GEOSPATIAL
media + communications

Digital Transformation and Geospatial Industry: Trends and Way Forward

Maps are not just driving apps today!

they are driving economies too!!

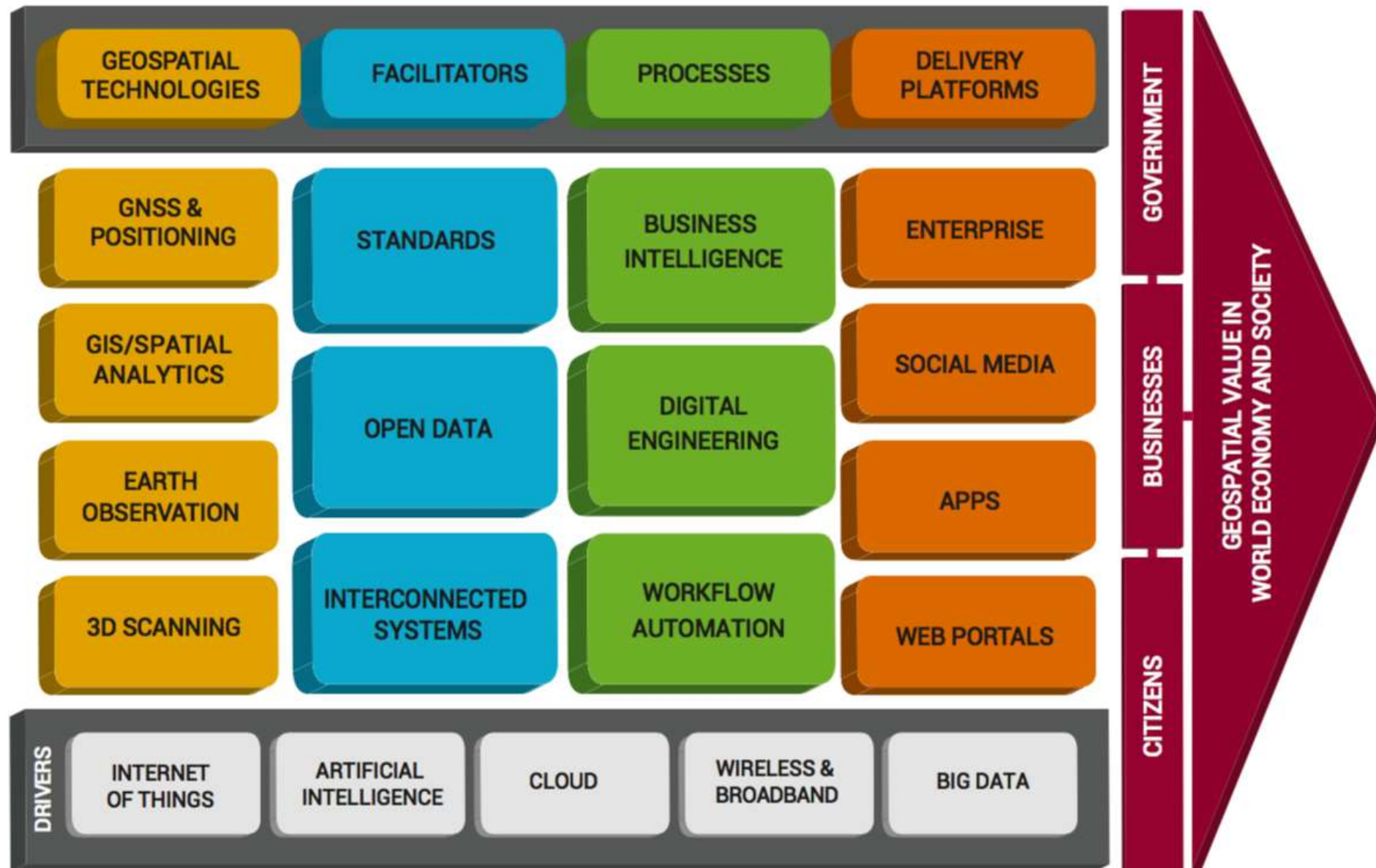# Geospatial Analytics will Eat the World and You Won't Even Know It

Forbes

The World Economy Runs on GPS

Space-technology-based data is important for in situ monitoring, and reliable geospatial information for sustainable development policy-making, programming and project operations

