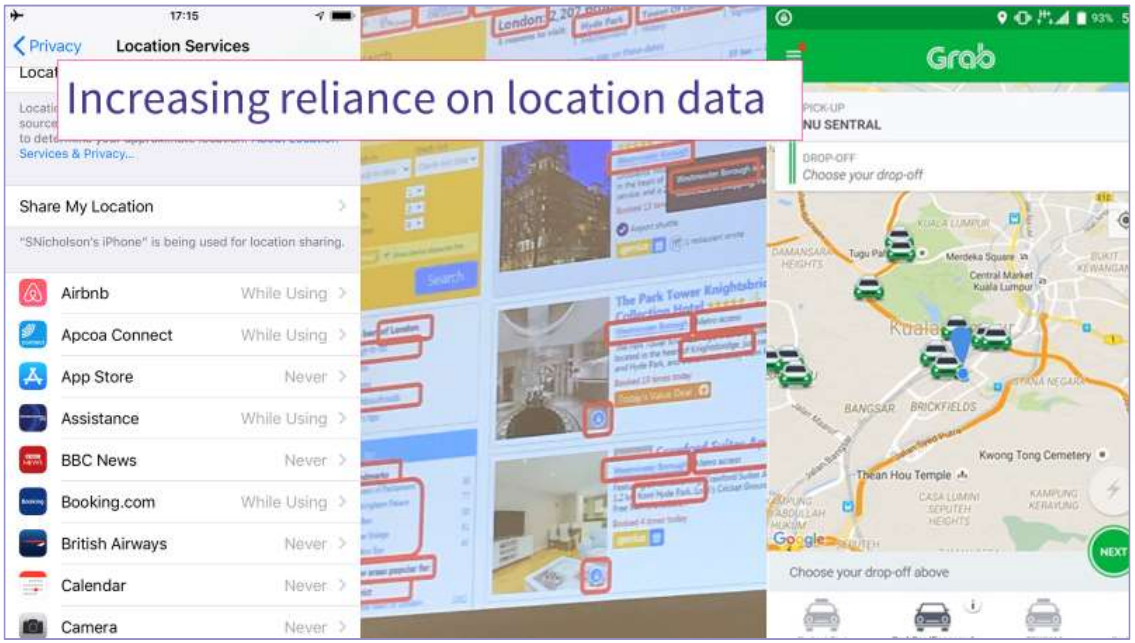
Disaster response

Managing environment

INTEGRATED GEOSPATIAL INFORMATION FRAMEWORK

A STRATEGIC GUIDE TO DEVELOP AND STRENGTHEN NATIONAL GEOSPATIAL INFORMATION MANAGEMENT

Why is it needed?



- Nations are changing
  - E-Government
  - Digital Businesses
  - Smart cities
  - Citizen expectations
  - Future technologies
  - Environmental and disaster concerns
- Many of these capabilities are based on location data (geospatial)
- Digital divide – geospatial divide
- Governments play an enabling role in delivering geospatial capability to a nation

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Bringing it together nationally

