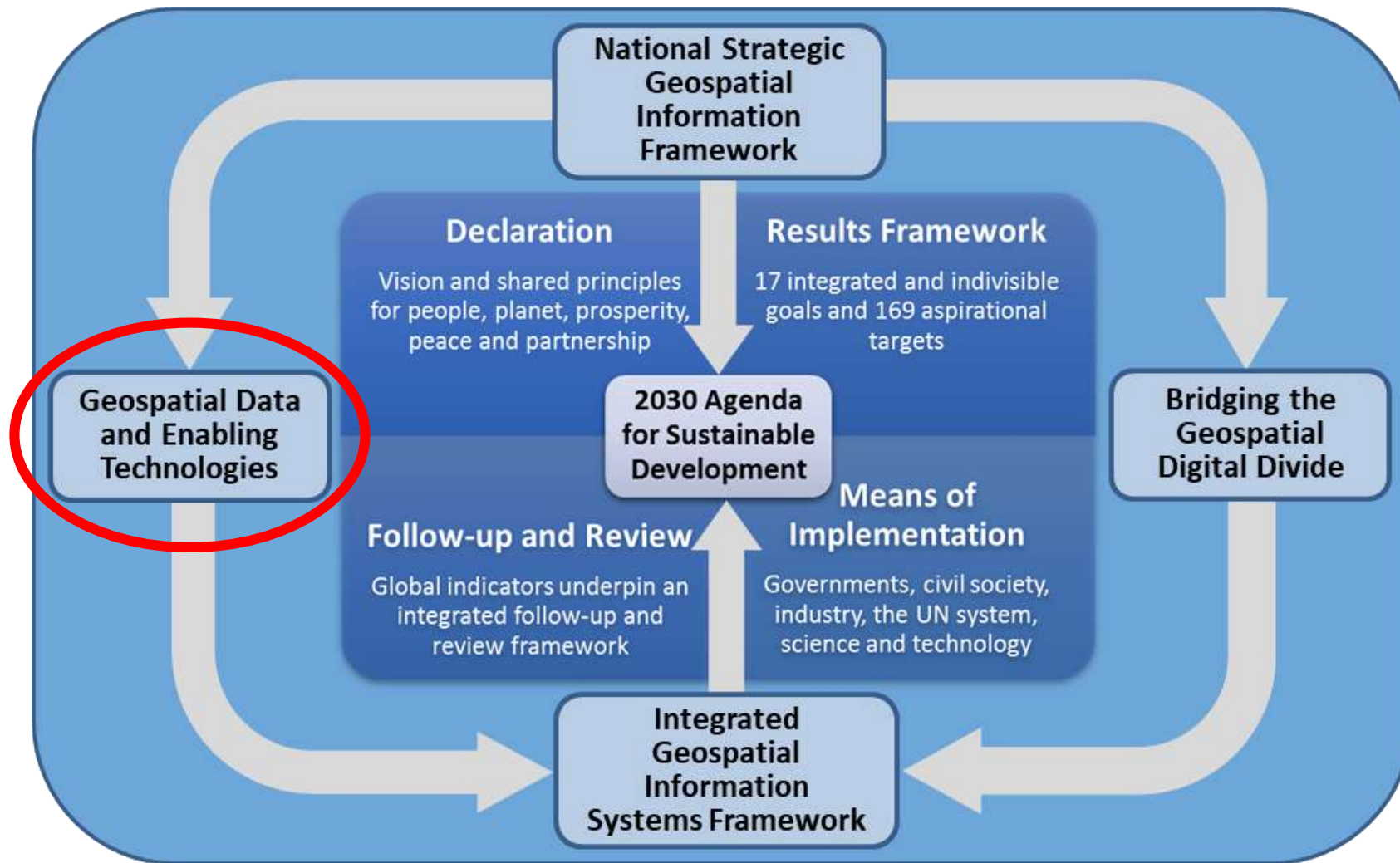


First International Workshop on Operationalizing the Integrated Geospatial Information Framework
9 - 11 September 2019, Celso Furtado Conference Room, ECLAC, Santiago, Chile

The IGF: Improving and strengthening NSDIs and geospatial information management capacities

Greg Scott, UN-GGIM Secretariat
Environmental Statistics and Geospatial Information Branch
United Nations Statistics Division
Department of Economic and Social Affairs
United Nations, New York



