



Development of Contextual Understanding, Information and Analytics Towards Determining the National Geospatial Information Ecosystem

Ananya Narain

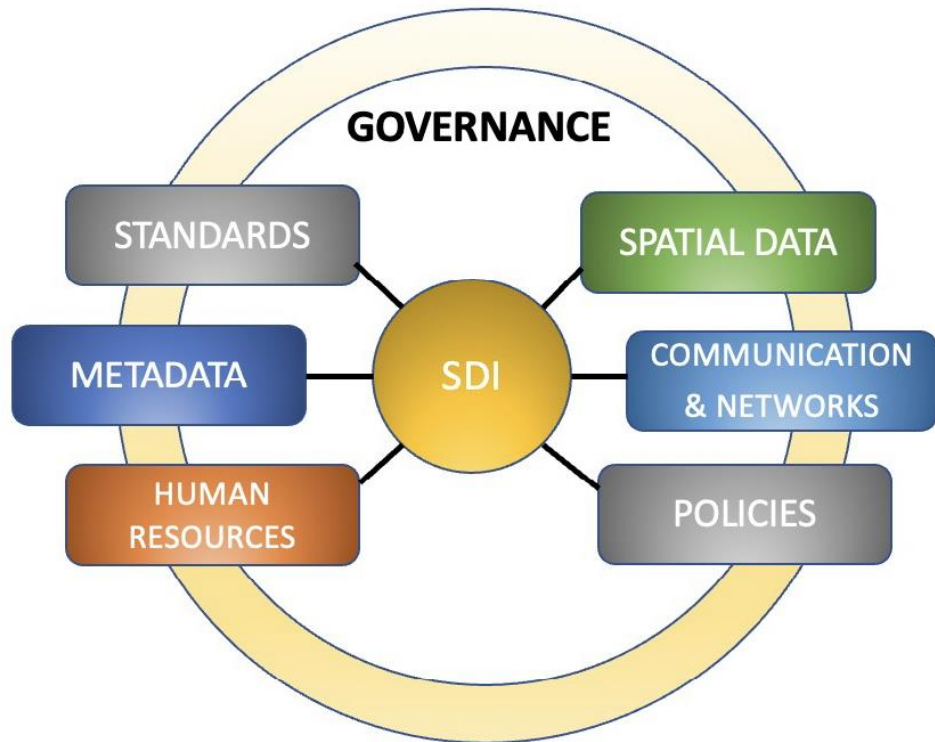
2nd August 2022

UNGGIM – Twelfth Session

Side Event – Future of Geospatial
Ecosystem

CONCEPTS AND FRAMEWORKS

SPATIAL DATA INFRASTRUCTURE (SDI/NSDI)