Location based approach to data

Community Benefits

Social

Economic

Environmental

Businesses I Government I Citizen I Innovation

Enabling Infrastructure

Geospatial Data I Spatial Data I Sensor Data I Data

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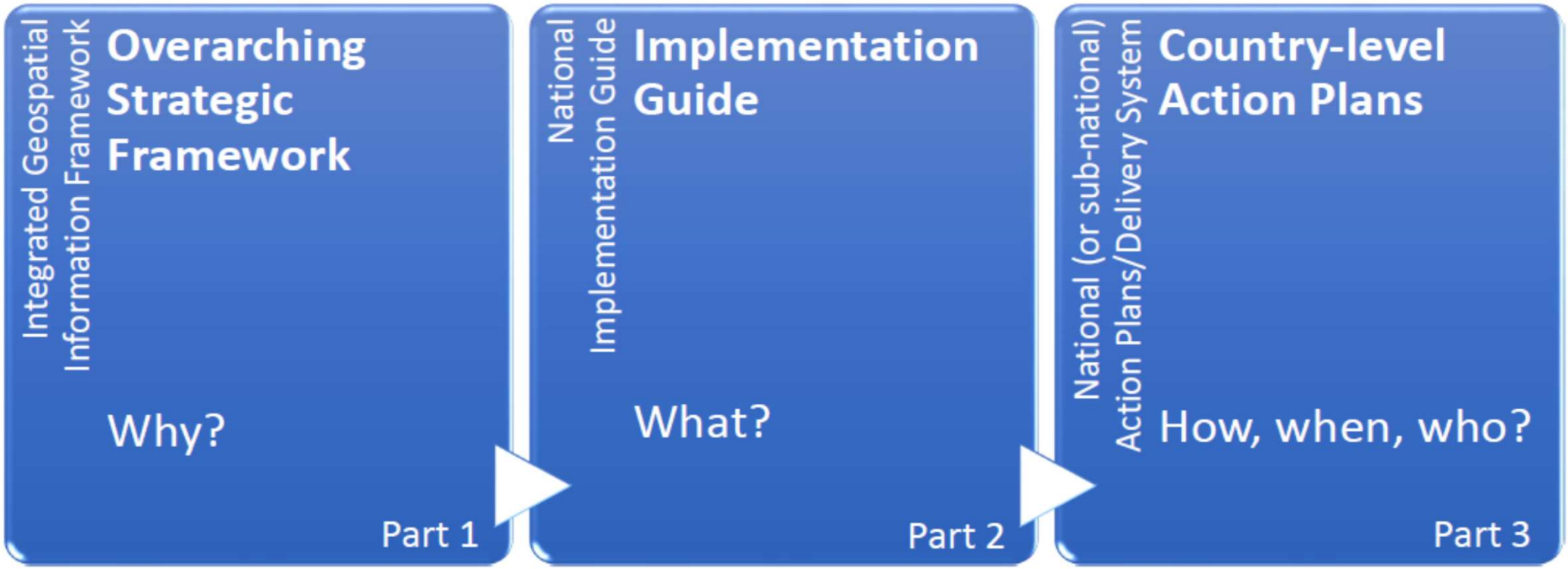
Integrated Geospatial Information Framework



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The Integrated Geospatial Information Framework (IGIF) Vision

The efficient use of geospatial information by all countries to effectively measure, monitor and achieve sustainable social, economic and environmental development – leaving no one behind

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IGIF Strategic Framework Goals

