SOCIO-ECONOMIC IMPACT ASSESSMENT OF GEOSPATIAL DATA

THE KINGDOM OF SAUDI ARABIA

PREPARED BY

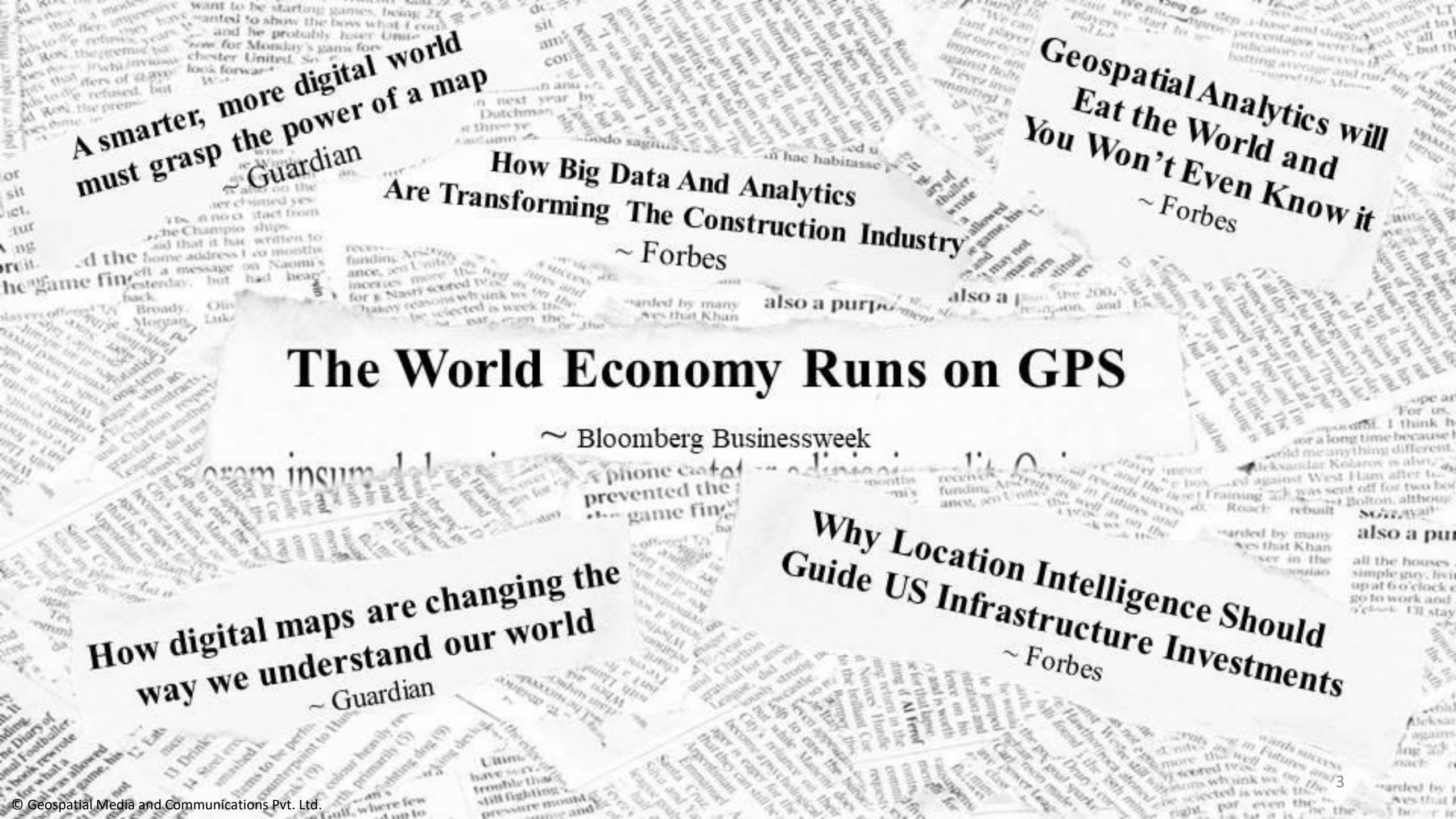
GEOSPATIAL WORLD
ADVANCING KNOWLEDGE FOR SUSTAINABILITY

PRODUCED BY

GEOSA
الهيئة العامة للمساحة والمعلومات الجيومكانية
General Authority for Survey and Geospatial Information

Ananyaa Narain
Vice – President - Consulting
Geospatial World

Maps are not
just driving apps,
they are driving
economies too…



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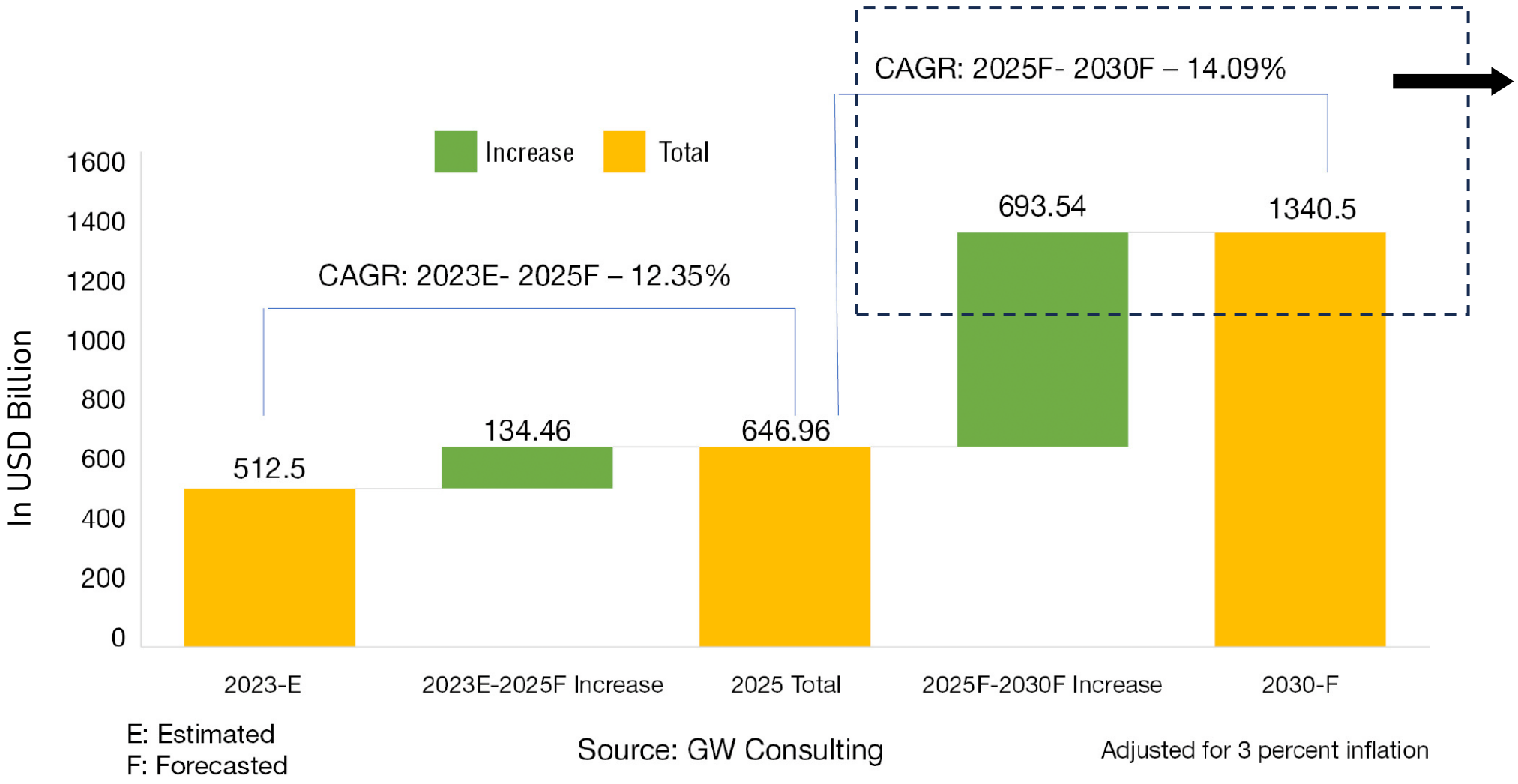
Global Geospatial Market Size and Forecast: 2023-2030

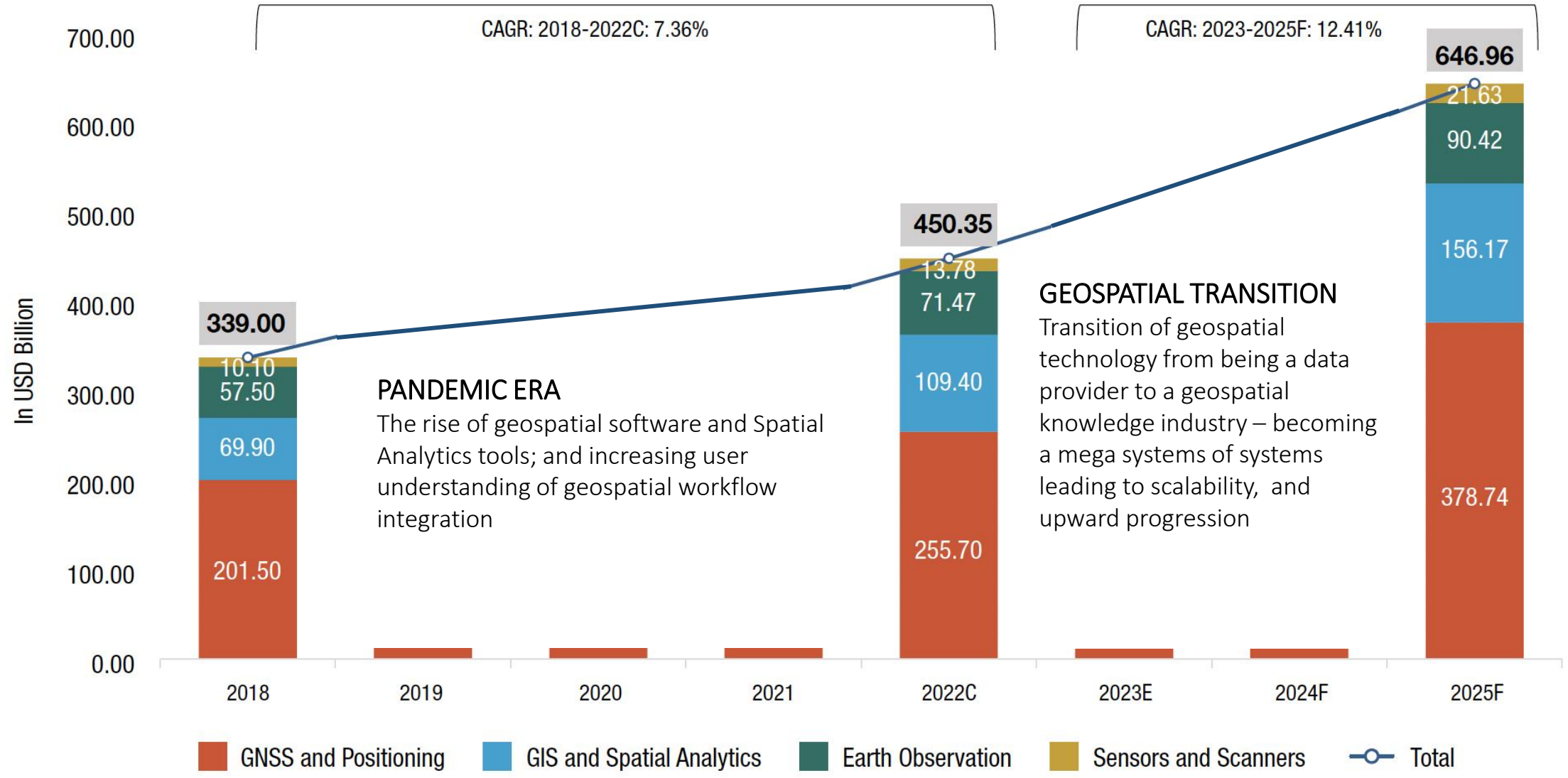


Driven by accelerating investments, new space economy, global public policy reforms, and evolving role of national geospatial agencies

Source: GeoBuiz 23: Global Geospatial Industry Market Size, Forecast and Growth Trends Report

Post-COVID, there is increasing digitalization and enhanced workflow integration across vertical domains. The idea is not to provide stand-alone products but provide end-to-end "fit-for-purpose" solutions.