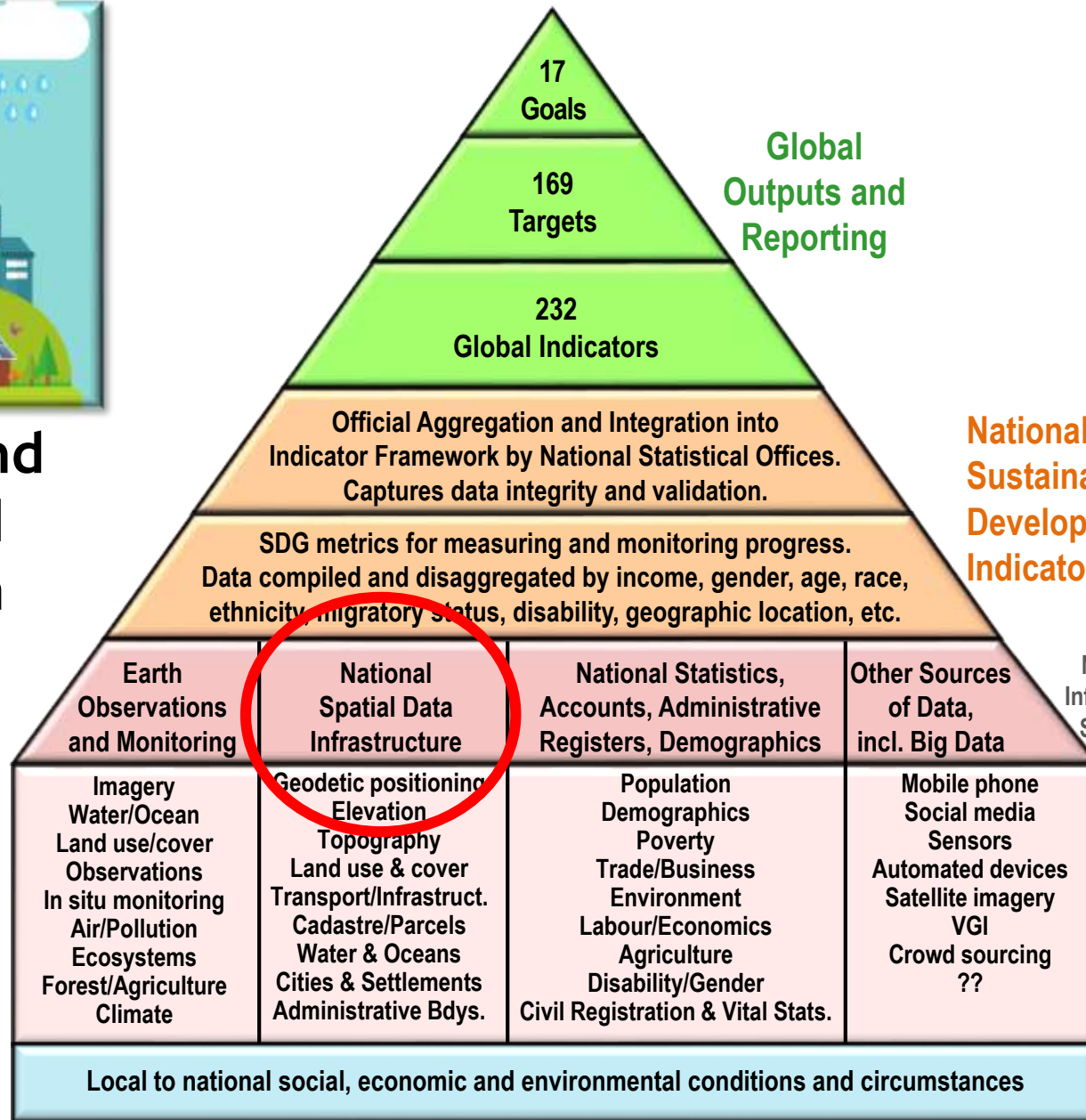


Framed by the 2030 Agenda for Sustainable Development, this figure presents the major components that will assist our efforts in charting a geospatial roadmap towards nationally integrated geospatial information management for evidence-based policies and decisions for the wellbeing of people and planet.





An integrative and interconnected data ecosystem



There needs to be more institutional collaboration, coordination and integration across the various national data frameworks, information systems and platforms.



The NSDI approach...origins in the 1990s

- Coordinated actions that promote the awareness and implementation of complimentary policies, common standards and institutional arrangements for the development and availability of interoperable digital geographic data and technologies to support decision making at all scales for multiple purposes.
- The NSDI of a country can be generally defined as a framework of policies, standards, technology and institutional arrangements that facilitate data providers to publish and users to access and integrate, distributed heterogeneous geospatial information.
- A long-standing and well understood enabling infrastructure to provide the ‘institutionally’ coordinated policies, common standards, arrangements, and effective mechanisms for the development and availability of interoperable geospatial information at multiple levels of government.



Developing Spatial Data Infrastructures:

The SDI Cookbook

Spatial Data Infrastructures

The term "Spatial Data Infrastructure" (SDI) is often used to denote the relevant base collection of technologies, policies and institutional arrangements that facilitate the availability of and access to spatial data. The SDI provides a basis for spatial data discovery, evaluation, and application for users and providers within all levels of government, the commercial sector, the non-profit sector, academia and by citizens in general.

The word infrastructure is used to promote the concept of a reliable, supporting environment, analogous to a road or telecommunications network, that, in this case, facilitates the access to geographically-related information using a minimum set of standard practices, protocols, and specifications. The applications that run "on" such an infrastructure are not specified in detail in this document. But, like roads and wires, an SDI facilitates the conveyance of virtually unlimited packages of geographic information.