GOAL 1: Effective Geospatial Information Management

GOAL 2: Increased Capacity, Capability, and Knowledge Transfer

GOAL 3: Integrated Geospatial Information Systems and Services

GOAL 4: Economic Return on Investment

GOAL 5: Sustainable Education and Training Programs

GOAL 6: International Cooperation and Partnerships Leveraged

GOAL 7: Enhanced National Engagement and Communication

GOAL 8: Enriched Societal Value and Benefits

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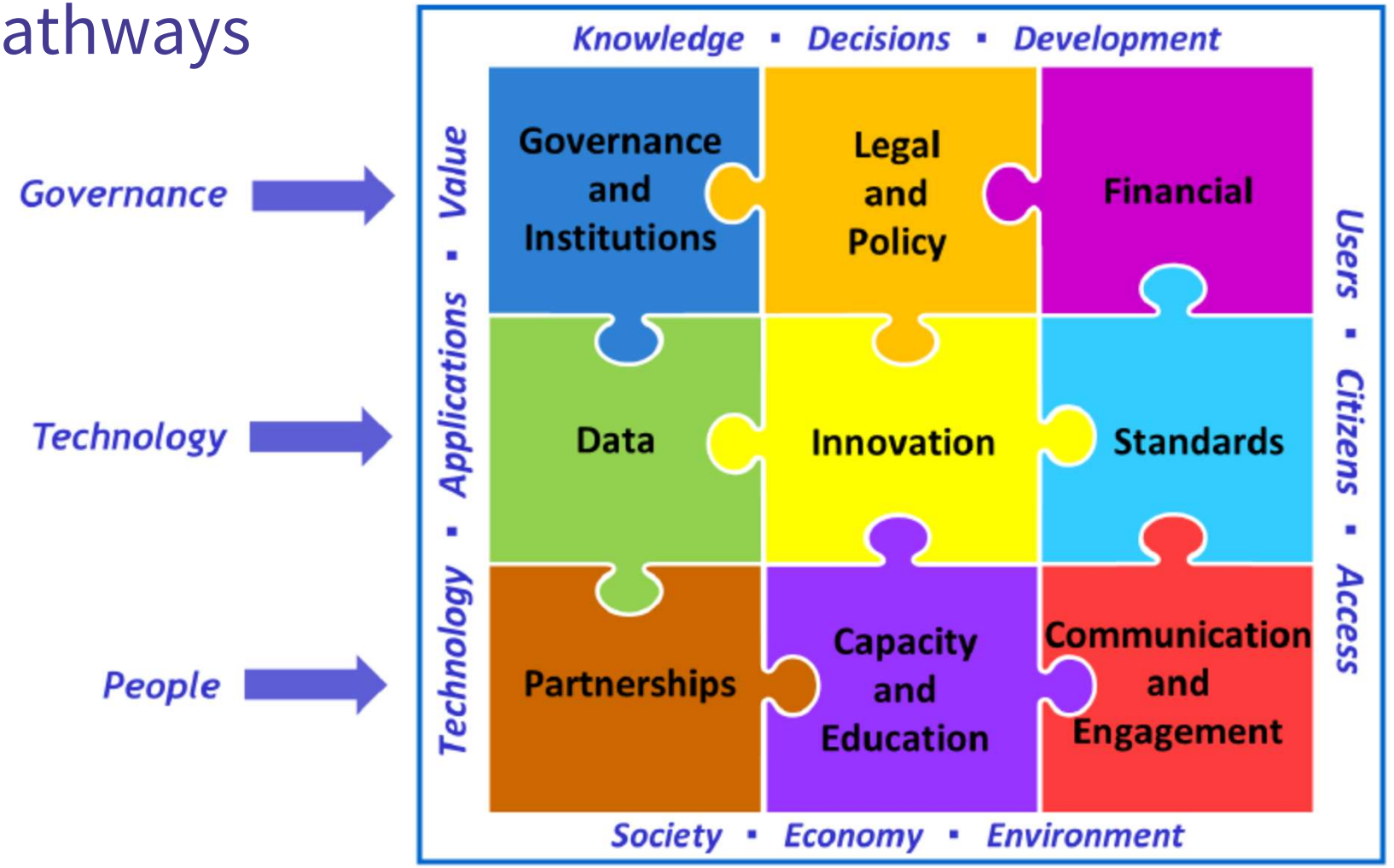
PART 2: IGIF: IMPLEMENTATION GUIDE