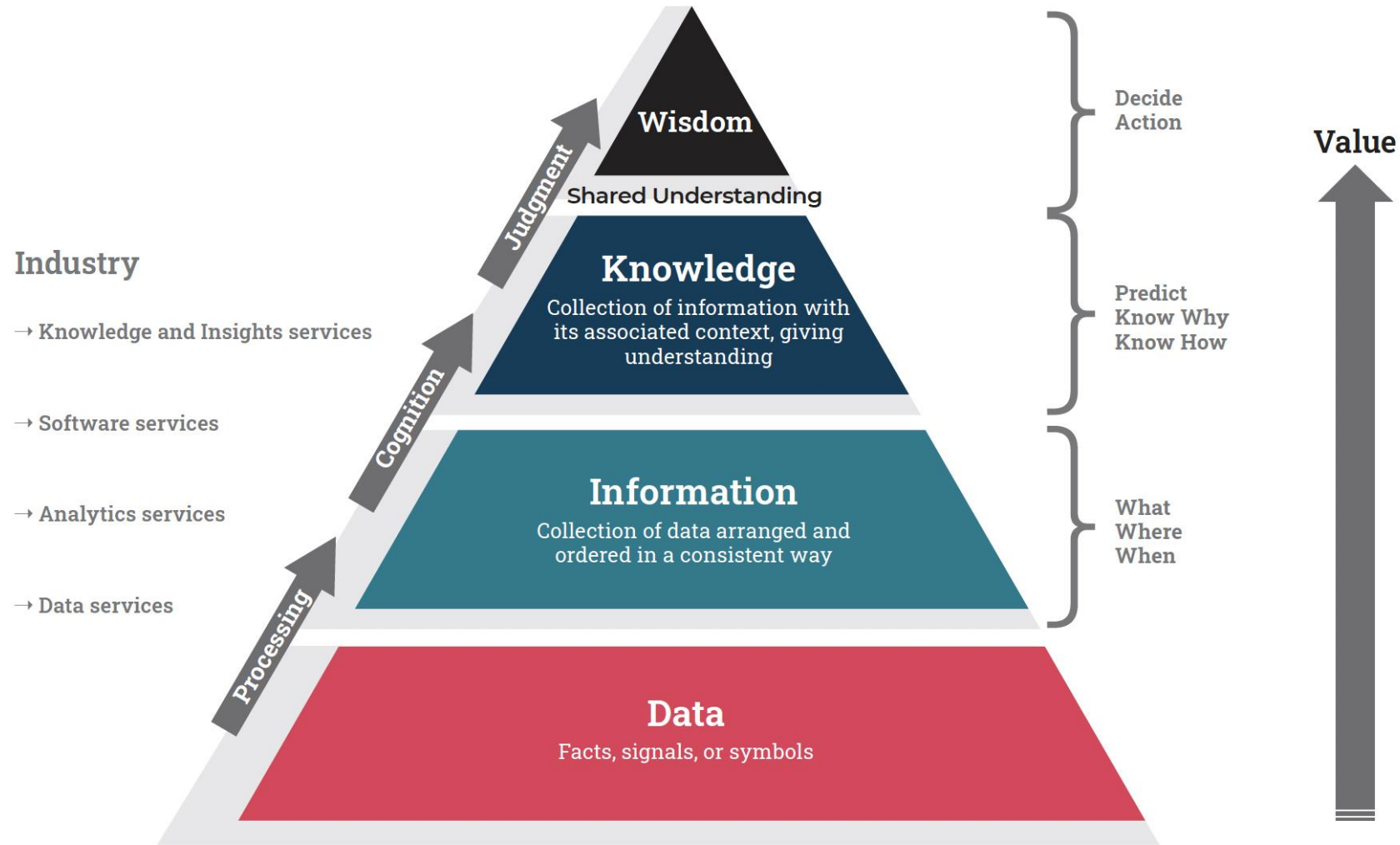


GEOSPATIAL KNOWLEDGE INFRASTRUCTURE (GKI)



THE KNOWLEDGE PARADIGM

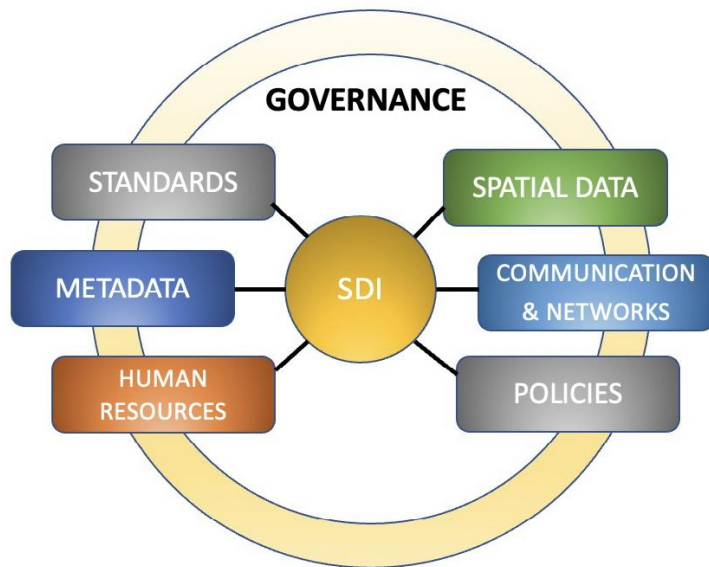
The Knowledge Management Cognitive Pyramid demonstrates the relationship between data and knowledge. 4IR technology increasingly enable knowledge to be generated 'automatically', improving decision making and adding value.



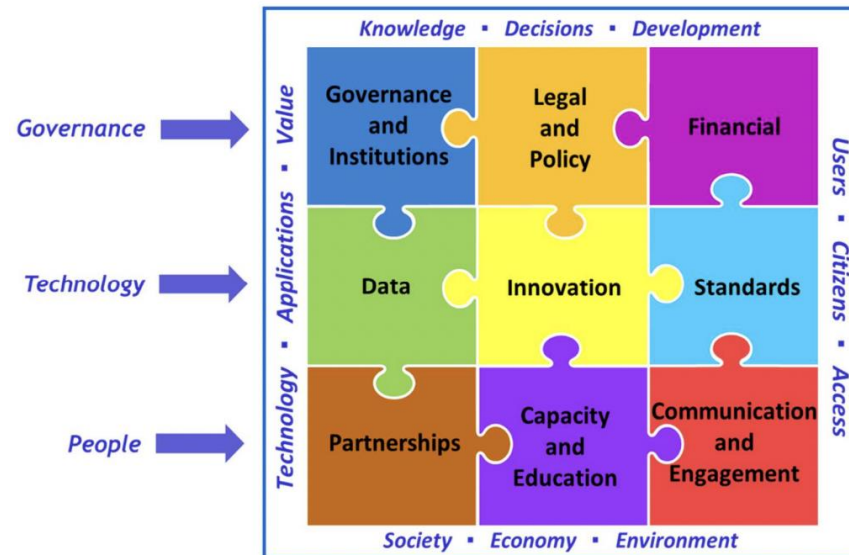
Source: Adapted from DIKW Model for Knowledge Management and Data Value Extraction

CONCEPTS AND FRAMEWORKS

SPATIAL DATA INFRASTRUCTURE (SDI/NSDI)