Global Geospatial Market Size and Forecast: 2018-2025

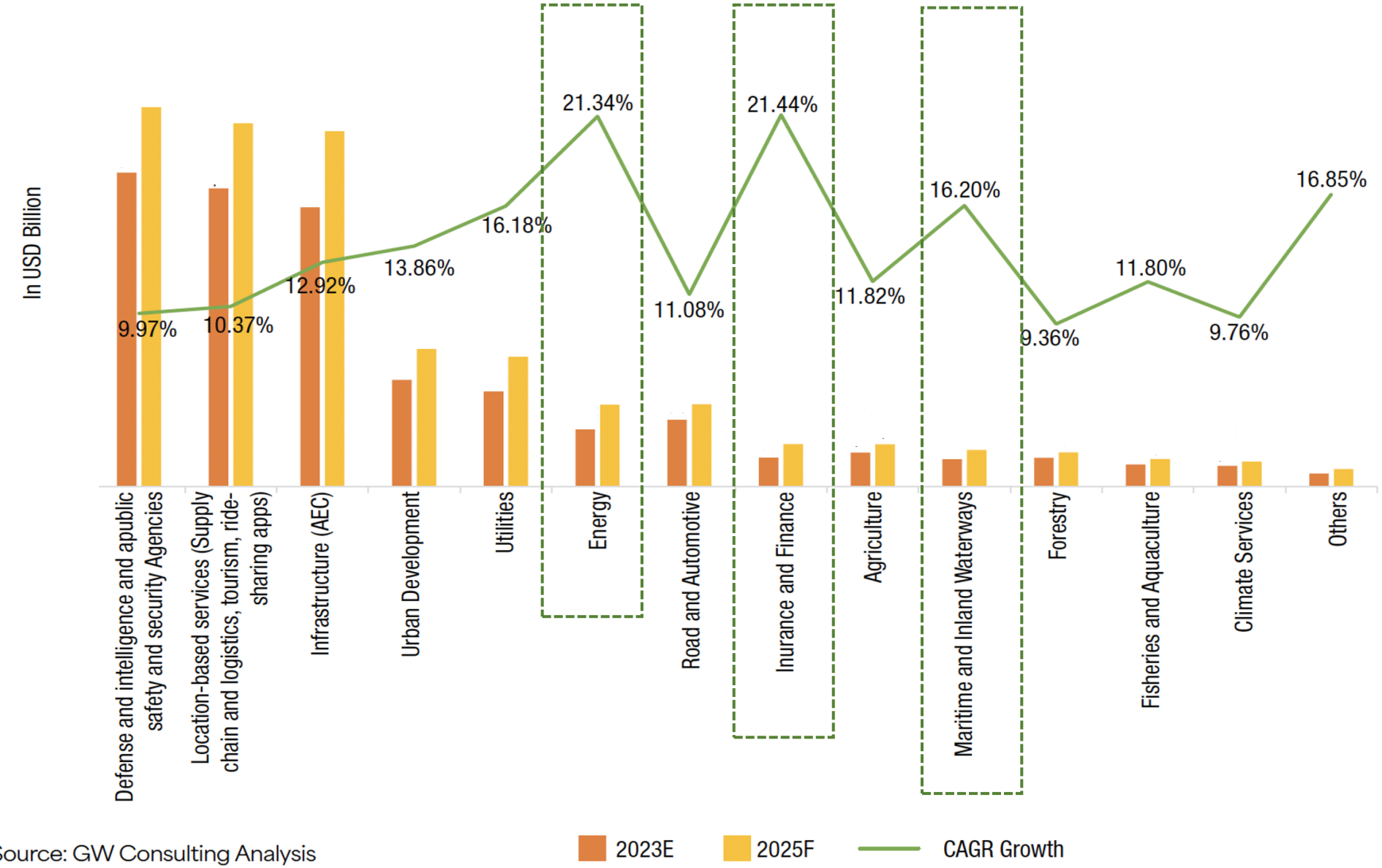


C=Corrected
E=Estimated
F=Forecasted

Source: GW Consulting Analysis

“Geospatial data has moved from the realms of maps to knowledge – wherein citizens and customers require data and solutions which are more current, accurate, with on-demand accessibility and in application ready formats.”

Sectoral Geospatial Market Size and Forecast: 2023-2025

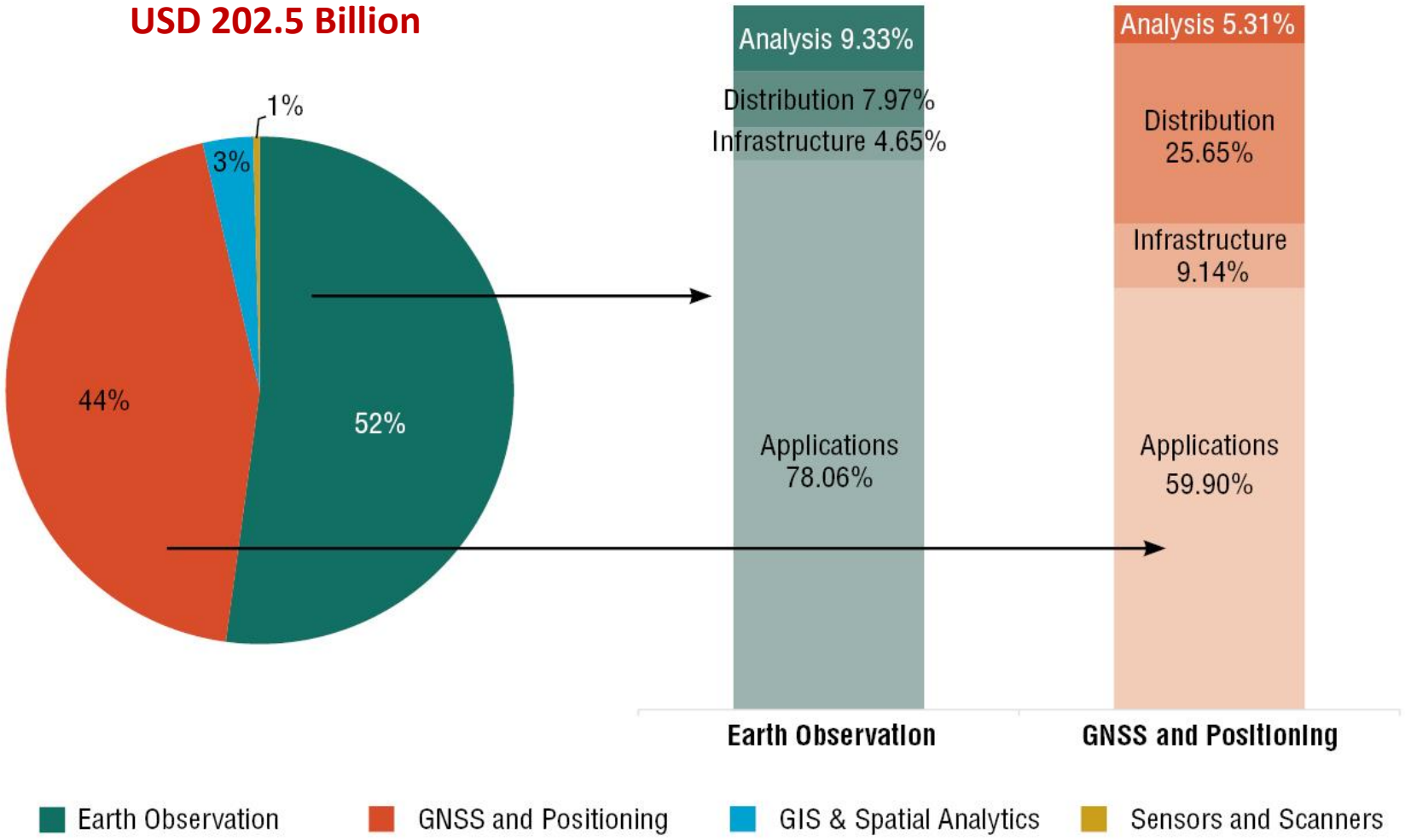


Source: GW Consulting Analysis

Source: GeoBuiz 23: Global Geospatial Industry Market Size, Forecast and Growth Trends Report 2023

GW CONSULTING

Investments (including IPO and SPAC) in Global Geospatial and Space Industry (2019-2022)



Source: GeoBuiz 23: Global Geospatial Industry Market Size, Forecast and Growth Trends Report

GEOSPATIAL INDUSTRY MARKET MAP 2023

Each category across technologies covers - OEMs inclusive of Hardware, Software, Platform, and Content Providers
Number of Companies - 310

GW Consulting Analysis

DIRECT ECONOMIC IMPACT OF GEOSPATIAL INFORMATION AND TECHNOLOGY: GLOBAL

USD 7.5 Trillion
(2023)

USD 30 Trillion
(2030)