9 Strategic Pathways



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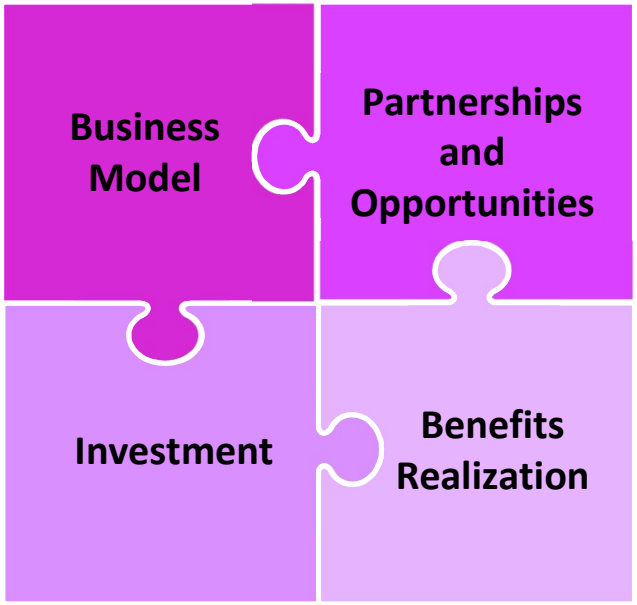
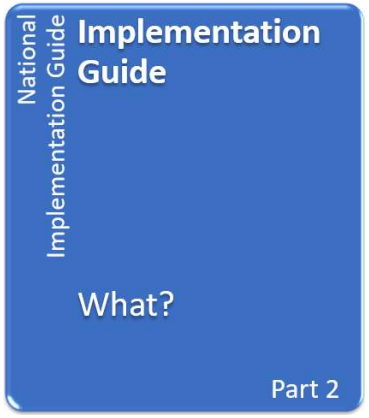
Example: Strategic Pathway 3 - Financial

Establishes the business model, develops financial partnerships, and identifies the investment needs and funding sources for delivering integrated geospatial information management, as well as recognizing the benefits realization milestones that will achieve and maintain momentum.

Objective is to achieve an understanding of the implementation costs and ongoing financial commitment necessary to deliver integrated geospatial information management that can be sustained and maintained in the longer term.

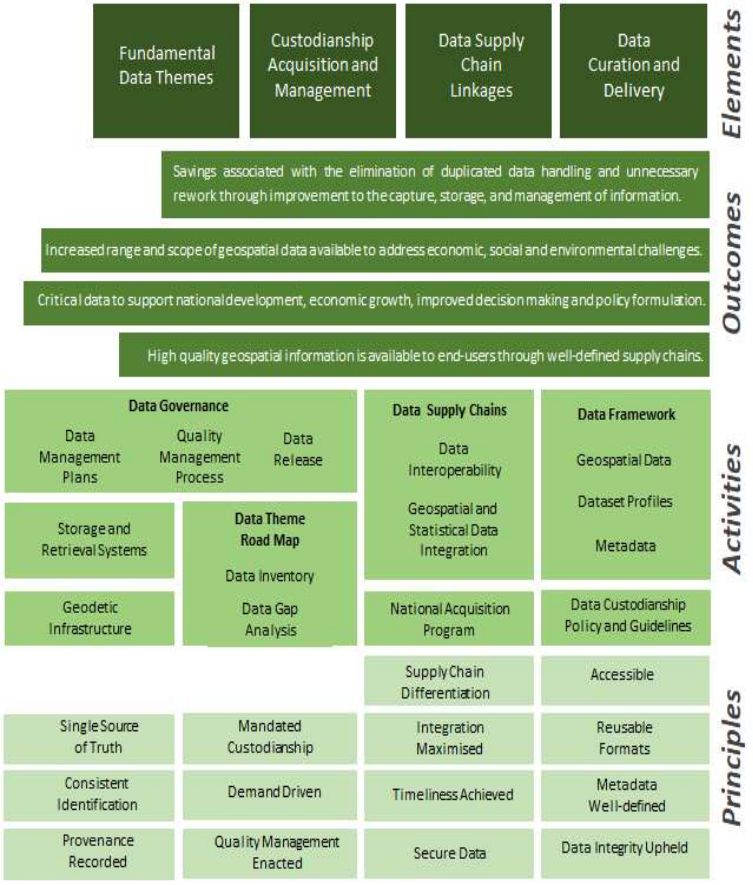


IGIF: Implementation Guide; pathway by pathway



Proposed Pathway chapter Structure

- Abstract
- Summary
- Introduction
- Context and Rationale
- Approach
- Elements
- Principles
- Activities/Actions and Interlinked Activities
- Outcomes/Benefits
- Appendices