The NSDI approach...today

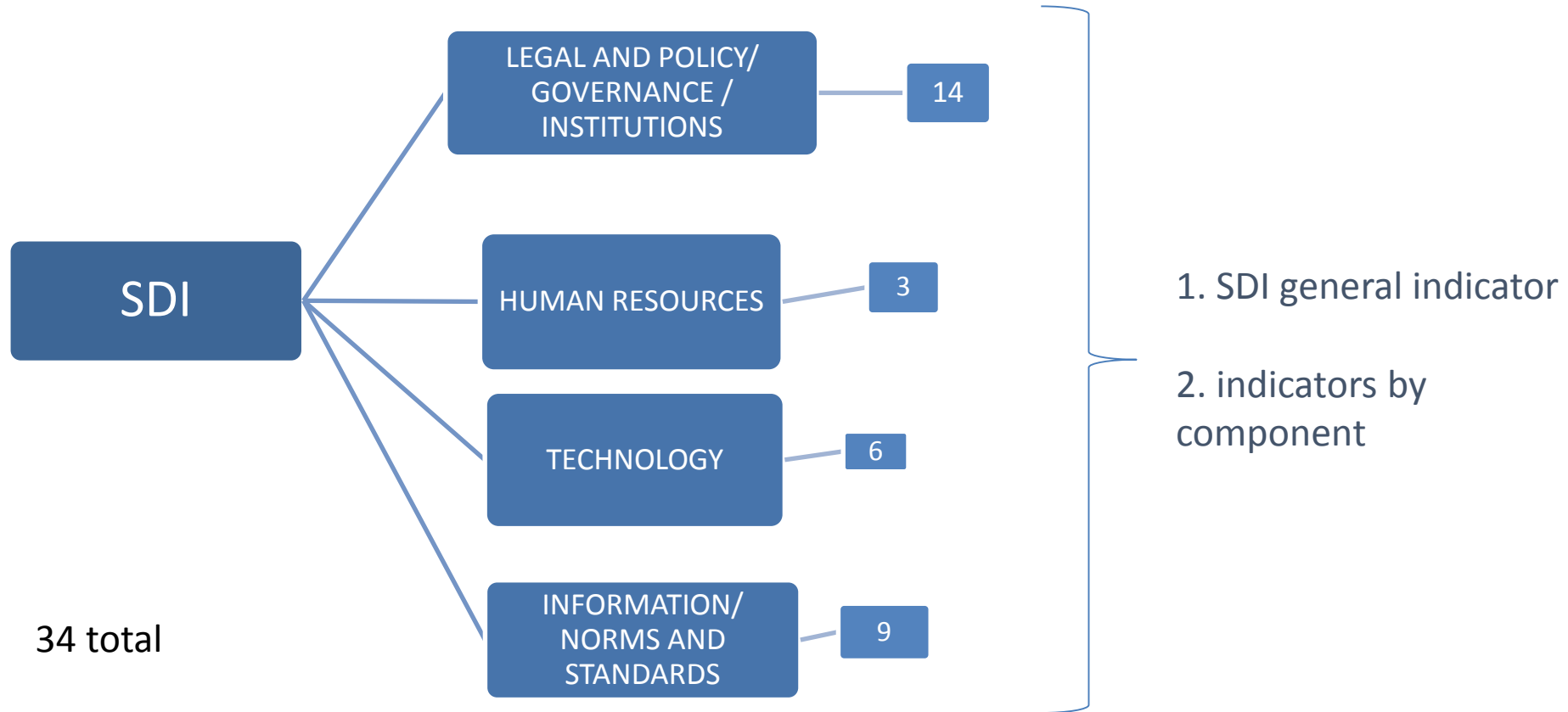
- Virtues of NSDIs are their ability to promote geospatial data sharing throughout all levels of government and society, enabling effective use of geospatial data for sustainable national development and other every day requirements.
- Two factors challenge the limitations of a traditional NSDI:
 1. The availability of more data and more data types. Big data, structured and unstructured data, and other realities pressure the current limitation of NSDI as more of these external data add potential value to everyday queries for information. Some data are geospatially referenced while others are not, which identifies a need for geolocation information.
 2. The need for data integration and analysis. Traditional NSDIs are very structured (silo) repositories of valuable geospatial information, with defined and managed (separate) data themes, such as transport, elevation and depth, boundaries, addresses, water, etc. These assets now must meet diverse and specific local and national requirements and need to be ‘integrated’ with other data (especially statistics) and sectors.