$0.66-$1.44 Tn
Infrastructure

$0.10-$0.87 Tn
Utilities

$0.36-$1.16 Tn
Location-based Services

$0.09-$0.42 Tn
Energy

$0.06-$0.34 Tn
Agriculture

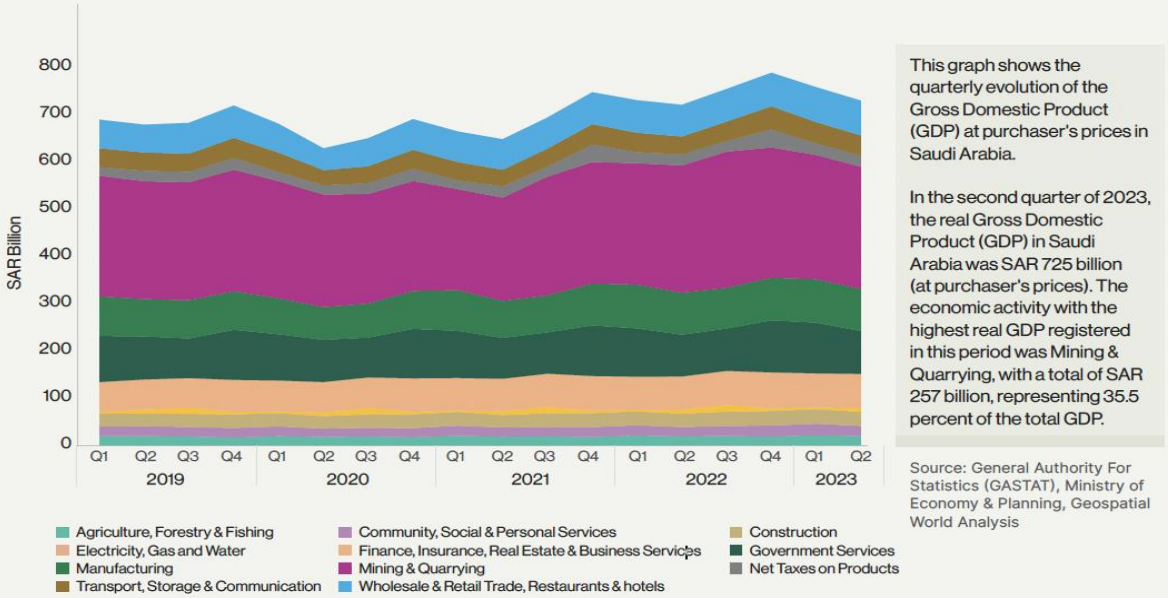
$0.05- $0.12 Tn
BFSI

GW CONSULTING

KINGDOM OF SAUDI ARABIA: ECONOMY AND NATIONAL PRIORITIES

THE KINGDOM OF SAUDI ARABIA TO REGISTER AN ECONOMIC GROWTH RATE OF 3.9 PERCENT IN 2024

Exhibit 4: Evolution of the Gross Domestic Product by Economic Activity

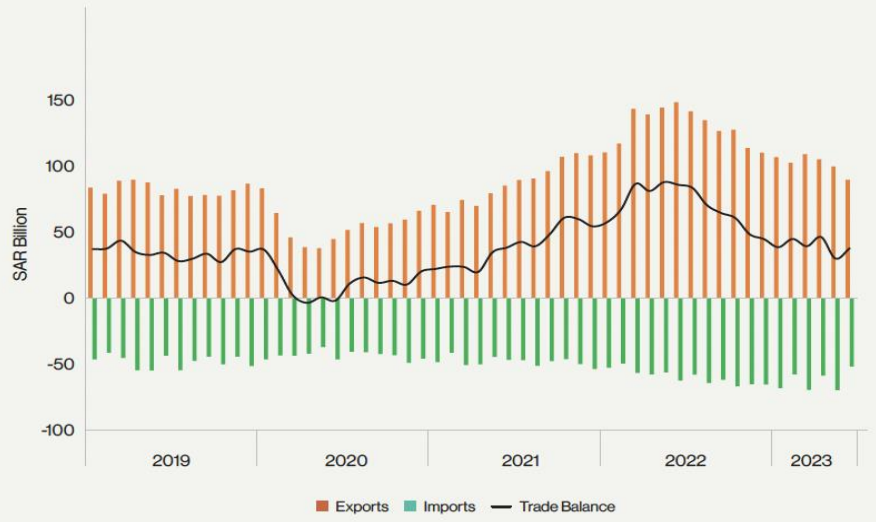


This graph shows the quarterly evolution of the Gross Domestic Product (GDP) at purchaser's prices in Saudi Arabia.

In the second quarter of 2023, the real Gross Domestic Product (GDP) in Saudi Arabia was SAR 725 billion (at purchaser's prices). The economic activity with the highest real GDP registered in this period was Mining & Quarrying, with a total of SAR 257 billion, representing 35.5 percent of the total GDP.

Source: General Authority For Statistics (GASTAT), Ministry of Economy & Planning, Geospatial World Analysis

Exhibit 5: Merchandise Exports/Imports and Trade Balance

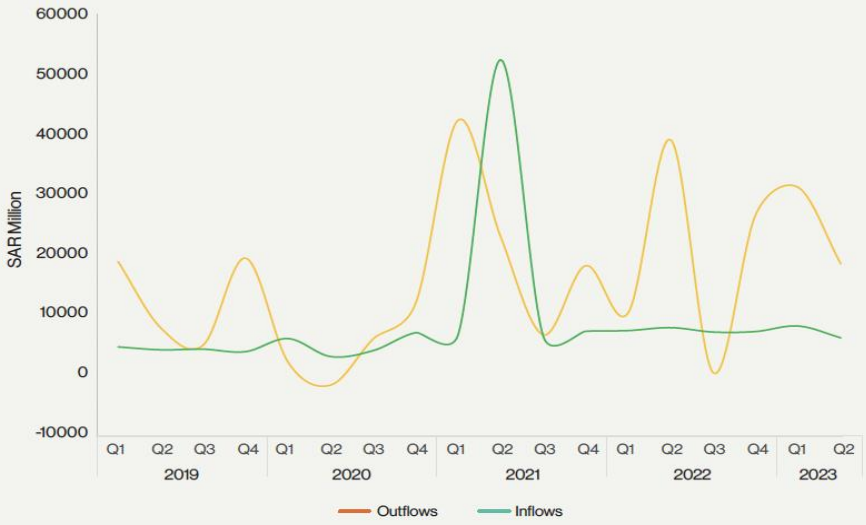


The graph shows the monthly evolution of merchandise exports and imports in Saudi Arabia.

In June 2023, merchandise exports reached SAR 88.8 billion, while merchandise imports were SAR 51.4 billion. As a result, the trade balance resulted in a surplus of SAR 37.3 billion.

Source: General Authority For Statistics (GASTAT), Ministry of Economy & Planning, Geospatial World Analysis

Exhibit 6: FDI Net Inflows and Outflows



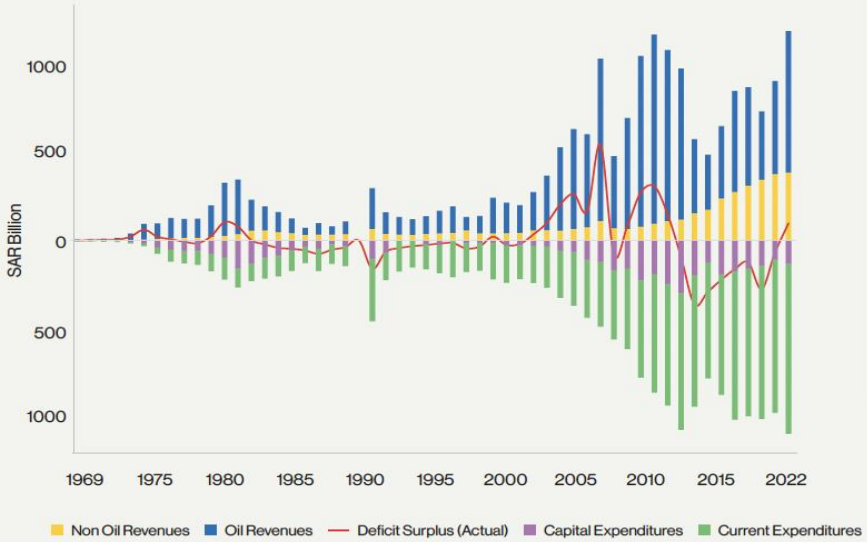
The chart shows the evolution of the FDI net inflows and net outflows over time.

During second quarter of 2023, the FDI net inflow amounted to SAR 6.2 billion, showing a decrease by 23.8 percent compared to the previous quarter.

On the other hand, the FDI net outflow amounted to SAR 18.3 billion, presenting a decrease of 40.6 percent compared to the previous quarter.

Source: Saudi Central Bank (SAMA) Ministry of Economy & Planning, Geospatial World Analysis

Exhibit 7: Annual Government Revenues and Expenditures



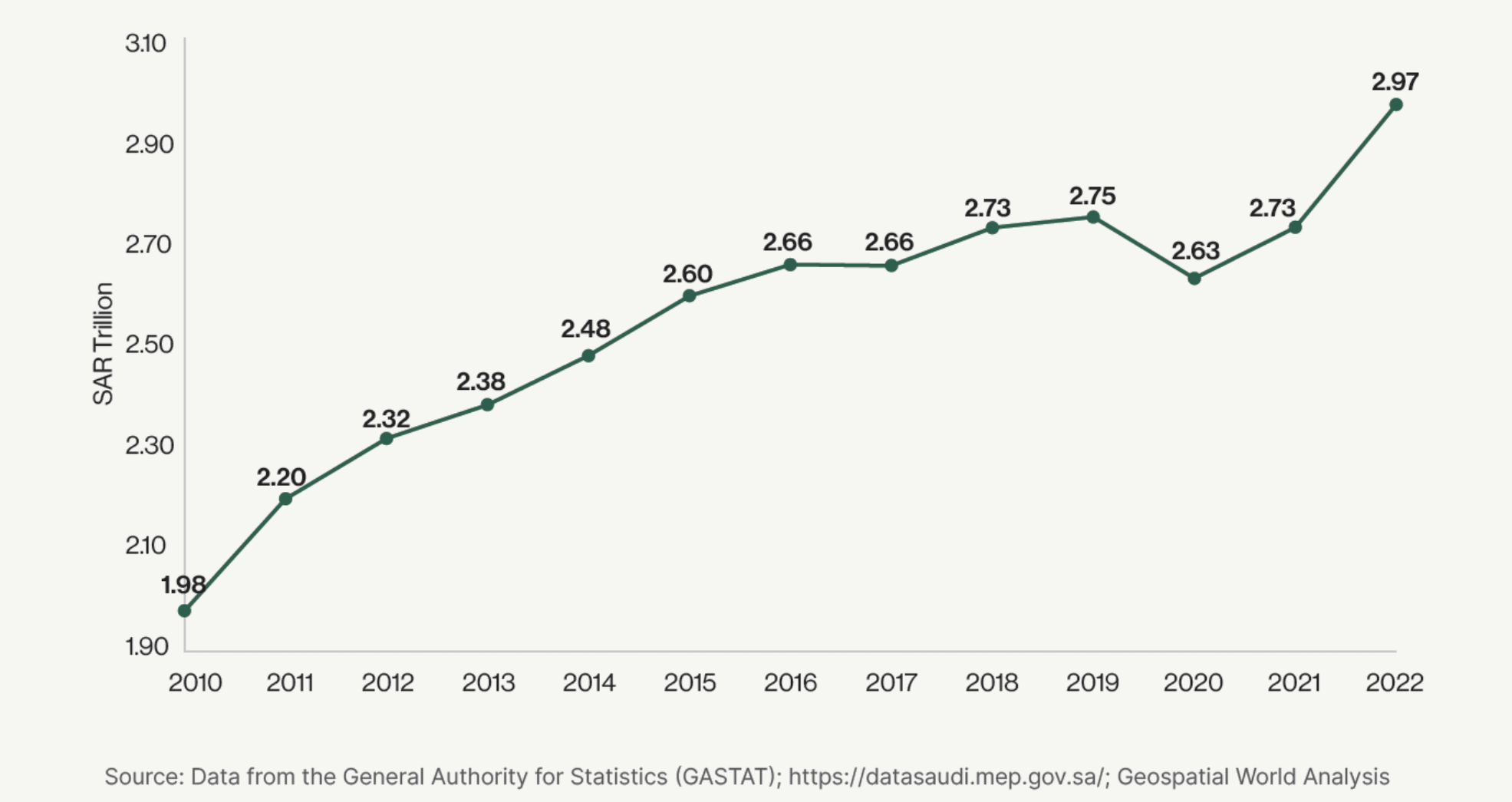
The graph shows the annual evolution of government expenditures and revenues, with the line representing the deficit or surplus each year.