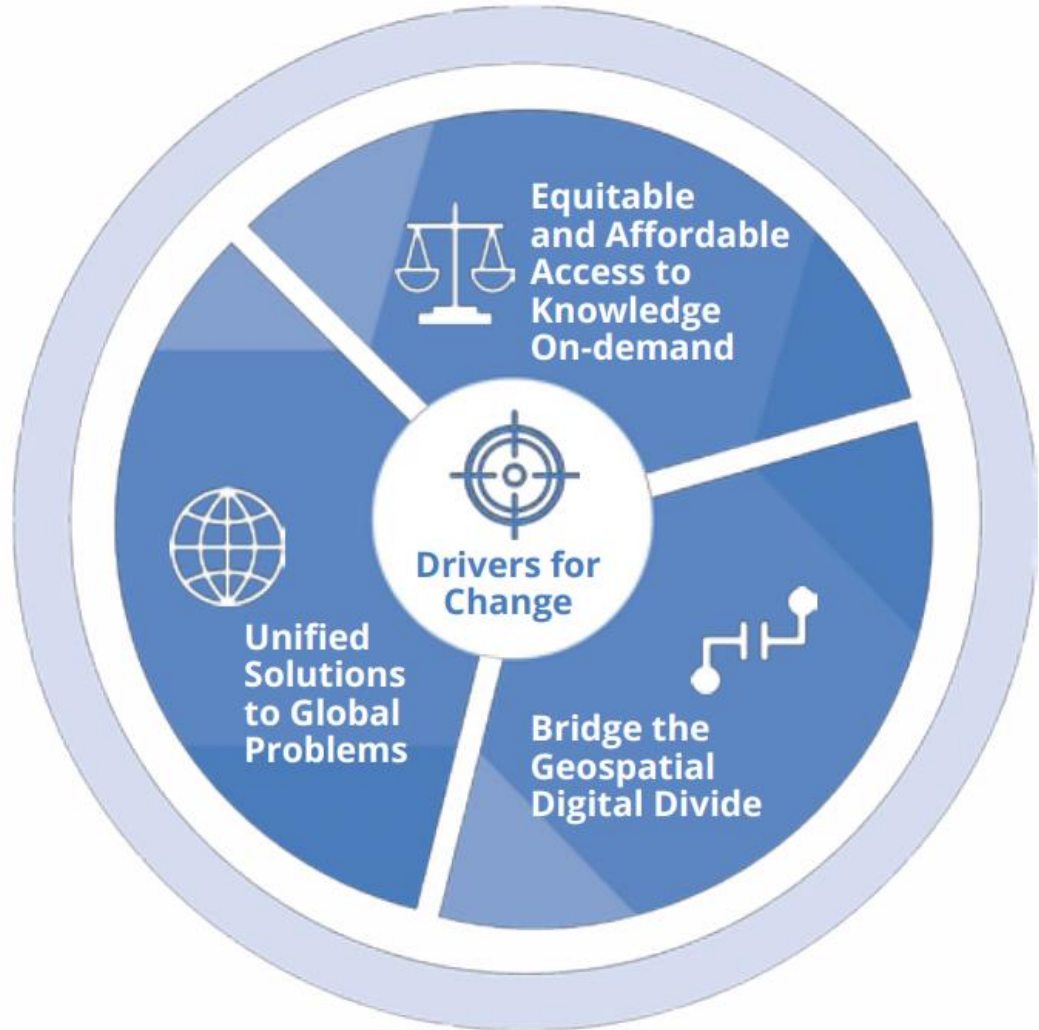
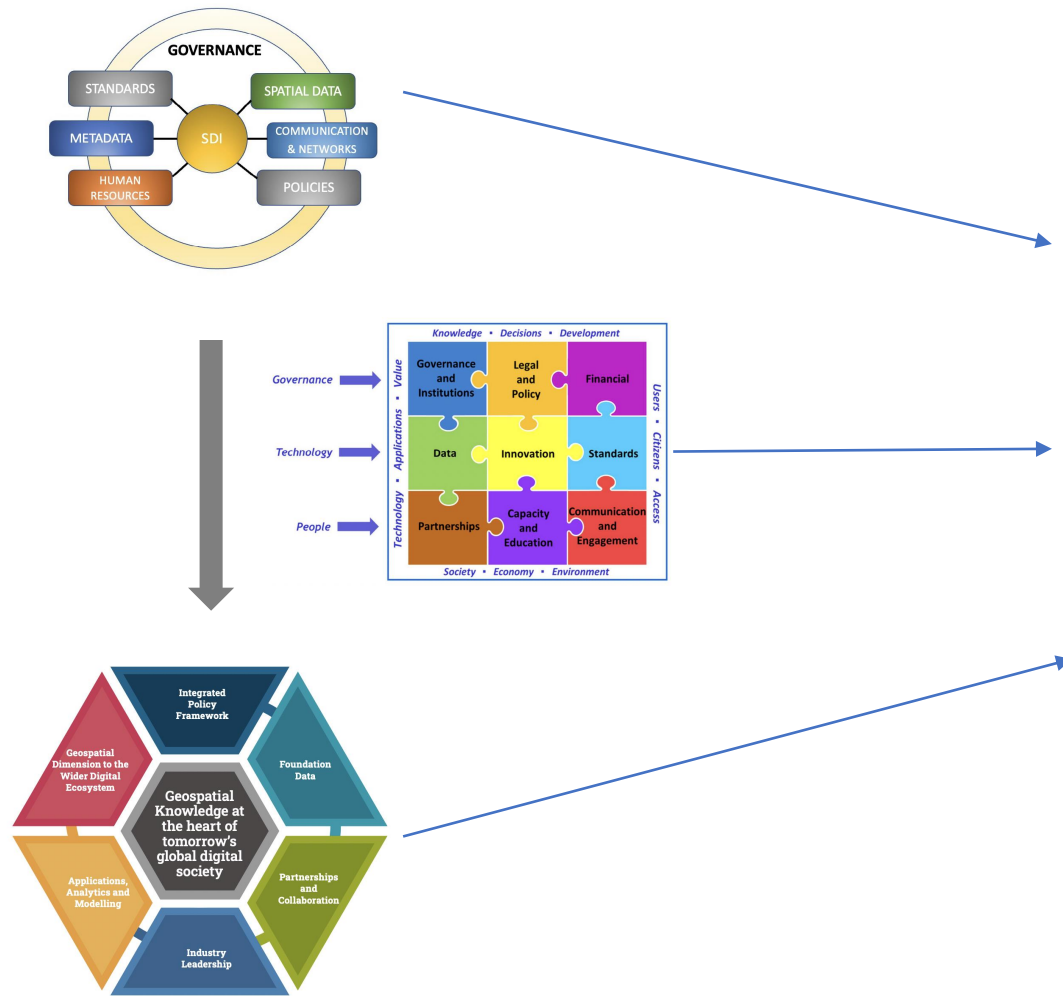
INTEGRATED GEOSPATIAL INFORMATION FRAMEWORK (IGIF)