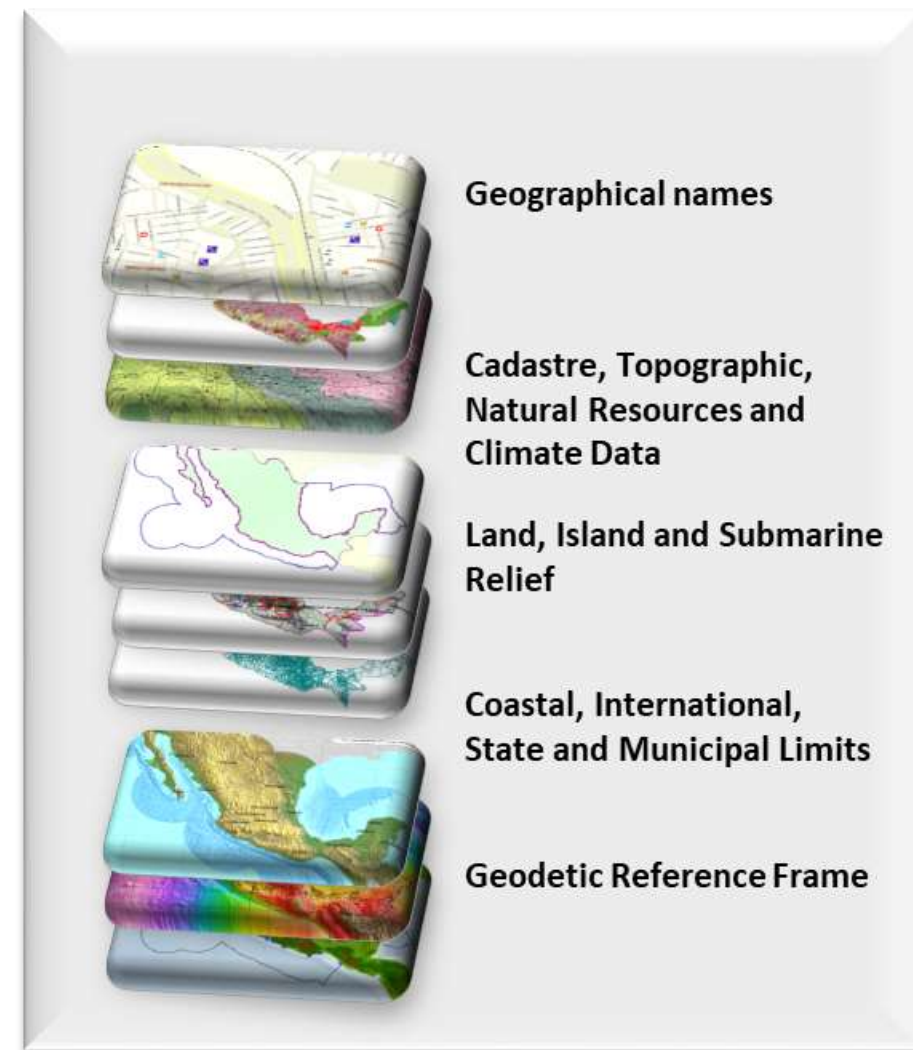
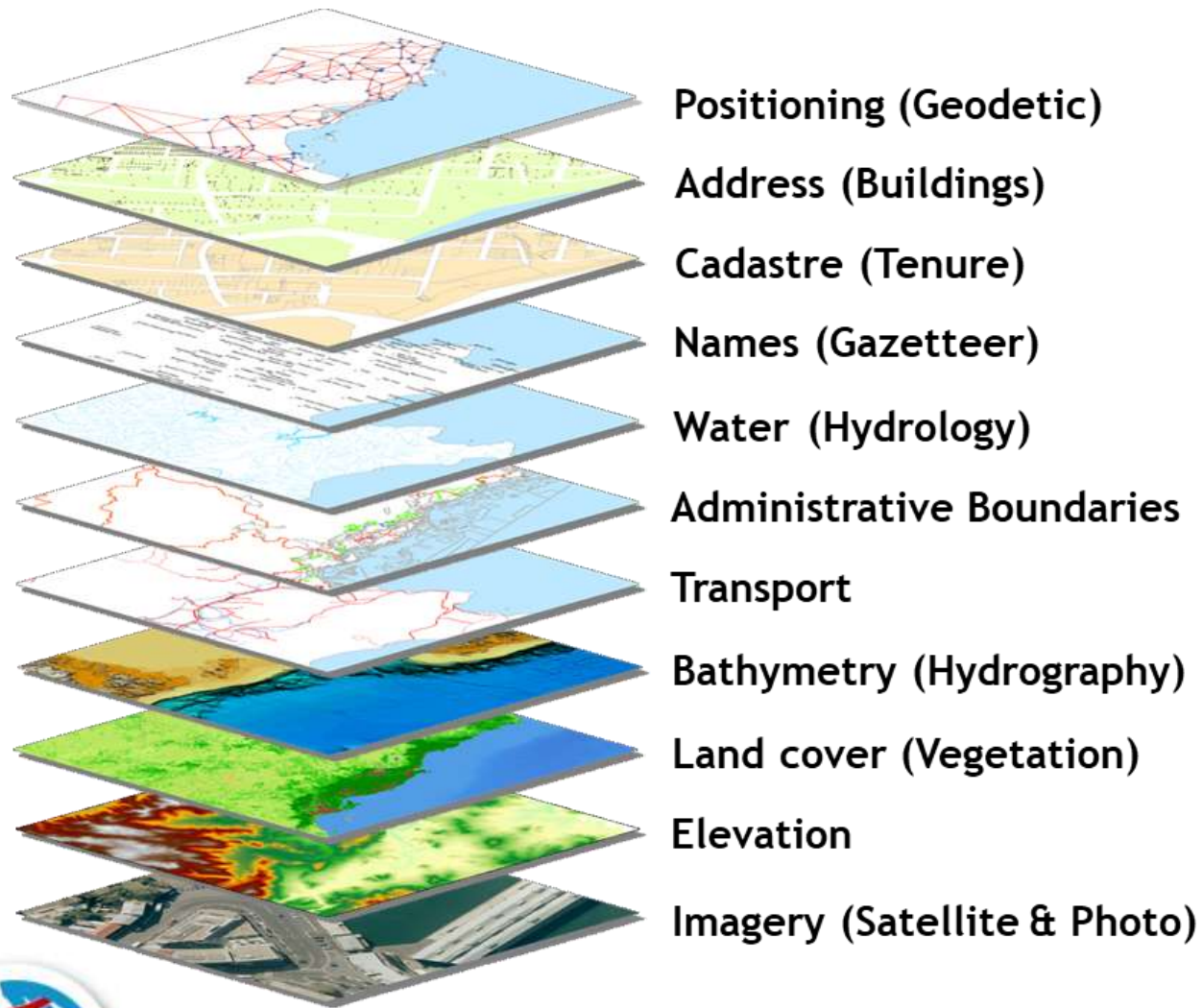
Examples