The Kingdom's non-oil revenues reached SAR 411 billion in 2022, while oil revenues reached a total of SAR 857 billion. The expenditures amounted to SAR 1.16 trillion, of which SAR 143 billion were capital expenditures and SAR 1.02 trillion were current expenditures. This resulted in a surplus of SAR 104 billion.

Source: Ministry of Finance, Ministry of Economy & Planning, Geospatial World Analysis

SAUDI ARABIA's 2022 GDP BREAKS RECORDS, EXCEEDS USD 1 TRILLION

Saudi Arabia: Evolution of Real Gross Domestic Product (2010-2022)



Source: Socio-Economic Impact Assessment of Geospatial Data, report prepared by Geospatial World and Produced by GEOSA

SAUDI ARABIA's PHENOMENAL RANKING GROWTH IN GLOBAL INDICES

Global Innovation Index (GII) Ranking

Human Development Index Ranking (2022)

EGDI – 2022 United Nations

World Banks' GovTech Maturity Index – 2022

World Competitiveness Index (2023)

Source: Socio-Economic Impact Assessment of Geospatial Data, report prepared by Geospatial World and Produced by GEOSA

VISION رؤية 2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

"This vision will be the point of reference for our future decisions, so that all future projects are aligned to its content... Sustainable success can only be achieved when built upon solid foundations. Our vision, grounded in our country's strengths, will deliver this stability and create a brighter future for our country and our people."

MOHAMMED BIN SALMAN AL SAUD
Crown Prince of Saudi Arabia
Prime Minister of Saudi Arabia

Three Priorities

Goals by 2030

Vibrant Society

- To increase our capacity to welcome Umrah visitors from 8 million to 30 million every year
- To more than double the number of Saudi heritage sites registered with UNESCO
- To have three Saudi cities be recognized in the top-ranked 100 cities in the world
- To increase household spending on cultural and entertainment activities inside the Kingdom from the current level of 2.9 percent to 6 percent
- To increase the ratio of individuals exercising at least once a week from 13 percent of population to 40 percent
- To raise our position from 26 to 10 in the Social Capital index
- To increase the average life expectancy from 74 years to 80 years

Thriving Economy

- To lower the rate of unemployment from 11.6 percent to 7 percent
- To increase SME contribution to GDP from 20 percent to 35 percent
- To increase women's participation in the workforce from 22 percent to 30 percent
- To move from our current position as the 19th largest economy in the world into the top 15
- To increase the localization of oil and gas sectors from 40 percent to 75 percent
- To increase the Public Investment Fund's assets, from SAR 600 billion to over 7 trillion
- To rise from our current position of 25 to the top 10 countries on the Global Competitiveness Index
- To increase foreign direct investment from 3.8 percent to the international level of 5.7 percent of GDP
- To increase the private sector's contribution from 40 percent to 65 percent of GDP
- To raise our global ranking in the Logistics Performance Index from 49 to 25 and ensure the Kingdom is a regional leader
- To raise the share of non-oil exports in non-oil GDP from 16 percent to 50 percent

Ambitious Nation

- To increase non-oil government revenue from SAR 163 billion to SAR 1 Trillion
- To raise our ranking in the Government Effectiveness Index, from 80 to 20
- To raise our ranking on the E-Government Survey Index from our current position of 36 to be among the top five nations
- To increase household savings from 6 percent to 10 percent of total household income
- To raise the non-profit sector's contribution to GDP from less than 1 percent to 5 percent
- To rally one million volunteers per year (compared to 11,000 now)

Strategic Programs

Transformative Programs

- The Government Restructuring Program
- The Strategic Directions Program
- The Fiscal Balance Program
- The Project Management Program
- The Regulations Review Program
- The Performance Measurement Program

Strategic Executive Programs

- The Saudi Aramco Strategic Transformation Program
- The Public Investment Fund Restructuring Program
- The Human Capital Program
- The National Transformation Program
- The Program For Strengthening Public Sector Governance
- The Privatization Program
- The Strategic Partnerships Program

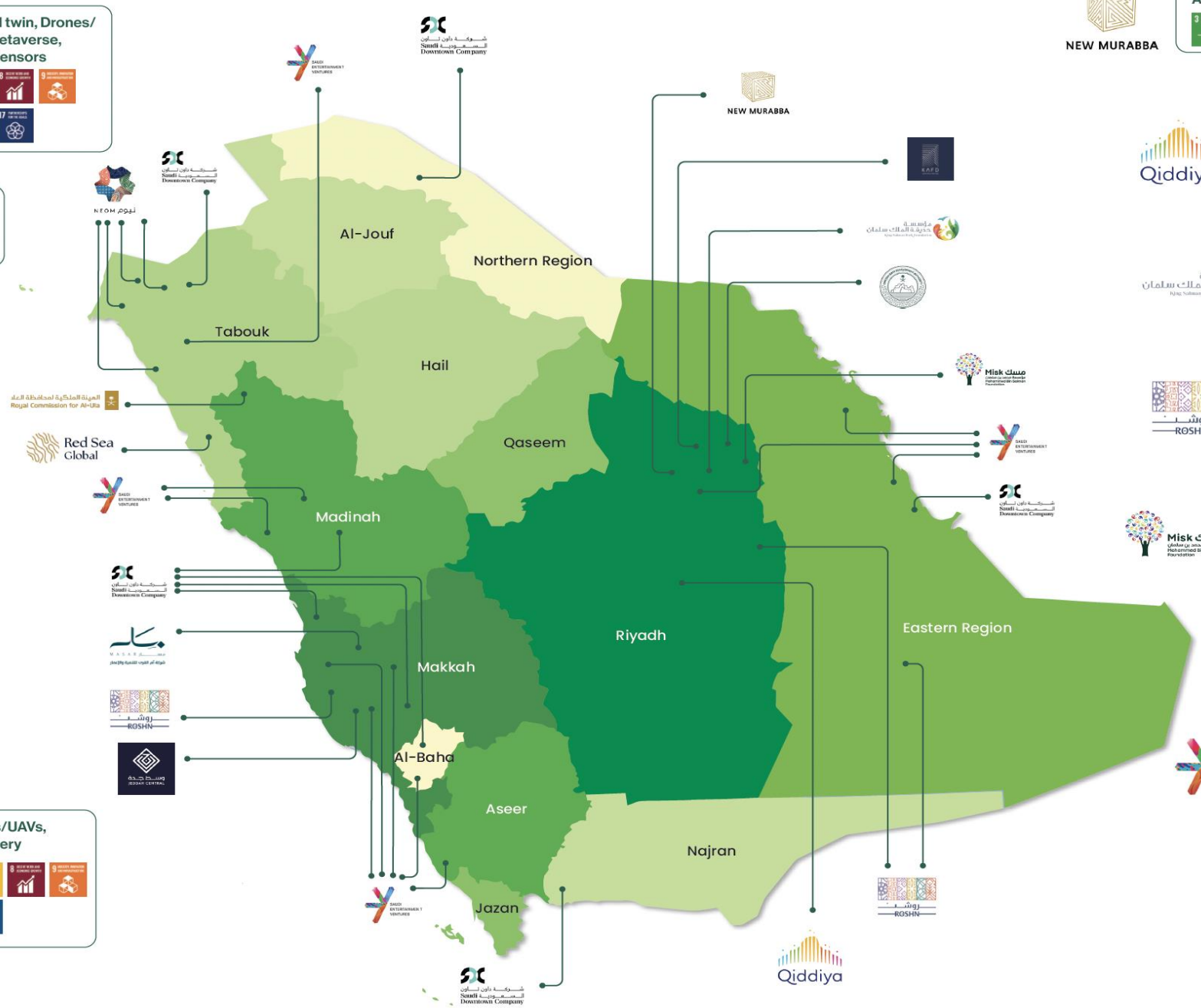
Technology Drivers

- 3D Printing
- AI/ML/DL
- Automation & Robotics
- Blockchain
- Big Data
- BIM
- Cloud Computing
- Digital Twin
- Geospatial
- Immersive Technologies (AR/VR/XR)
- Industrial IoT
- Metaverse
- Space
- Wifi 6E

Successful Global Model of Excellence

National Priorities	• Health	• Water & Food Security	• Future Economics: Giga Projects	• Tourism	• Mining	• Energy Transitions	• Culture & Heritage	• Retail	• Digital Infrastructure
Social Priorities	• Efficient & high quality healthcare • Attractive living environment		• Strong productive society • Providing equal opportunity	• Impactful non-profit sector • Promoting culture & entertainment					
Economic Priorities	• Investment powerhouse • Boosting SME's business		• Generate diverse job opportunity • Attracting local/foreign talent	• Privatization of government sector • Diversifying economic sectors	• Improving business environment • Building unique regional logistic hub		• Supporting national economics		
Environmental Priorities	• Environment sustainability		• Protecting vital resources						

GEOSPATIAL APPLICATIONS IN KINGDOM'S GIGA PROJECTS: EXAMPLES



NEOM نيوم

5G , AI/ML, AR/VR, Digital twin, Drones/ UAVs, GIS, GPS/DGPS, Metaverse, Robotics, Satellites and Sensors

شركة داون تاون السعودية Saudi Downtown Company

AR/VR, Drone, GIS

MASAR مسار شركة أم القرى للتنمية والإعمار

5G, BIM, GIS, GPS/ DGPS, Robotics

وسط جدة JEDDAH CENTRAL

BIM, GIS, GPS/DGPS

العينة الملكية لمحافظة العلا Royal Commission for Al-Ula

GIS, LiDAR, Satellite Imagery

Red Sea Global

5G, AI/ML, BIM, Cloud, Digital Twin, Drones/UAVs, GIS, GPS/DGPS, Metaverse, Satellite Imagery