GEOSPATIAL KNOWLEDGE INFRASTRUCTURE (GKI)

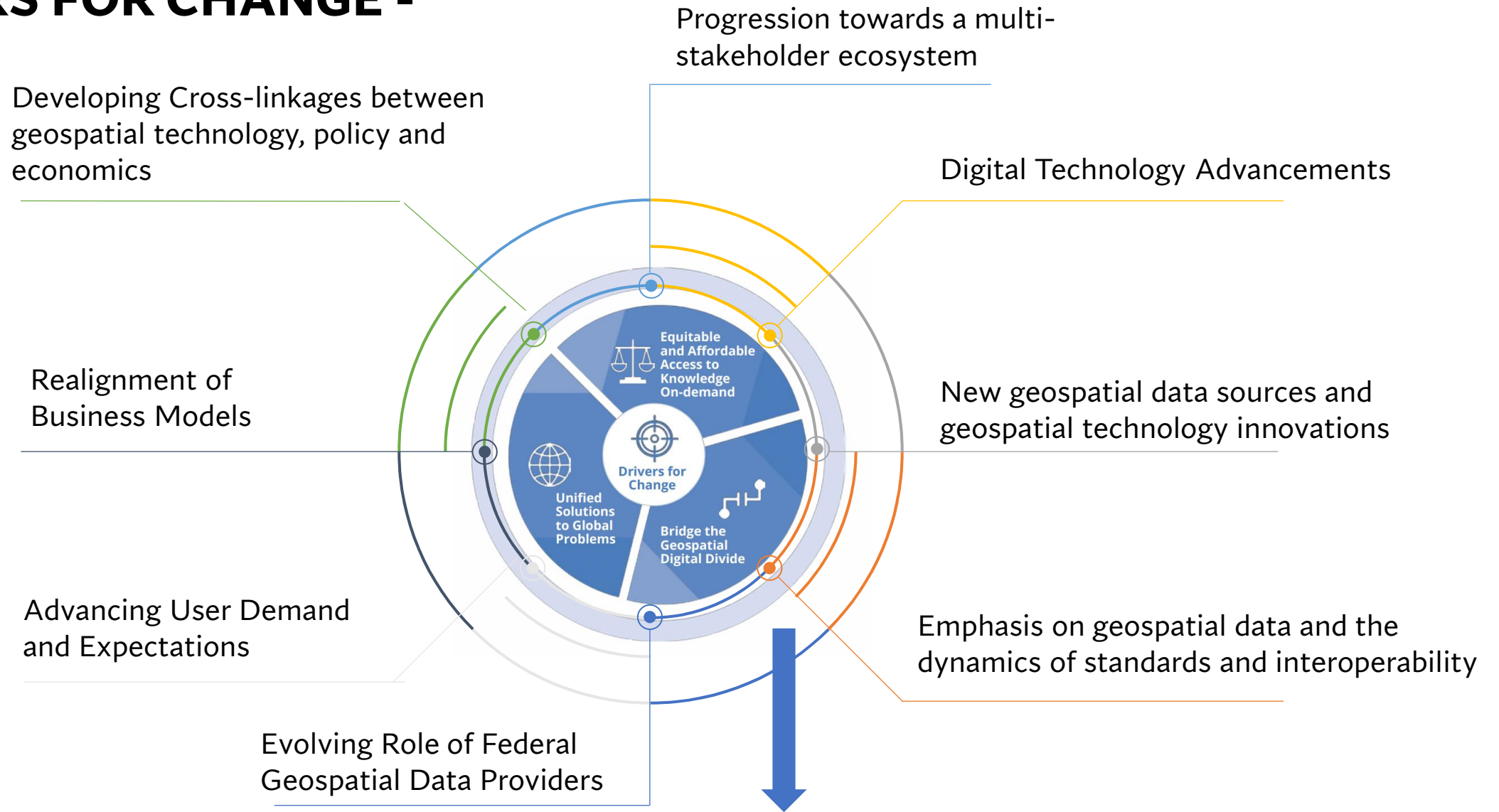


DRIVERS FOR CHANGE -



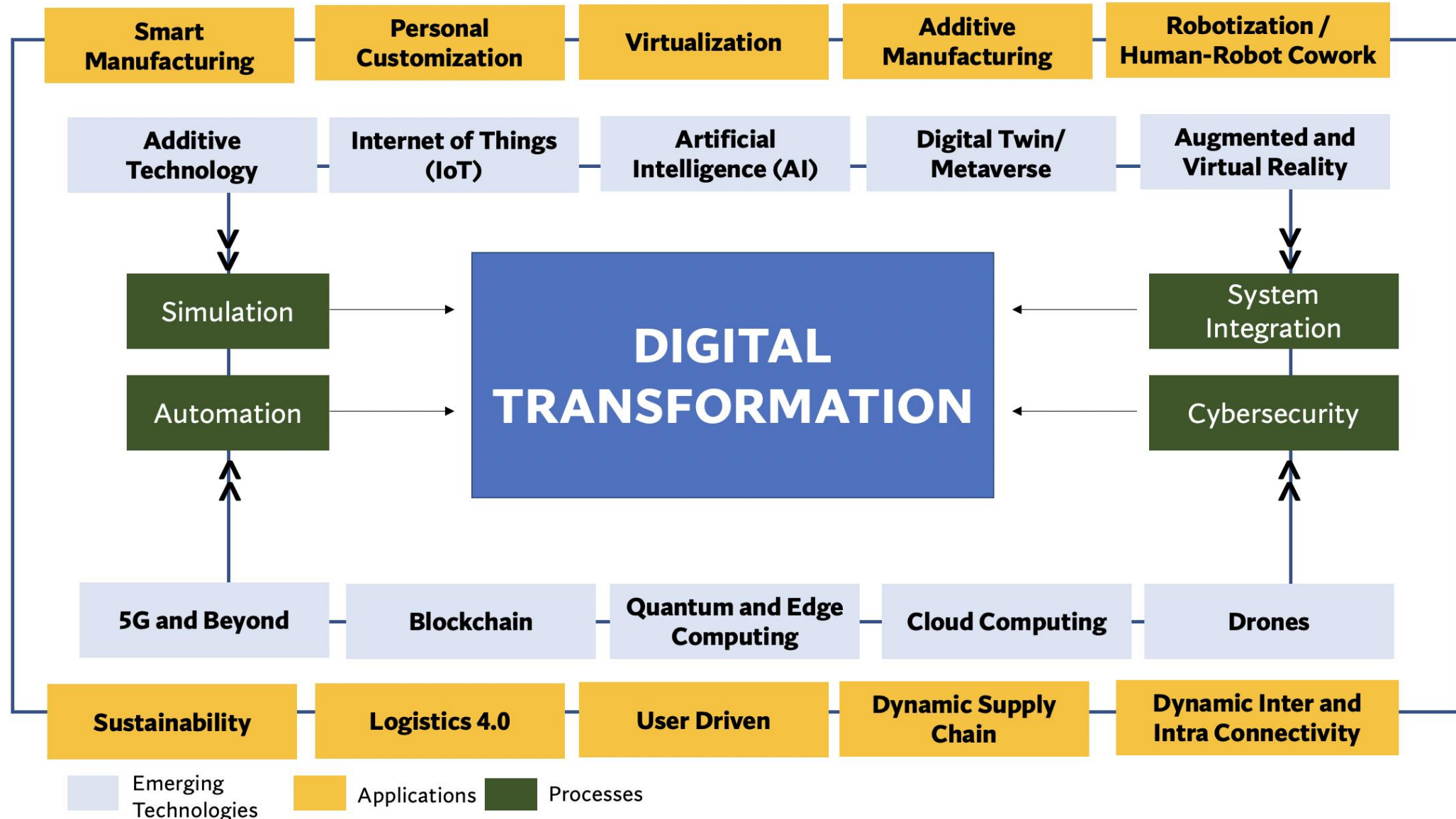
Source: Adapted from paper on Future Geospatial Information Ecosystem – From SDIs to Systems of Systems (SoS) and on to the Metaverse