Credibility to existing ideas: Fundamental Geospatial Data Themes

Global Geodetic Reference Frame

Geographical Names

Addresses

Functional Areas

Buildings and Settlements

Land Parcels

Transport Networks

Elevation and Depth

Population Distribution

Land Cover and Land Use

Geology and Soils

Physical Infrastructure

Water

Orthoimagery

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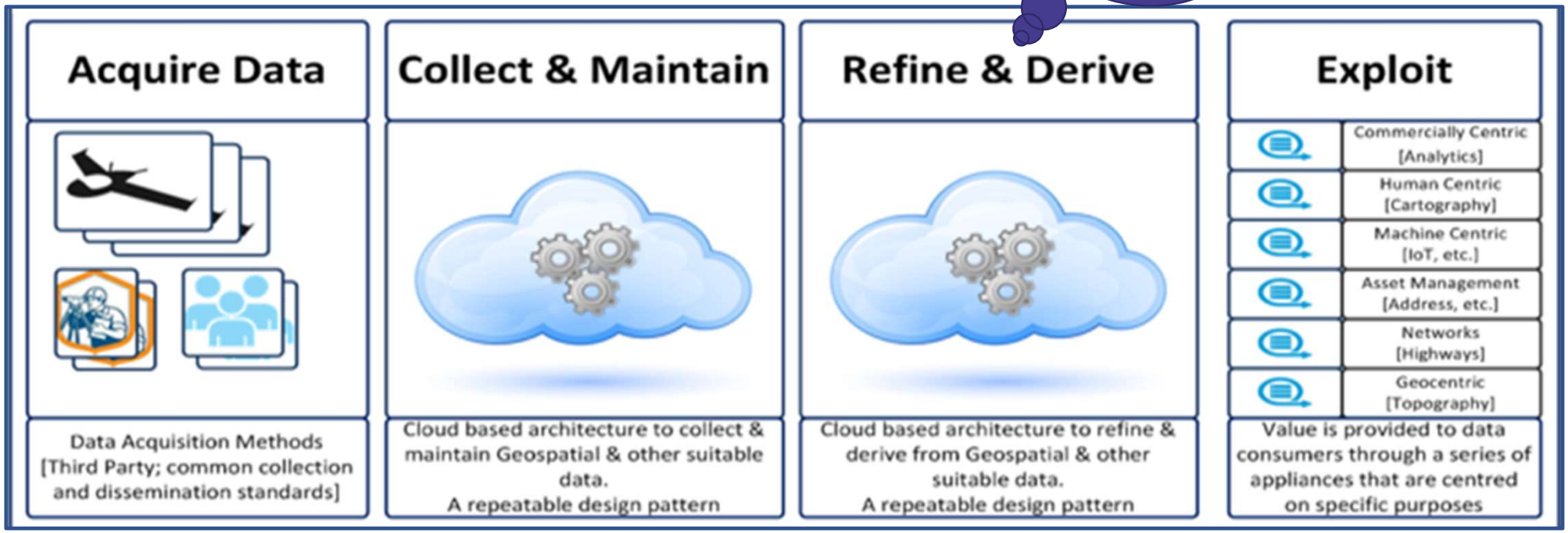
Credibility to new ideas:
For example cloud services

Capacity, capital, skills, technical risk, data currency, connectivity

Innovation



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PART 3: IGIF: COUNTRY-LEVEL ACTION PLANS

Part 3: National Action Plan – theory into practice

Operationalize the Integrated Geospatial Information Framework will be done through **country level Action Plans,** *linking to* ***government national priorities***, ***analysing socio-economic benefits*** *and* ***identifying financing*** *for implementation.*

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Part 3: National Action Plan

Geospatial Maturity

- Current State
- National Priorities
- Future State

Action Plan

- Agencies involved
- Objectives
- Outcomes expected
- Activities
- Deliverables
- Timeframe
- Operational considerations
- Risks and mitigation
- Budget and funding

Geospatial Value Assessment

- Economic value
- Government revenue
- Social value
- Environmental value
- Political value
- Digital innovation
- National and Local