How many digital data is available for viewing on the platform of the Geospatial Data Infrastructure in your country?

Structure of the survey Components



Global fundamental geospatial data themes



Goals, targets, indicators, measuring...fundamental data



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



UN-GGIM

United Nations Secretariat
Global Geospatial Information Management

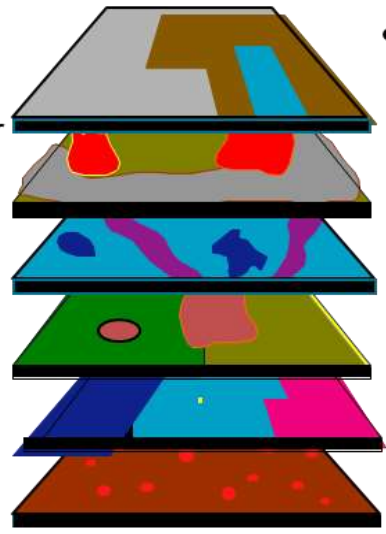
Positioning geospatial information to address global challenges

ggim.un.org



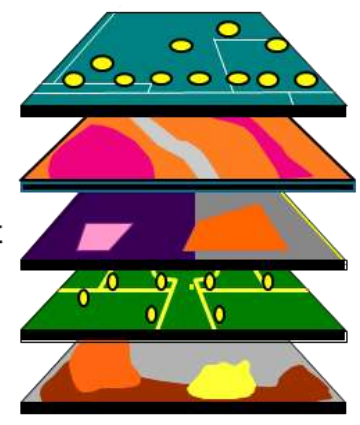
High quality, timely and reliable data

Geodetic
Elevation
Water/Ocean
Land use/cover
Transport
Cadastre
Population
Infrastructure
Settlements
Admin. Bdys.
Imagery
Geology/soils
Observations
etc.

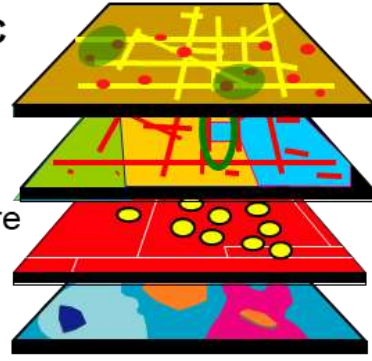


National Spatial Data Infrastructure

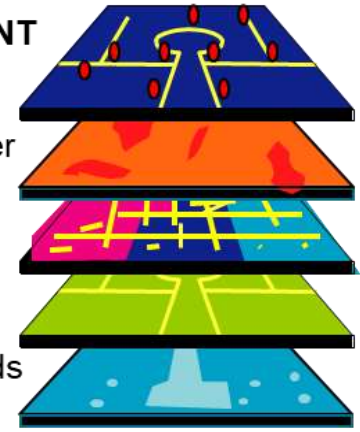
SOCIAL
Society
Poverty
Education
Health
Population
Employment
Water
Sanitation
Equality
Gender
Governance



ECONOMIC
Well-being
Cities
Water
Energy
Infrastructure
Industry
Sanitation
Economy



ENVIRONMENT
Water
Seas/oceans
Land use/cover
Ecosystems
Forests
Agriculture
Climate
Biodiversity
Natural hazards
Pollution



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The NSDI approach...with the IGIF

- The principal focus of NSDIs is geospatial data. What is needed to establish or maintain an integrated national geospatial program is not sufficiently addressed by the NSDI.
- While an NSDI is a core and valuable component, a national geospatial program is much more than the data. The Integrated Geospatial Information Framework (IGIF) defines each of the interrelated 9 strategic pathways required for an integrated national geospatial program.
- Building on the existing benefits and practices of NSDIs. The IGIF is more comprehensive than the traditional efforts of NSDIs.
- What is the driver for why we have the IGIF rather than the NSDI? More diverse data types and needs that are now more relevant and dependent on geospatial data than were originally considered. This is a reflection of both technology evolution and the new and emerging data ecosystem that is more dependent on “location” and “integration”.