NEW MURABBA

AR/VR, BIM, GIS, GPS/DGPS, Spatial Analytics

Qiddiya

BIM, Cloud, GIS, Geotechnical Survey, Remote Sensing, Satellite Imagery

مؤسسة حديقة الملك سلمان King Salman Park Foundation

BIM, GIS

ROSHN روشن

AI/ML, BIM, Drones/UAVs, GIS, Location intelligence, Spatial Analytics

Misk مسك مؤسسة محمد بن سلمان Mohammed Bin Salman Foundation

AR/VR, BIM, GIS, GPS/DGPS

5G, Drones/UAVs, GIS, GPS/DGPS, IoT

SAUDI ENTERTAINMENT VENTURES

AR/VR, BIM, GIS, GPS/DGPS

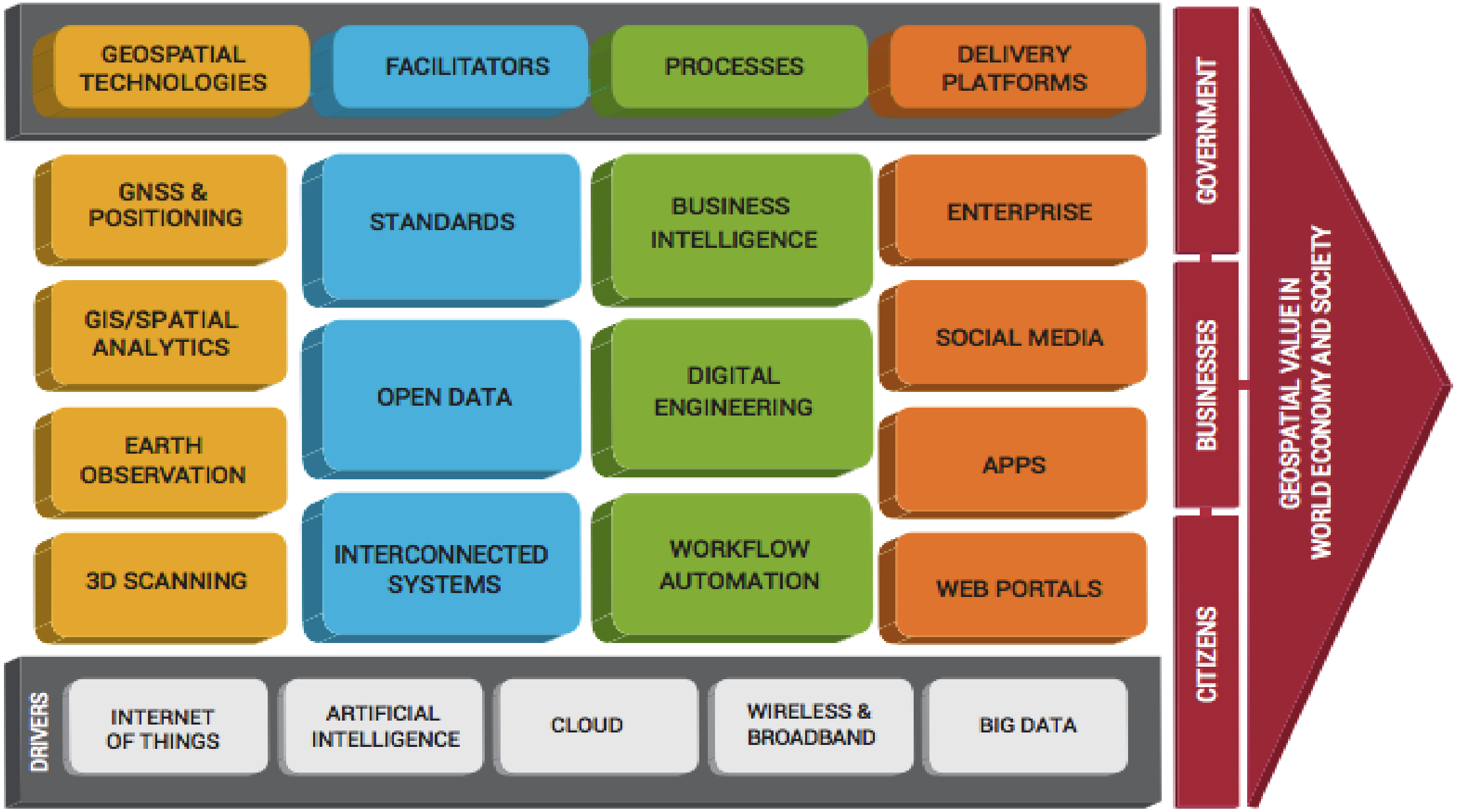
KAFD

BIM, GIS, GPS/DGPS

Source: Geospatial World Analysis

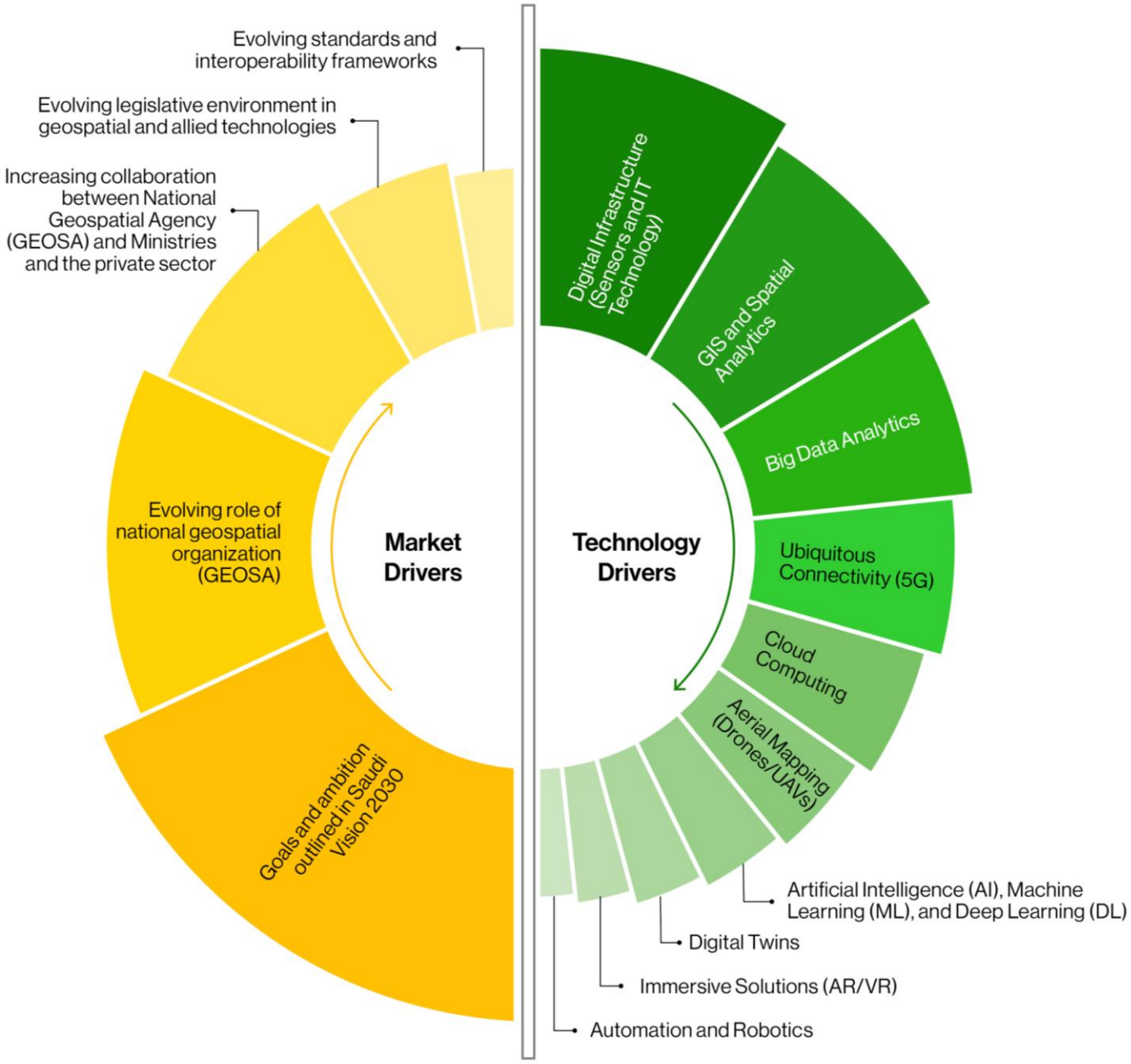
GEOSPATIAL MARKET AND FORECAST FOR THE KINGDOM OF SAUDI ARABIA

GEOSPATIAL INDUSTRY IN DIGITAL ECONOMY AND SOCIETY



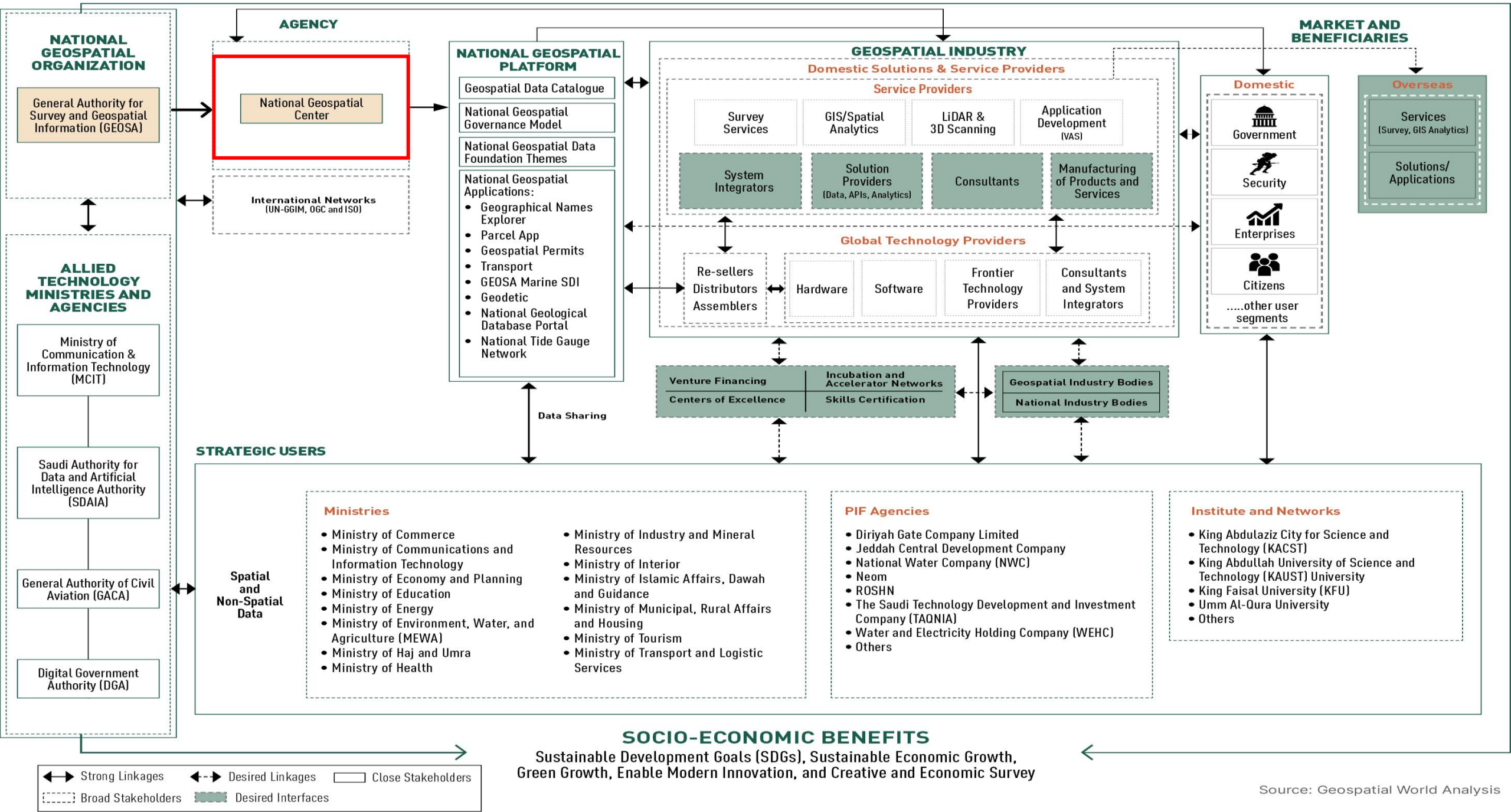
Source: Socio-Economic Impact Assessment of Geospatial Data, report prepared by Geospatial World and Produced by GEOSA