DRIVERS FOR CHANGE -



Transformation required to create value and impact and bring focus on strategic national priorities

World is moving towards digital transformation...



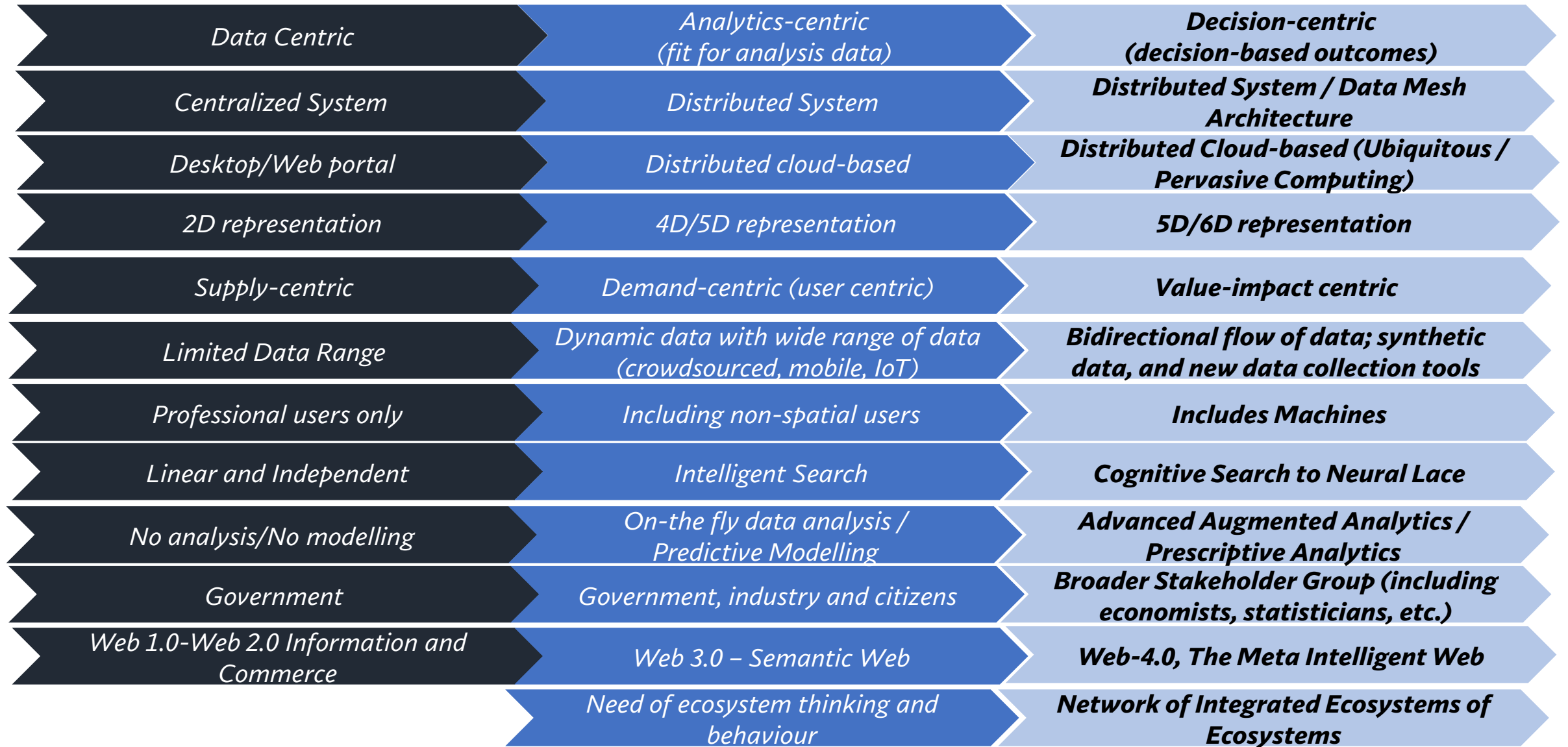
...For efficient socio-economic development