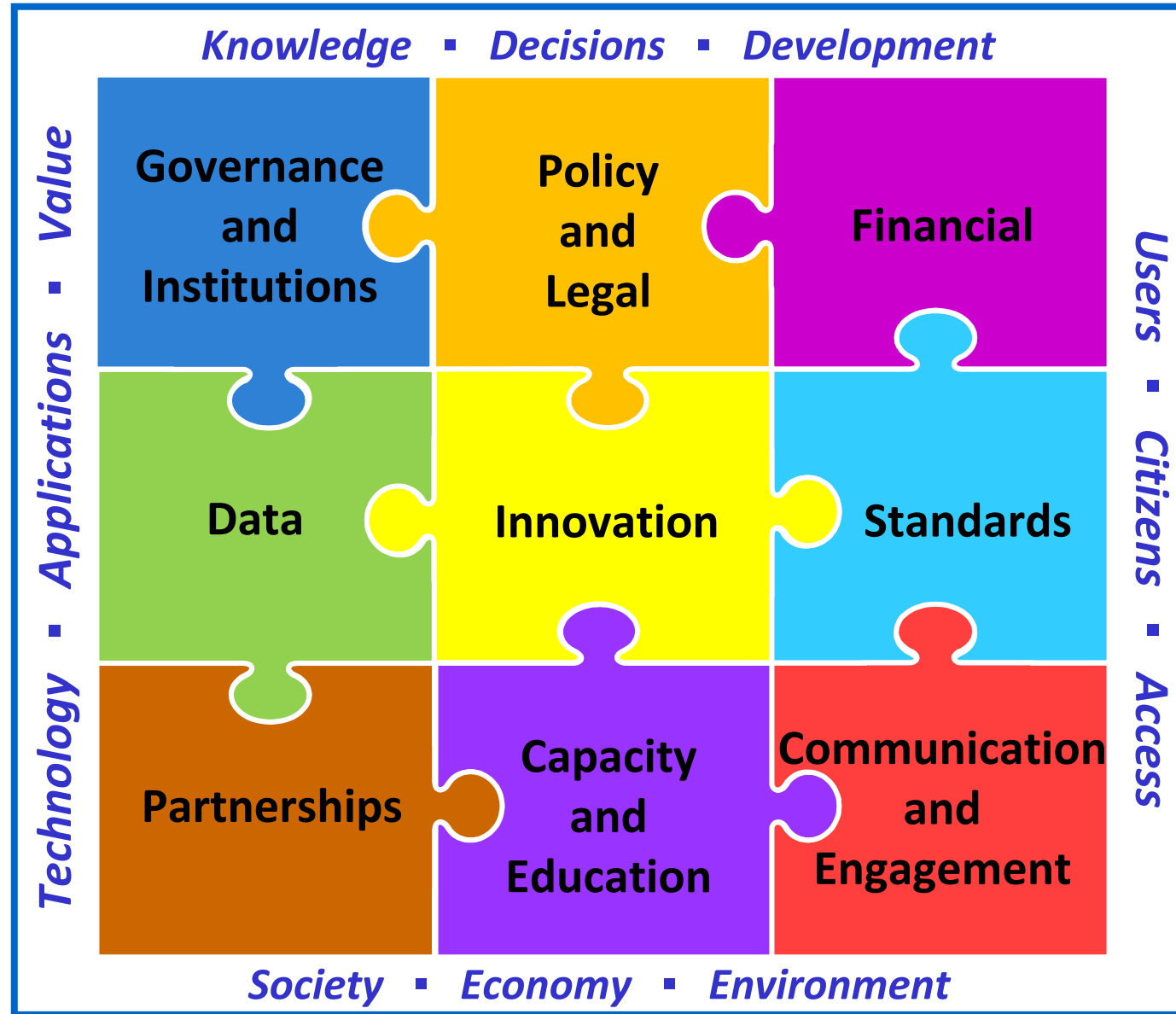


9 Strategic Pathways

Governance →

Technology →

People →



Anchored by 9 Strategic Pathways, the Framework is a mechanism for articulating and demonstrating national leadership in geospatial information, and the capacity to take positive steps.