KSA'S GEOSPATIAL INDUSTRY'S KEY GROWTH DRIVERS AND DIFFERENTIATORS



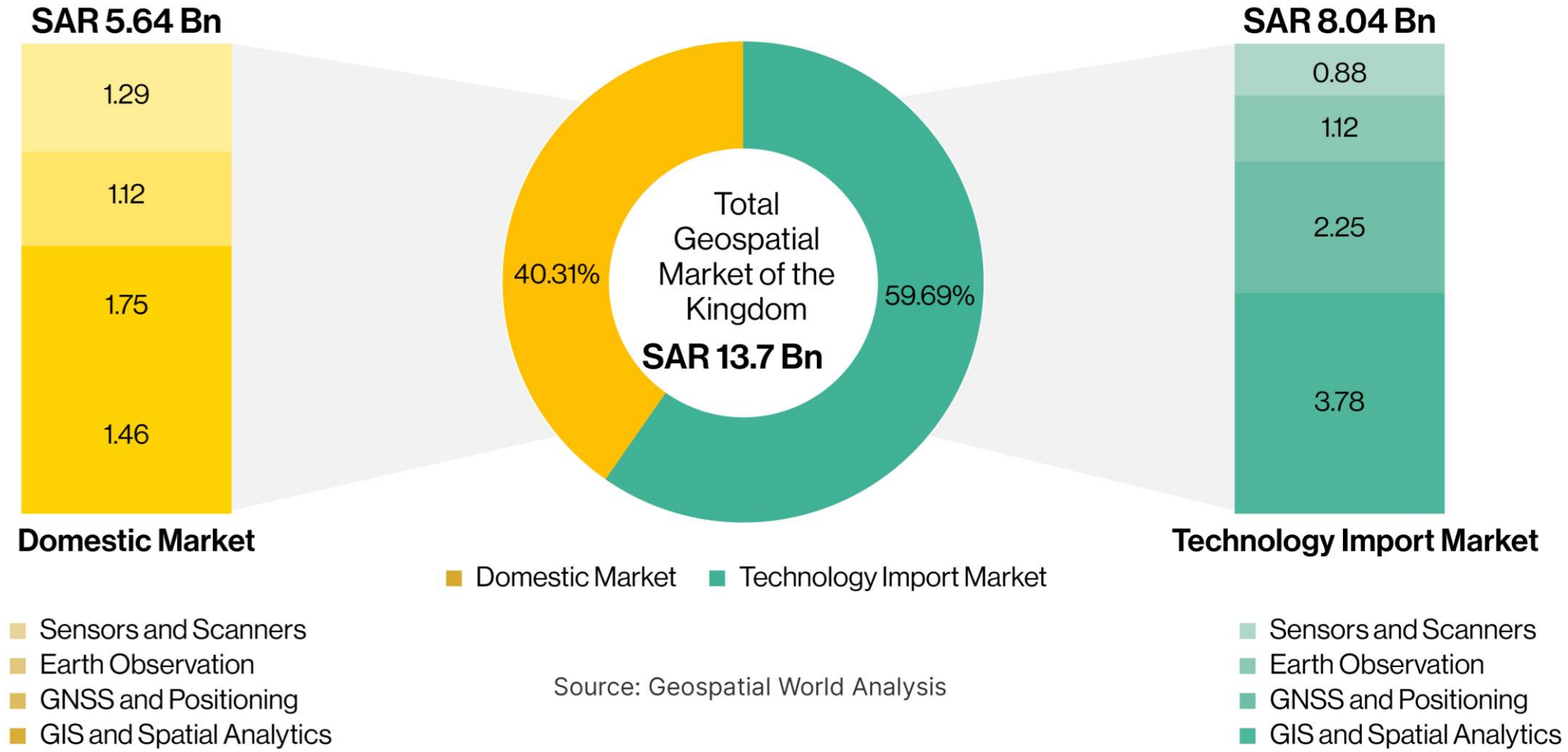
Source: Socio-Economic Impact Assessment of Geospatial Data, report prepared by Geospatial World and Produced by GEOSA

GEOSPATIAL LANDSCAPE OF THE KINGDOM OF SAUDI ARABIA



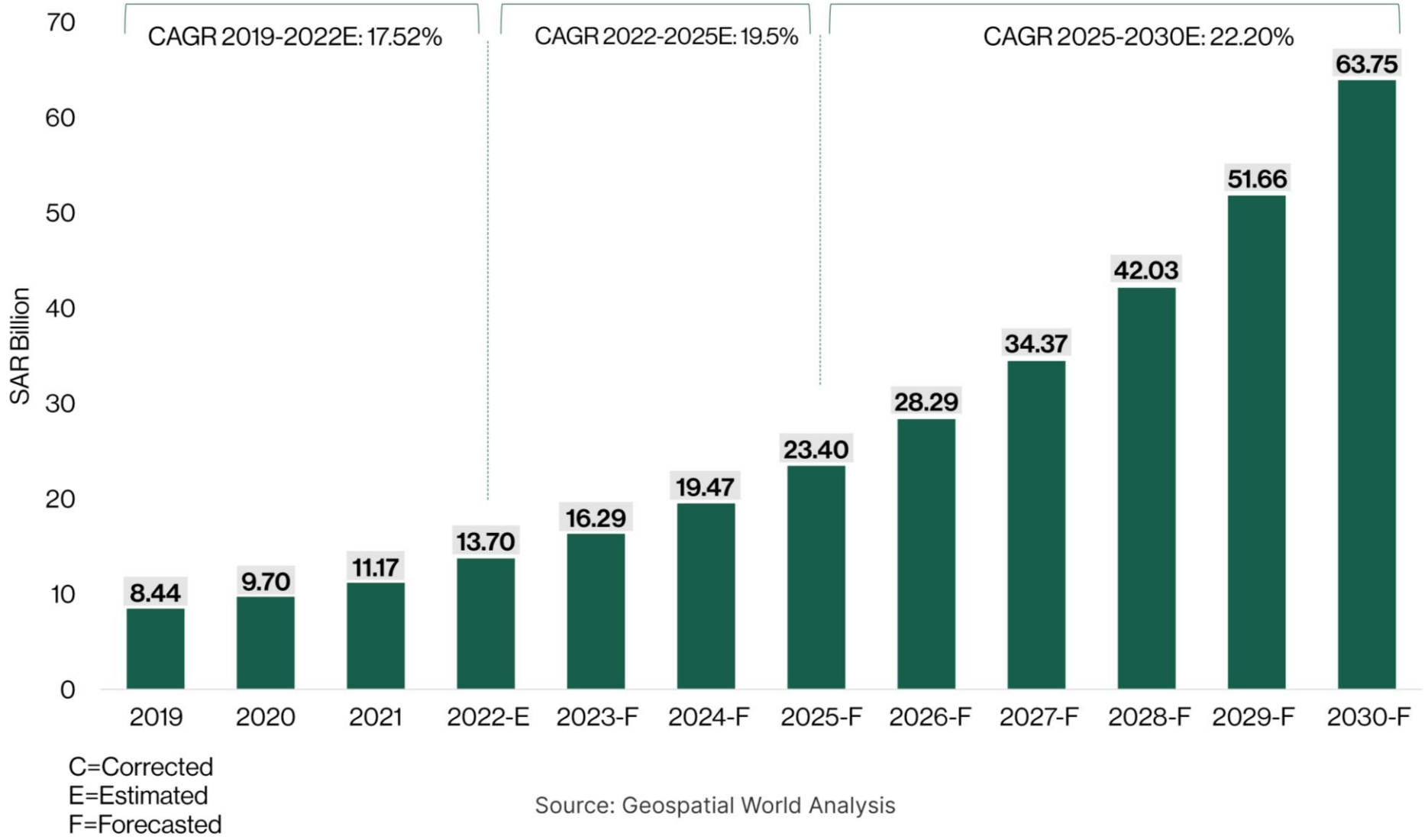
Source: Geospatial World Analysis

KSA'S GEOSPATIAL MARKET SIZE (2022)



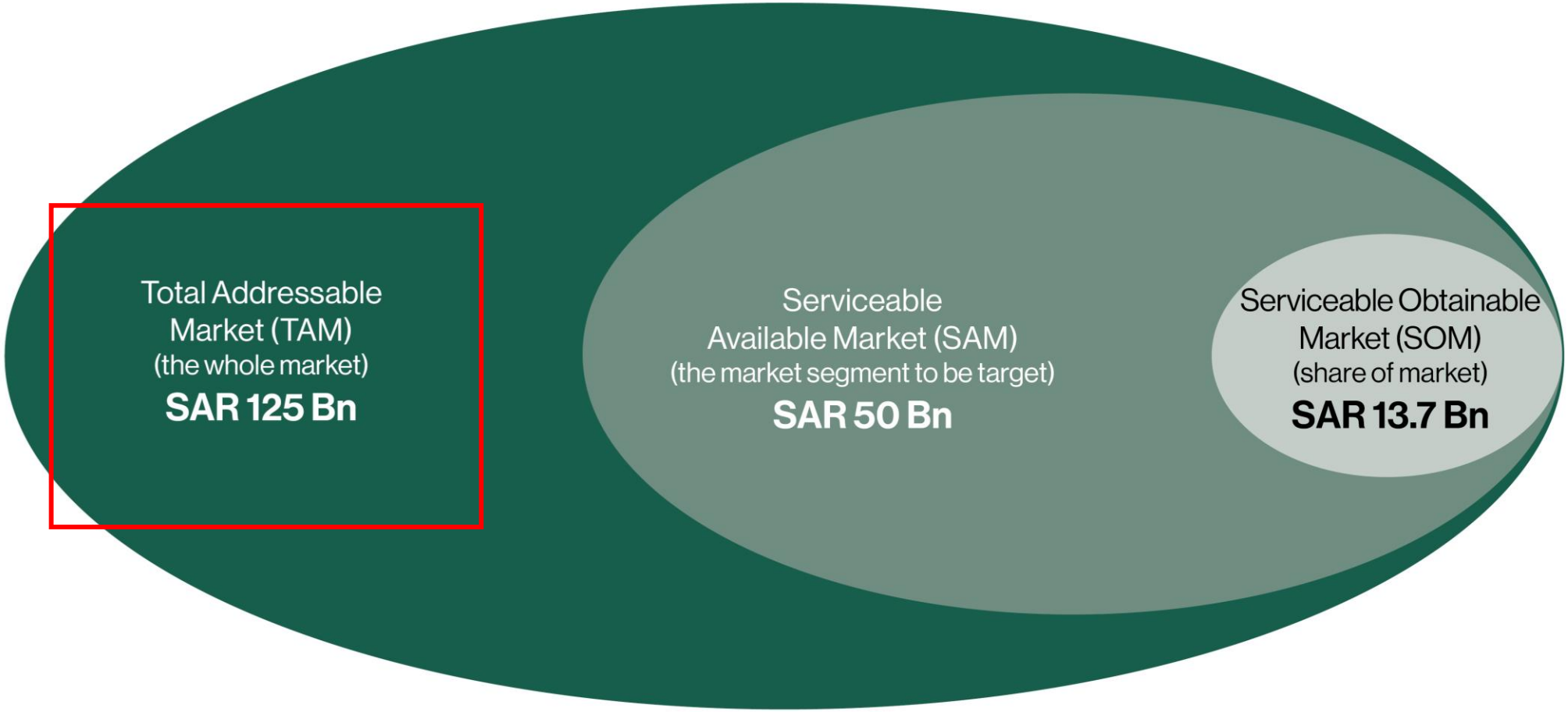
Source: Socio-Economic Impact Assessment of Geospatial Data, report prepared by Geospatial World and Produced by GEOSA

KSA'S GEOSPATIAL MARKET SIZE AND FORECAST 2019-2030F



Source: Socio-Economic Impact Assessment of Geospatial Data, report prepared by Geospatial World and Produced by GEOSA