DESIRED NATIONAL GEOSPATIAL ECOSYSTEM – BEYOND THE SDIs & GKI

Spatial Data Infrastructure (SDI)

Geospatial Knowledge Infrastructure (GKI)

Desired Geospatial Ecosystem



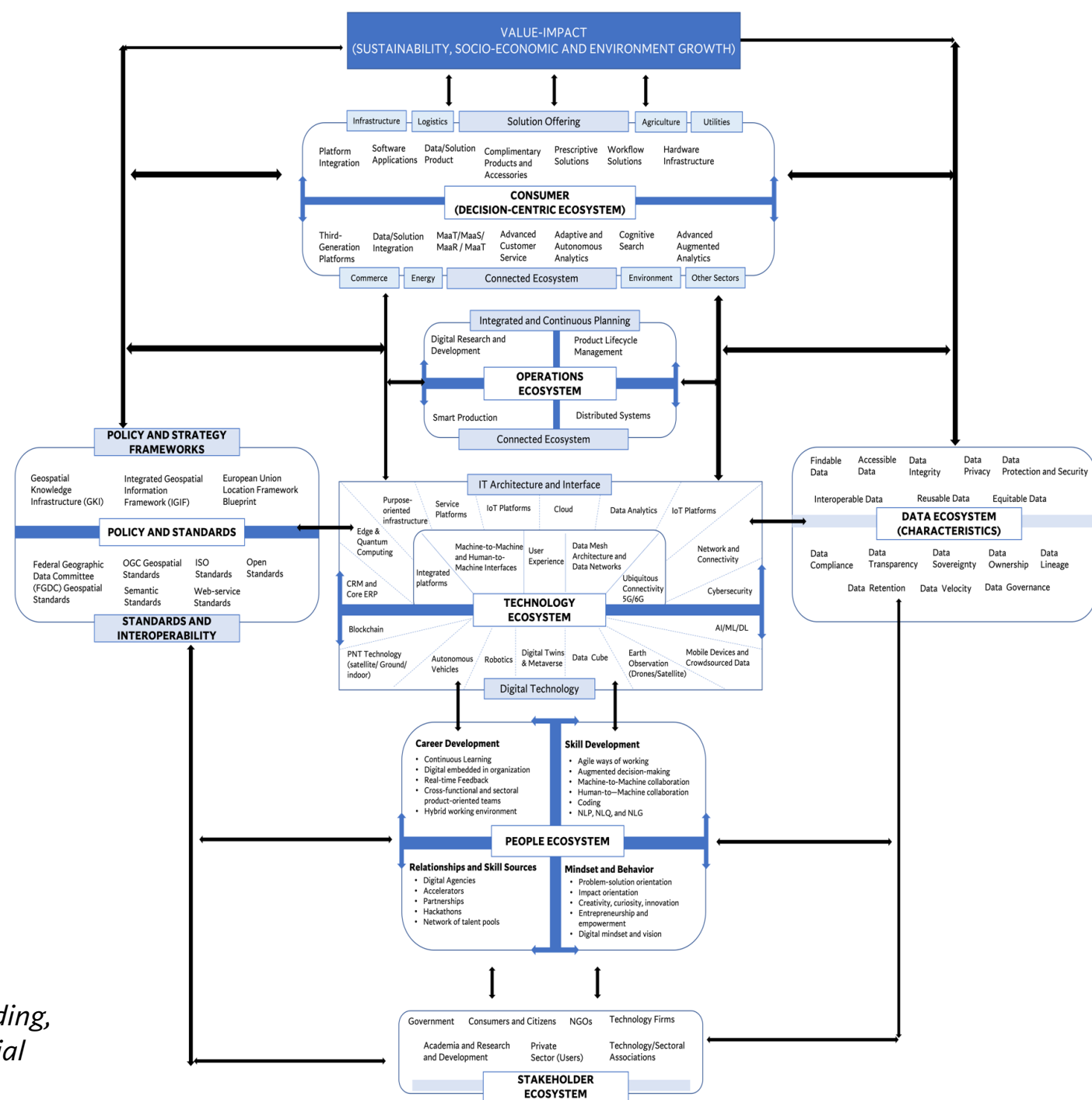
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CHANGING GEOSPATIAL ECOSYSTEM PARADIGM