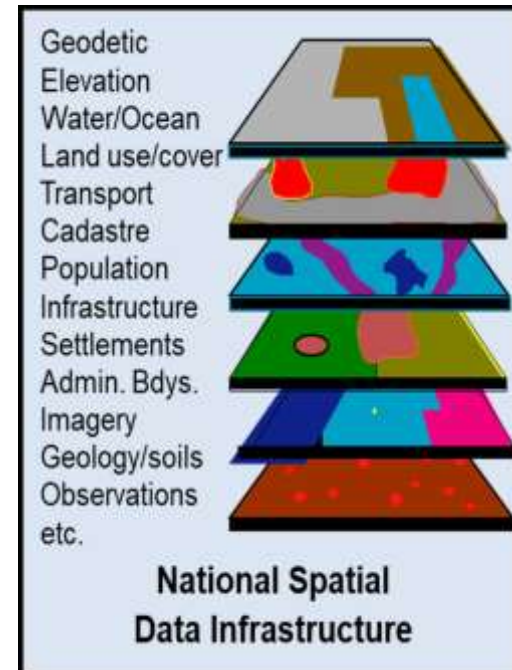
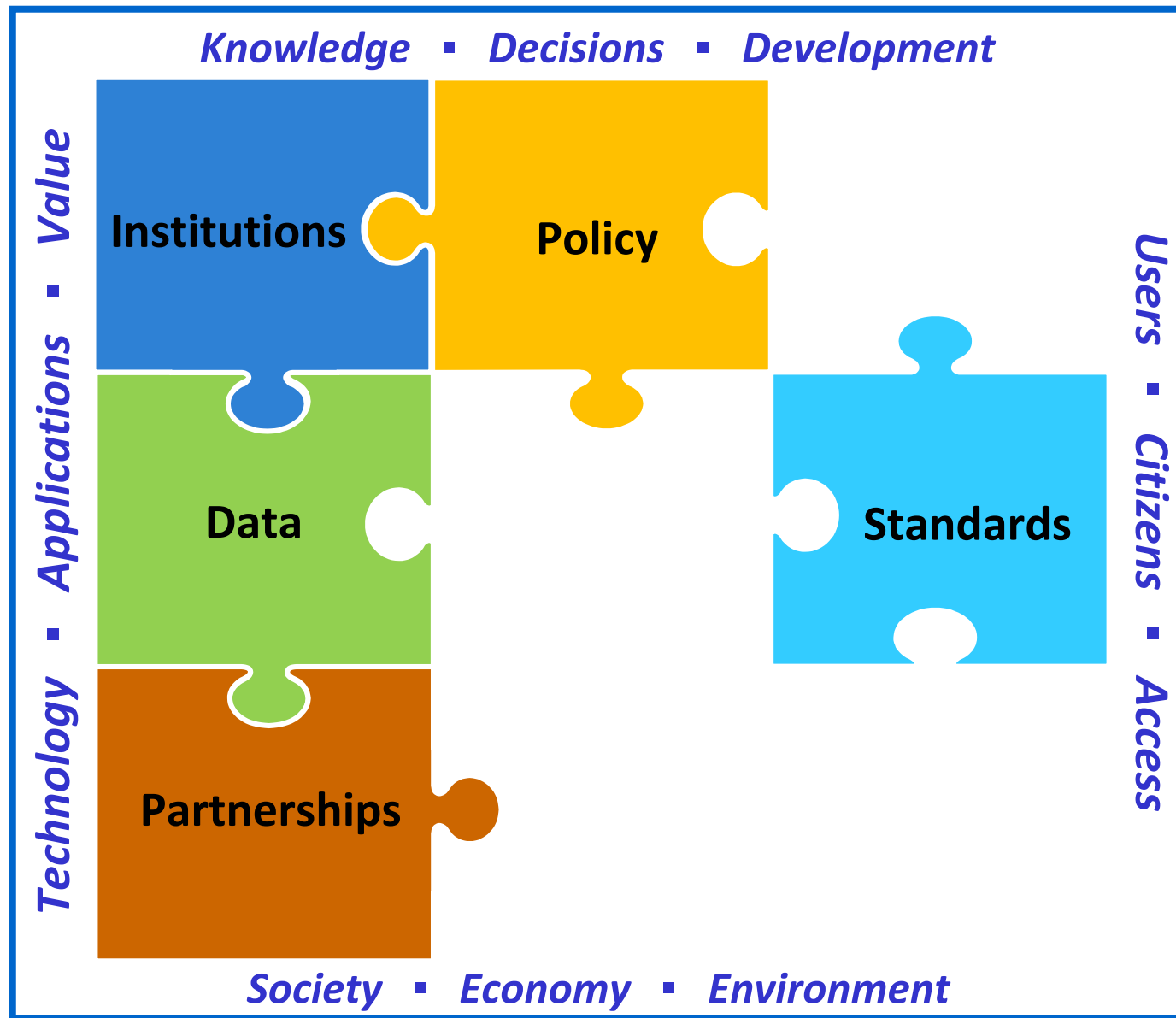


9 Strategic Pathways

Governance →

Technology →

People →



“The technology, policies, standards, human resources and related activities to acquire, process, distribute, use, maintain and preserve spatial data” (OMB 2002).