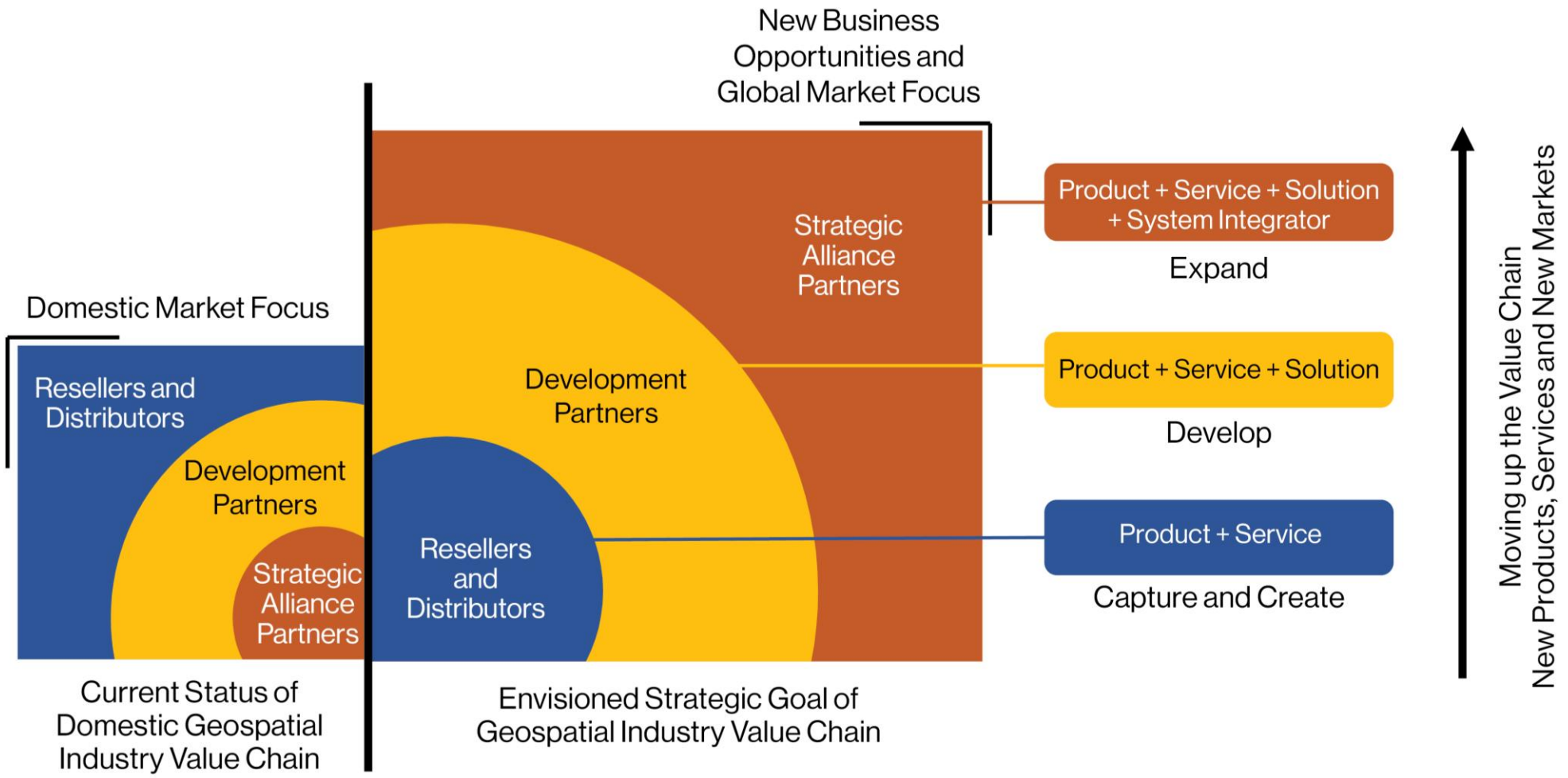
THE KINGDOM OF SAUDI ARABIA'S GEOSPATIAL MARKET 2022



Source: Geospatial World Analysis

Source: Socio-Economic Impact Assessment of Geospatial Data, report prepared by Geospatial World and Produced by GEOSA

KSA'S GEOSPATIAL INDUSTRY VALUE CHAIN: CURRENT STATUS AND ENVISIONED GOAL

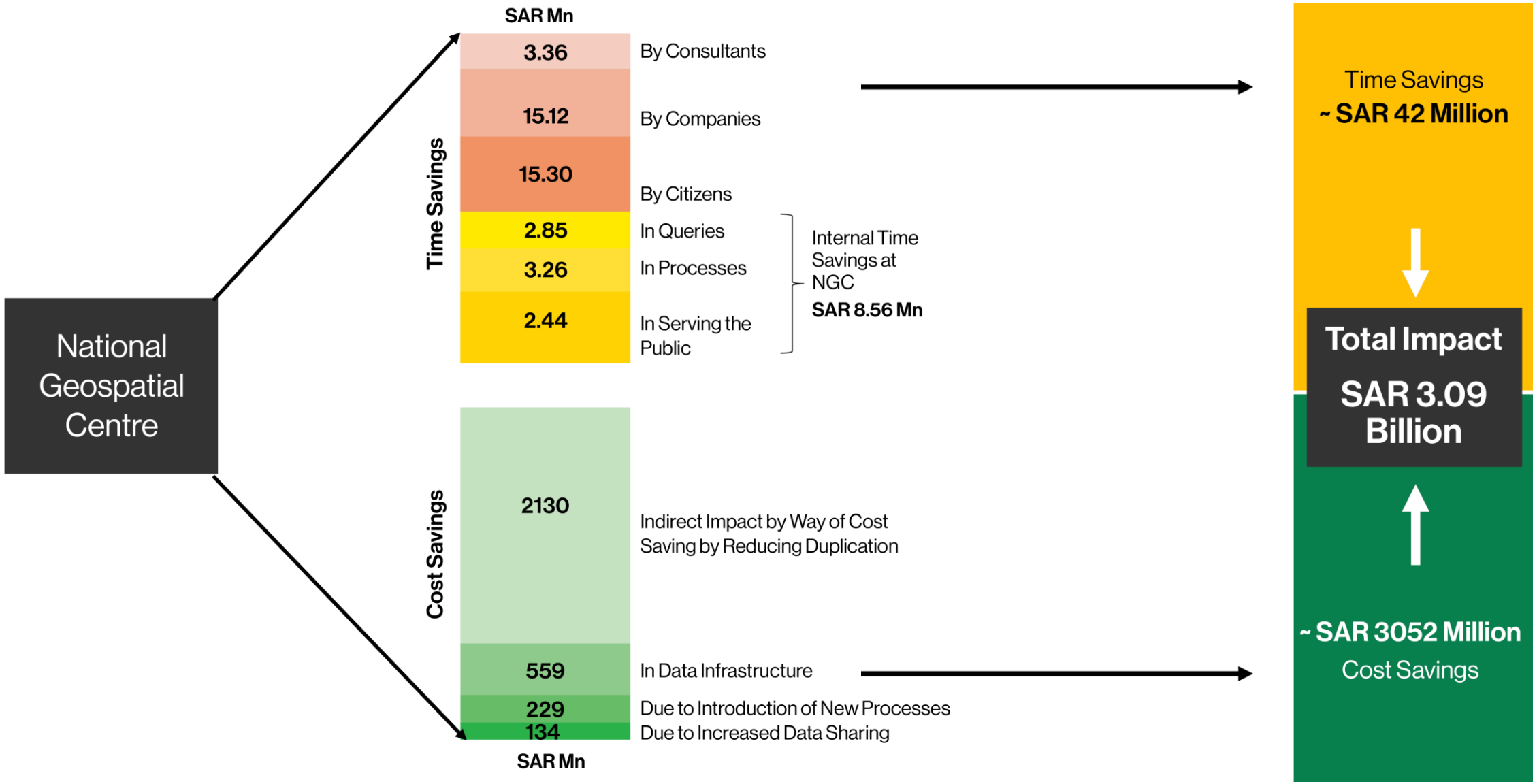


Source: Geospatial World Analysis

Source: Socio-Economic Impact Assessment of Geospatial Data, report prepared by Geospatial World and Produced by GEOSA

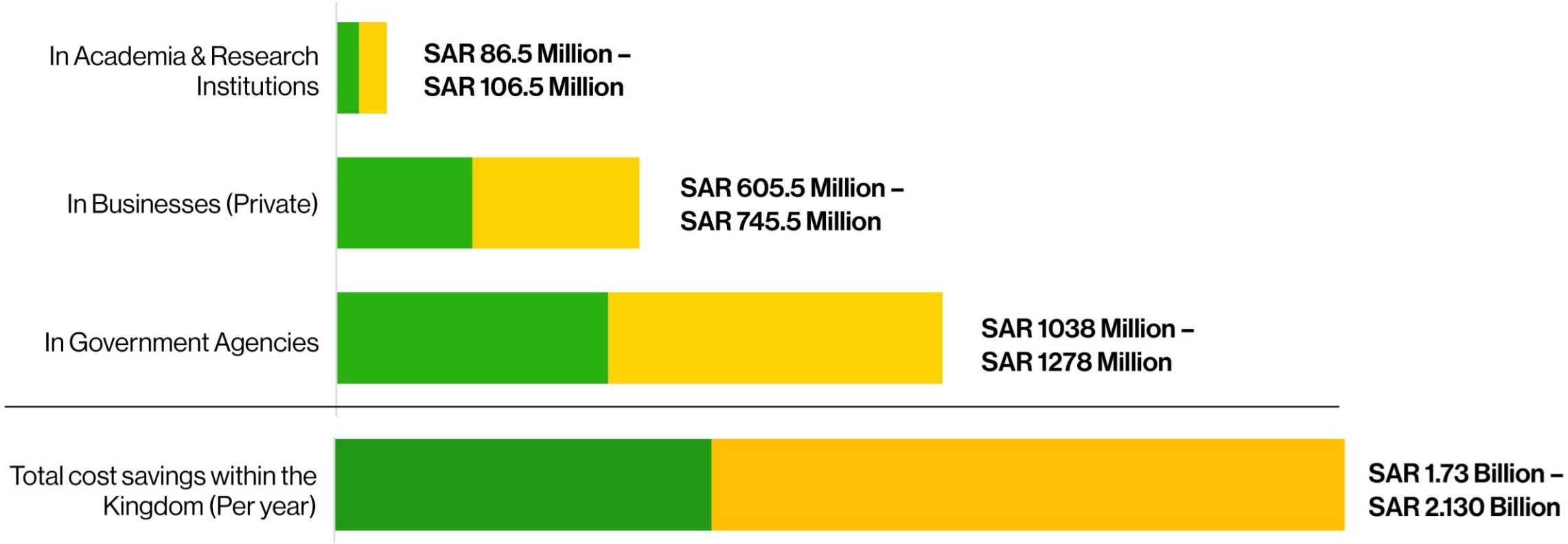
SOCIO-ECONOMIC IMPACT OF GEOSPATIAL DATA IN THE KINGDOM OF SAUDI ARABIA

ECONOMIC IMPACT OF NATIONAL GEOSPATIAL CENTRE – COST AND TIME SAVINGS



Source: Socio-Economic Impact Assessment of Geospatial Data, report prepared by Geospatial World and Produced by GEOSA