An Ecosystem of Ecosystem Approach

1. Stakeholder Ecosystem
2. People Ecosystem
3. Technology Ecosystem
4. Policy and Standards
5. Data Ecosystem (Characteristics)
6. Operations/Processes Ecosystem
7. Consumer (Decision-Centric Ecosystem)

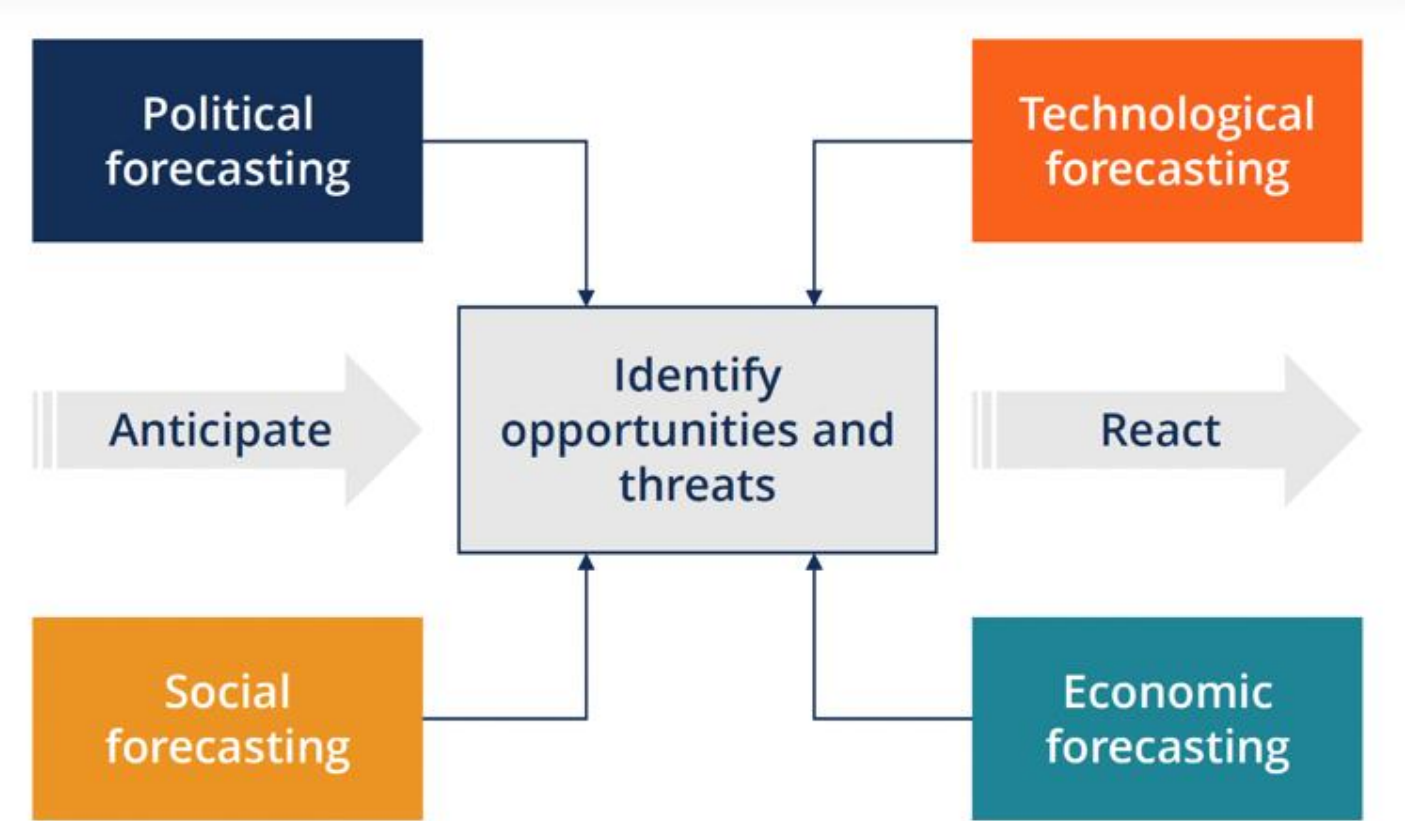
...to create value impact for sustainability, socio-economic and environment growth



Source: Adapted from paper on Development of Contextual Understanding, Information and Analytics Towards Determining the National Geospatial Information Ecosystem

WHAT NEXT?

PEST FRAMEWORK FOR ADOPTION AND ADAPTATION OF INTEGRATED GEOSPATIAL INFORMATION FRAMEWORK AND THE DESIRED GEOSPATIAL ECOSYSTEM