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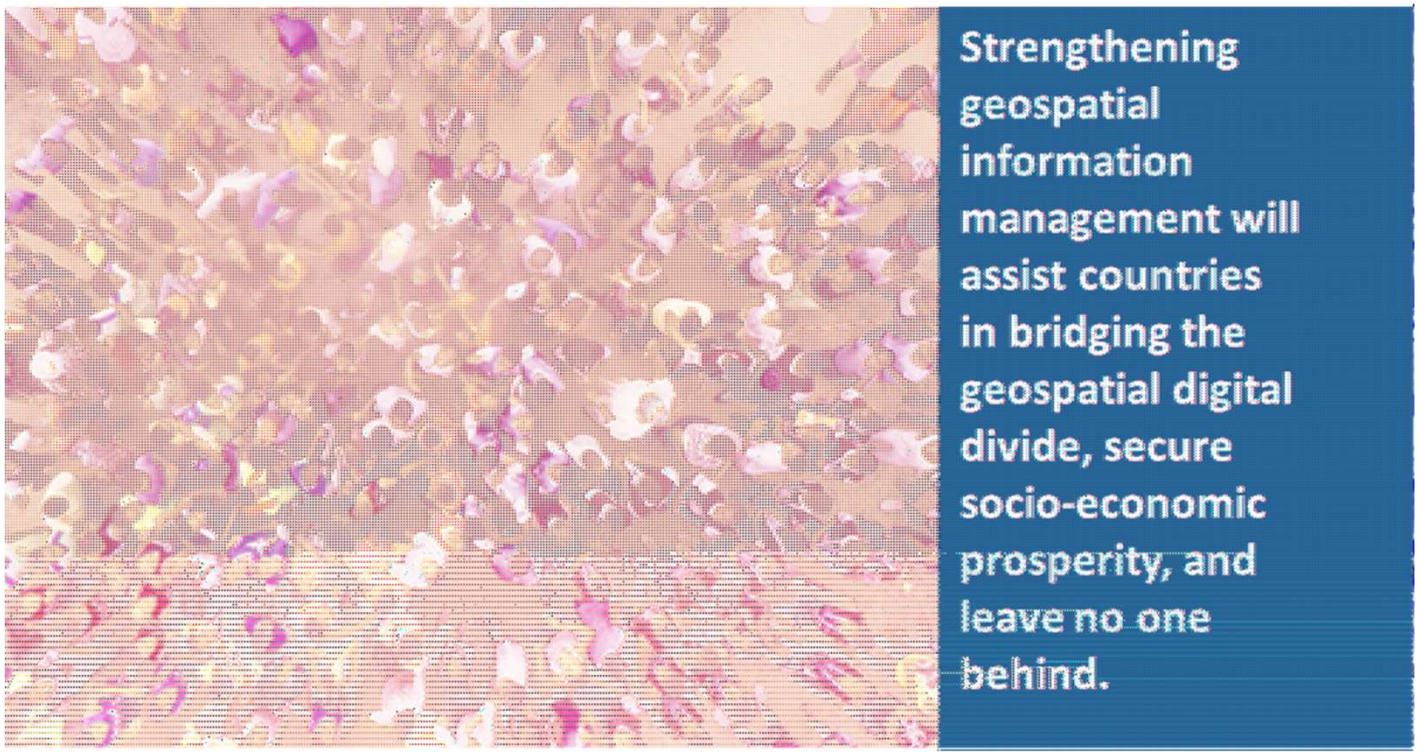
Summary



The **Integrated Geospatial Information Framework** can be used to establish national geospatial information management arrangements or to improve them. It can also be used to coordinate activities to achieve alignment between existing national agency capabilities and infrastructures.

UN GGIM HIGH LEVEL FORUM

20-22 APRIL 2020, UNITED KINGDOM

IGIF PART 2: IMPLEMENTATION GUIDE RELEASED

(ALSO: CAMBRIDGE CONFERENCE: 22-14 APRIL 2020)

Thank You

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