IMPACT OF THE NATIONAL GEOSPATIAL CENTRE (NGC) BY WAY OF COST SAVING BY REDUCING DUPLICATION



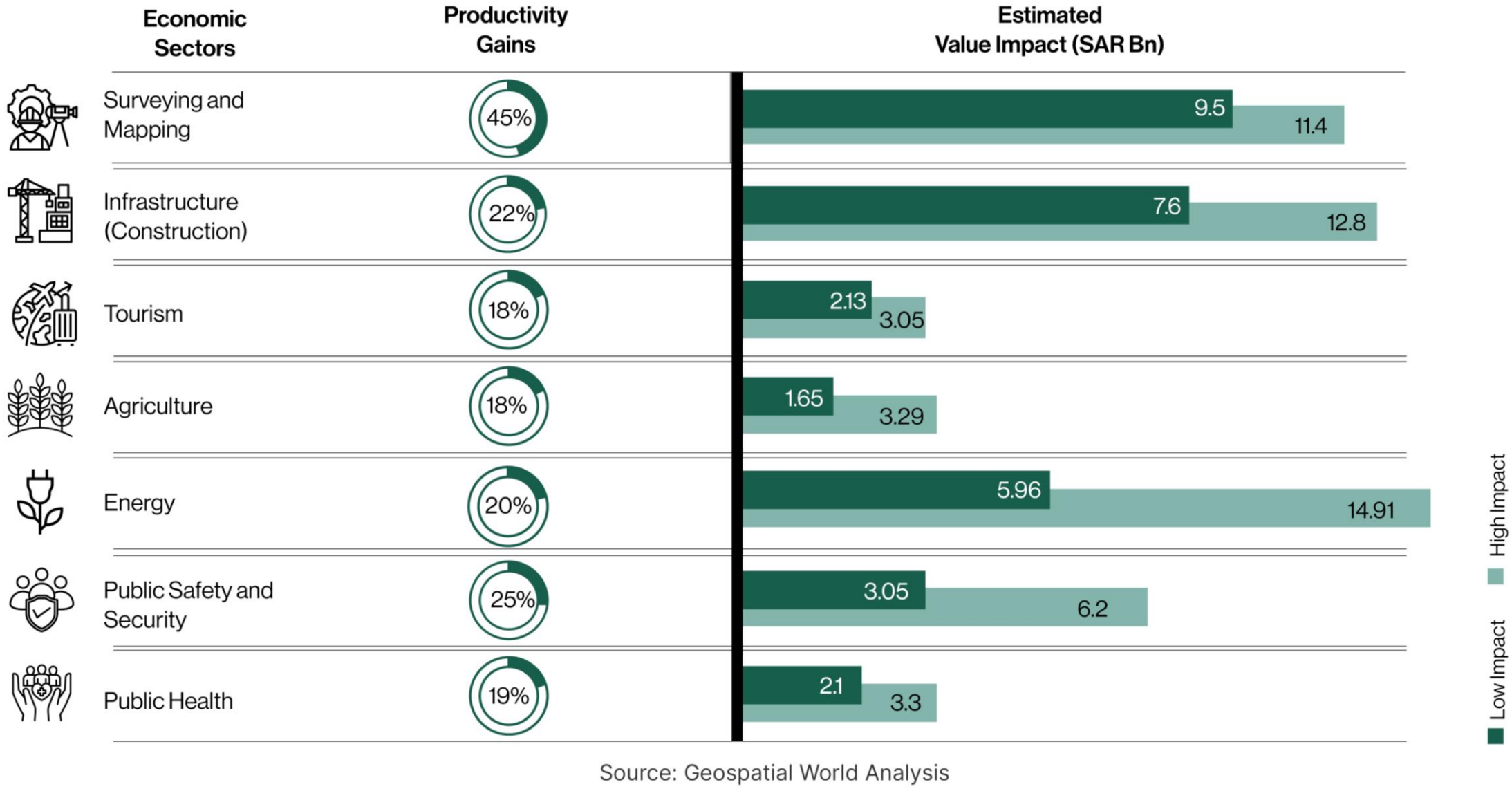
Note

- Includes analysis of 315 organizations who are currently using the National Geospatial Centre's National Data Governance Model
- The reduced duplication cost is indicative due to limited availability of datapoints pertaining to the reuse character of the datasets
- The Multiplier defined has been estimated using the three cost saving categories - and the number of times a data once collected can be reused by an organization.
- The multiplier considers the number of times on an average a data is reused by any stakeholder, which is 2-5 times in a year per organization depending on the size of the organization.

Range of Indirect Impact by way of cost savings

Source: Geospatial World Analysis

ESTIMATED GEOSPATIAL IMPACT ON PRODUCTIVITY GAINS IN ECONOMIC SECTORS



Source: Socio-Economic Impact Assessment of Geospatial Data, report prepared by Geospatial World and Produced by GEOSA

SOCIO-ECONOMIC IMPACT OF GEOSPATIAL DATA IN THE KINGDOM OF SAUDI ARABIA

CONSUMER IMPACT

Total Miles Saved using Geospatial Enabled Navigation Devices for Travel in KSA
3.105 BN MILES

Geospatial technology reduce travel time by 18% on average. The value of time saved is
SAR 21 BN

Consumers save more than
121 MN HRS
per year in travel time from using Geospatial-enabled navigation Devices. The value of time and fuel saved is
SAR 21.3 BN

Shopping/Purchasing Efficiency improvement using Geoservices is
SAR 16.87 BN

ECONOMIC AND BUSINESS IMPACT

Geospatial economy of the Kingdom in 2022 is approximately
SAR 17.3 BN

Geospatial industry generated revenue of approximately
SAR 13.70 BN
in 2022

Geospatial Impact on Productivity Gains from Economic Sectors in 2022
SAR 32 BILLION – SAR 55 BILLION

Total GVA Contribution to KSA – Directly of Geospatial Industry in 2022
SAR 10.98 BN

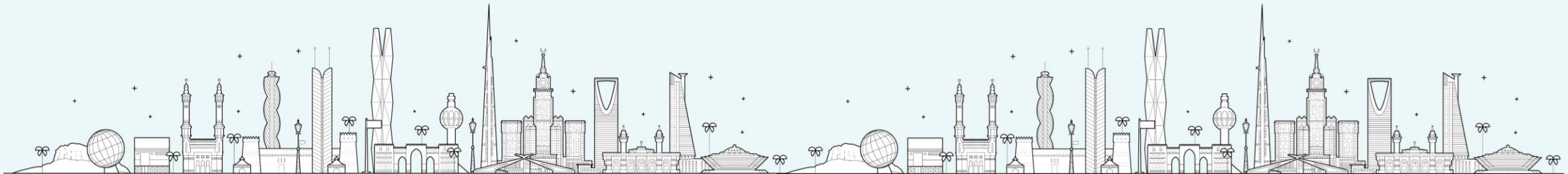
SOCIETAL IMPACT

1428300 TONS
of CO2 emissions from vehicles was reduced in the Kingdom on use of Digital Maps, through more efficient trips and reduced congestions.

Potential employment directly and indirectly linked to geospatial services
67840 JOBS
in 2022 (including foreign workers)

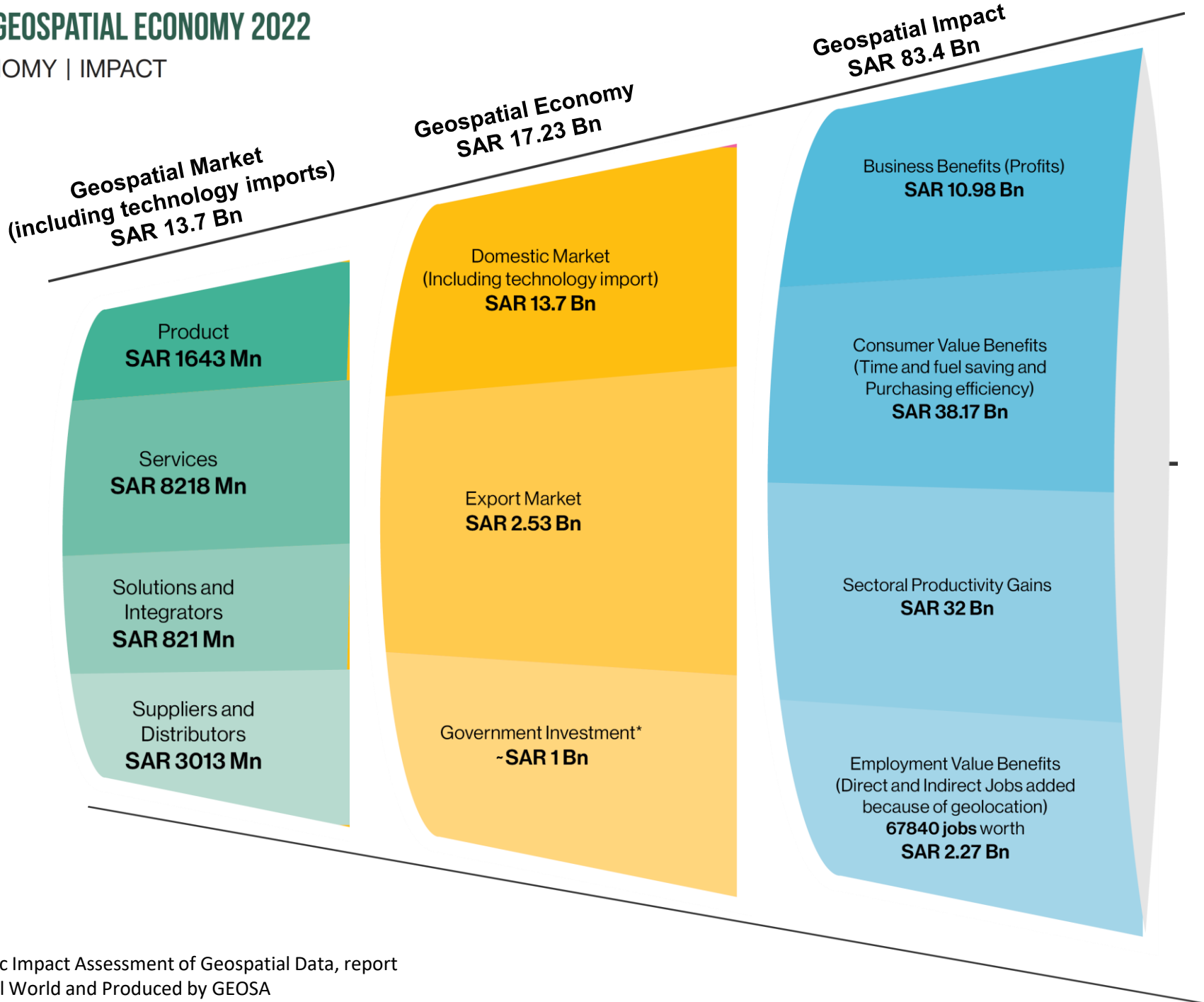
65%
of digital map users use maps to identify safe places when they feel in danger

42%
of digital map users state that it helps them improve their safety when driving, by avoiding dangerous areas and monitoring speed limits.



THE KINGDOM'S GEOSPATIAL ECONOMY 2022

MARKET | ECONOMY | IMPACT



Economic Impact of Geospatial Technologies in KSA

SAR 83.4 Bn

Source: Socio-Economic Impact Assessment of Geospatial Data, report prepared by Geospatial World and Produced by GEOSA

THANK YOU

GEOSPATIAL WORLD

ADVANCING KNOWLEDGE FOR SUSTAINABILITY