PEST ANALYSIS AS A PRECURSOR OR A TOOL TO DEVELOP AND IMPLEMENT IGIF AND ALL FUTURE GEOSPATIAL ECOSYSTEM

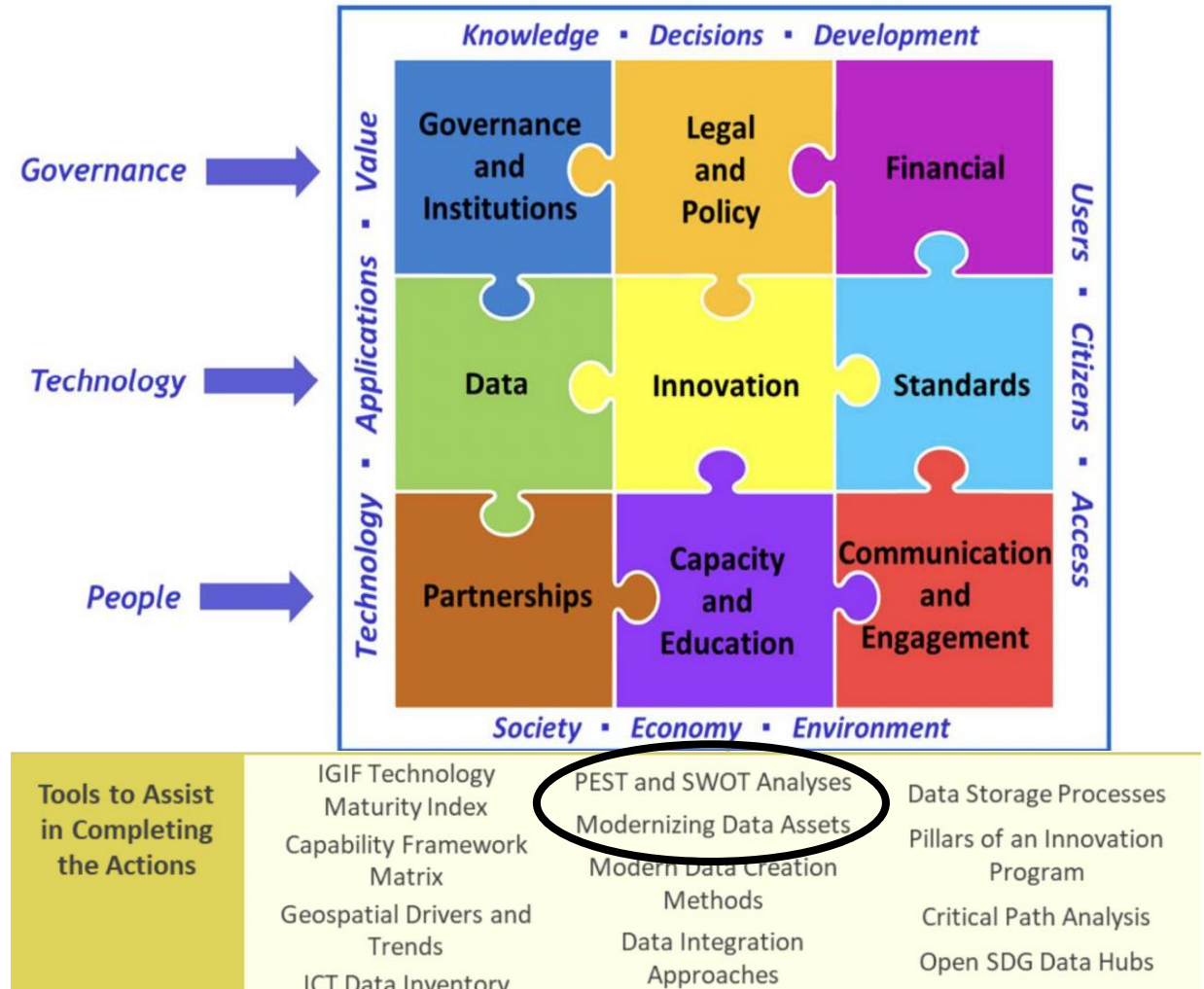
IGIF VISION AND MISSION

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.

Mission

To promote and support innovation and provide the leadership, coordination and standards necessary to deliver integrated geospatial information that can be leveraged to find sustainable solutions for social economic and environmental development.



PEST ANALYSIS - FRAMEWORK

Factors	Specific Queries
Political	<ul style="list-style-type: none"> • Government type and stability • Government willingness towards digital and geospatial technology enablement • Anticipate changes in the political environment (political environment) • Government funding, grants and initiatives for economic sectors and technology (digital and geospatial) adoption • Government policies and it's interconnectedness with international legislation trends (in technology domain) • Partnerships and Collaborations with international governments (inclusive of technology transfer policies, and trade policies) • War and Conflict situations (current and anticipated)
Economical	<ul style="list-style-type: none"> • Home economy situation and trends vis-à-vis international economies situation and trends • Impact of Globalization • Economic stability with respect to GDP, GVA, employment rates, Foreign Direct Investment (FDI), etc. • Business/Enterprise Directives / market and trade cycles • International trade/ monetary issues
Social	<ul style="list-style-type: none"> • Demographics • Law changes affecting social factors • Educational Capacity (computer and geospatial literacy)
Technological	<ul style="list-style-type: none"> • Pace of adoption of digital technology advancements (or emerging technologies) • Speed of technological transfer • Rate of technology obsolescence • Rate of Internet use and network coverage, i.e., broadband capacity • Indigenous technology (digital and geospatial) developments and innovations • Indigenous patents and licenses in digital and geospatial technology domain • Existing research and development activities (including funding) in IT and geospatial-related domains • Existing technology readiness and maturity across economic sectors • Standards and Interoperability frameworks for technology platforms • Enabling/supportive measures for the development and diffusion of digital and geospatial technology

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The **PEST Framework** provides a self-validating framework for countries to assess the political willingness, economic intervention, social variables and technology factors which have a direct and in many cases indirect impact on the development and implementation of a national geospatial information ecosystem. **Added on to the country-action plan of the IGIF** – a PEST framework can enable a much faster transition towards making the step change to a future geospatial ecosystem.”



Thank you

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