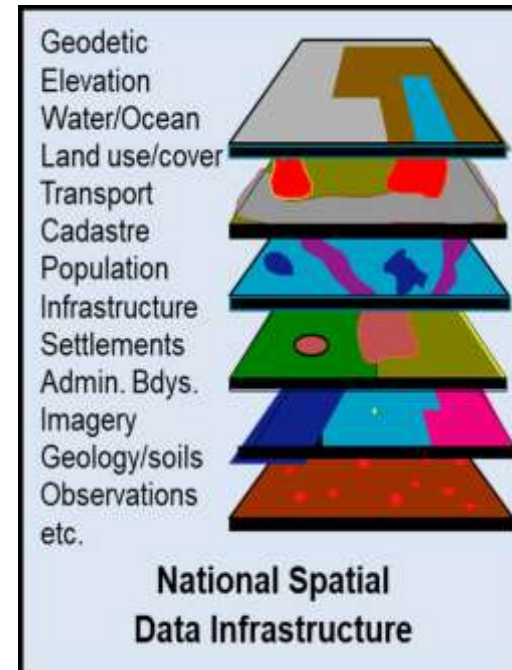
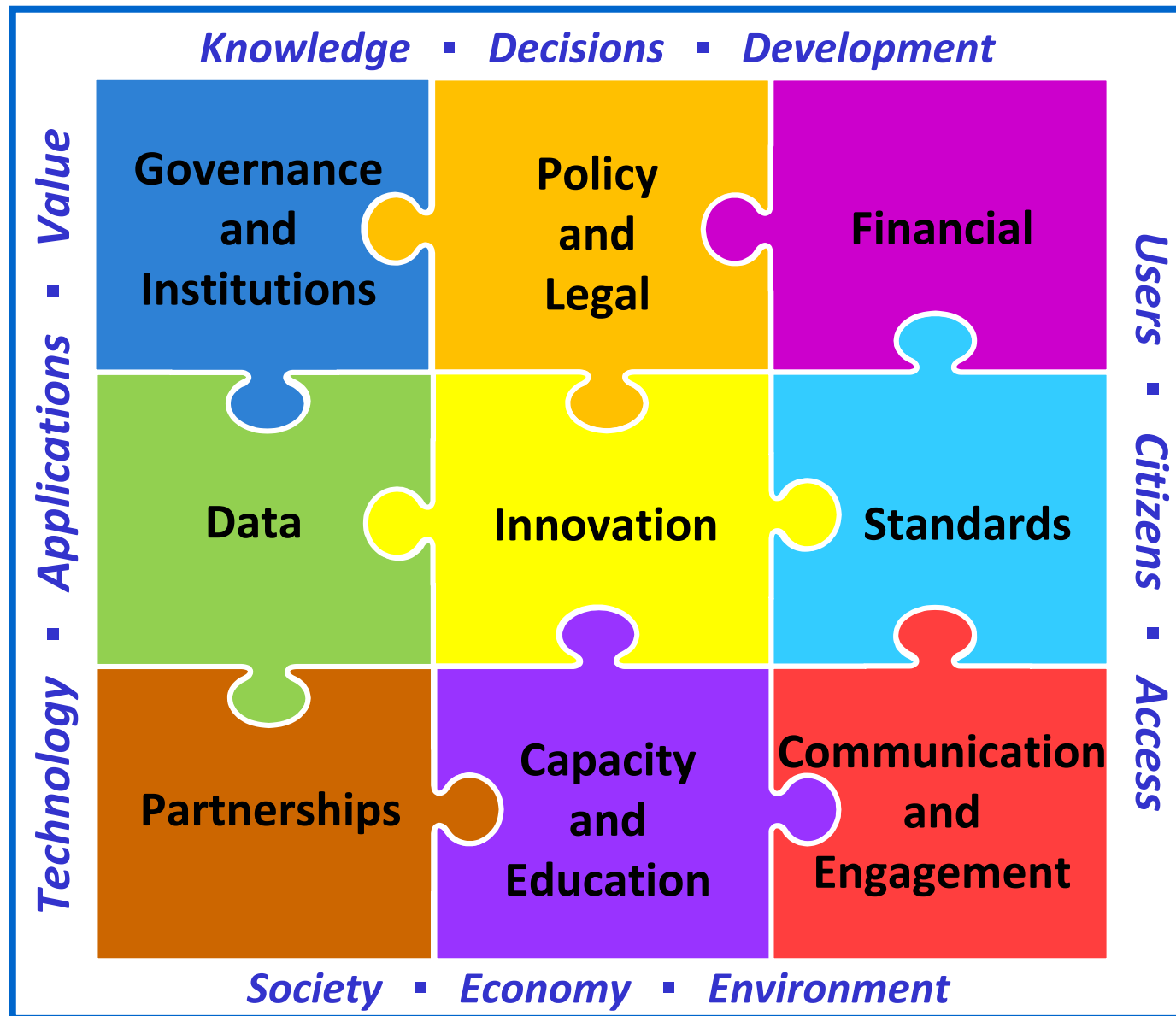


9 Strategic Pathways

Governance →

Technology →

People →



The Framework will augment and build upon existing NSDI arrangements, providing a holistic, integrated national information system-of-systems approach to the data life cycle



The NSDI approach...with the IGF

“African countries are lagging behind, thus widening the ‘Geospatial Digital Divide’. The main reason for the failure to date is believed to be the approach considered in the previous studies, which focused mainly on a bottom-up approach with geospatial information organizations and professionals attempting to take the lead in NSDI implementation.

This has created, to a large extent, a situation of geospatial organizations and professionals talking to themselves, rather than involving the high level decision-making political organs of government from the start.”

Sultan Mohammed, Chair of UN-GGIM Africa, April 2018