United Nations

Geospatial industry in Digital Ecosystem

Source: Geospatial Media Analysis

Earth Observation

Space	SAR Satellites	Optical Satellites	Video Satellite
Aerial	Aircraft	Unmanned Aerial Vehicle	Balloon
	Camera, LiDAR		
Terrain	Static	Mobile	Handheld devices
	LiDAR, Scanner, Total stations		Mappers, Geo taggers
Sub Surface	Ground Penetrating RADAR		Locator
Under Water	Submarine	Boat/Ship	Unamnned
	Bathymetric LiDAR, SONAR, Camera, Eco -Sounder		

Outdoor Positioning/Navigation

Space

Navigation Satellite Systems
(USA-GPS, EU-Galielo, Russia- GLONASS, China-BEIDOU, India-IRNSS)

Satellite-based Augmentation Systems
(India-GAGAN, VAS, IGNOS, MSAS, Japan-QZSS)

Terrain

Ground-based Augmentation Systems
(RTK Stations, CORS Networks)

Indoor Positioning/Navigation

Short range Radio Technology (Ultra Wide Band)

Magnetic Positioning

RFID

Indoor LiDAR/Scanner + Spherical Camera +SLAM

Blue Tooth Beacon

WiFi and Cellular Signals

Camera Systems

SLAM

Others Sources

Digital Transaction Data

Connected Devices/ Sensors Data

Business & Operation Data

Census- Demography Data

Crowd Source Data

Technology Drivers
→ Artificial Intelligence
→ Miniaturization of Sensors
→ Automation
→ Cloud as a Platform
→ Internet of Things

Market Opportunity
→ Improving World Economy
→ Growing Geospatial Market
→ Crowdsourced Data
→ Convergence of Technologies
→ Mainstreaming of Geospatial

Challenges
→ Skilling & Reskilling Workforce
→ Restrictive Regulations
→ User Mindset
→ Frequent Disruptions
→ Digital Vulnerability & Cyber Security

Way Forward
→ Coopetitive Business Models
→ Organic Growth with Strategic Alliance
→ Open Source and Standards
→ Enabling Public Policy
→ X-as-a-Service

Geospatial Industry Dynamics

Geospatial Industry: Global Overview

**Location Analytics & Business Intelligence Market**
- Navigation
- Real Estate
- Autonomous Mobility
- BFSI
- Smart City
- Hospitality
- E-commerce
- Fleet Management
- Healthcare
- Retail
- Media & Advertising

Professional User Domains
- Agriculture
- Urban Planning
- Defense & Intelligence
- Municipalities
- Utilities
- Natural Resources
- Climate & Environment
- Public Safety
- Disaster management

Commercial Companies
- Technologies
  - → GNSS & Positioning
  - → GIS/Spatial Analytics
  - → Earth Observation
  - → 3D Scanning
- Map Content
- Solutions
- Services

Autonomous and Robotics
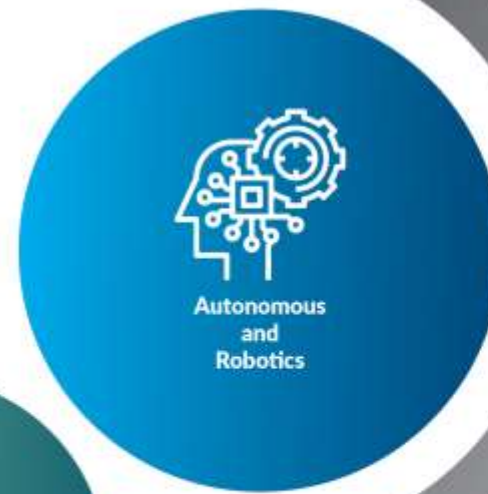
Future Lies in Automation

Convergence

Professional Geospatial Market

Architecture, Engineering & Construction Market
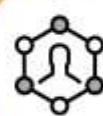- Transport Infrastructure
  - → Airports
  - → Ports
  - → Railways
  - → Road
- Industrial Infrastructure
- Buildings Infrastructure

National Geospatial Agencies
- National Mapping
- Earth Observation/Space
- Spatial Data Infrastructure
- Land and Cadastre
- Geological Survey
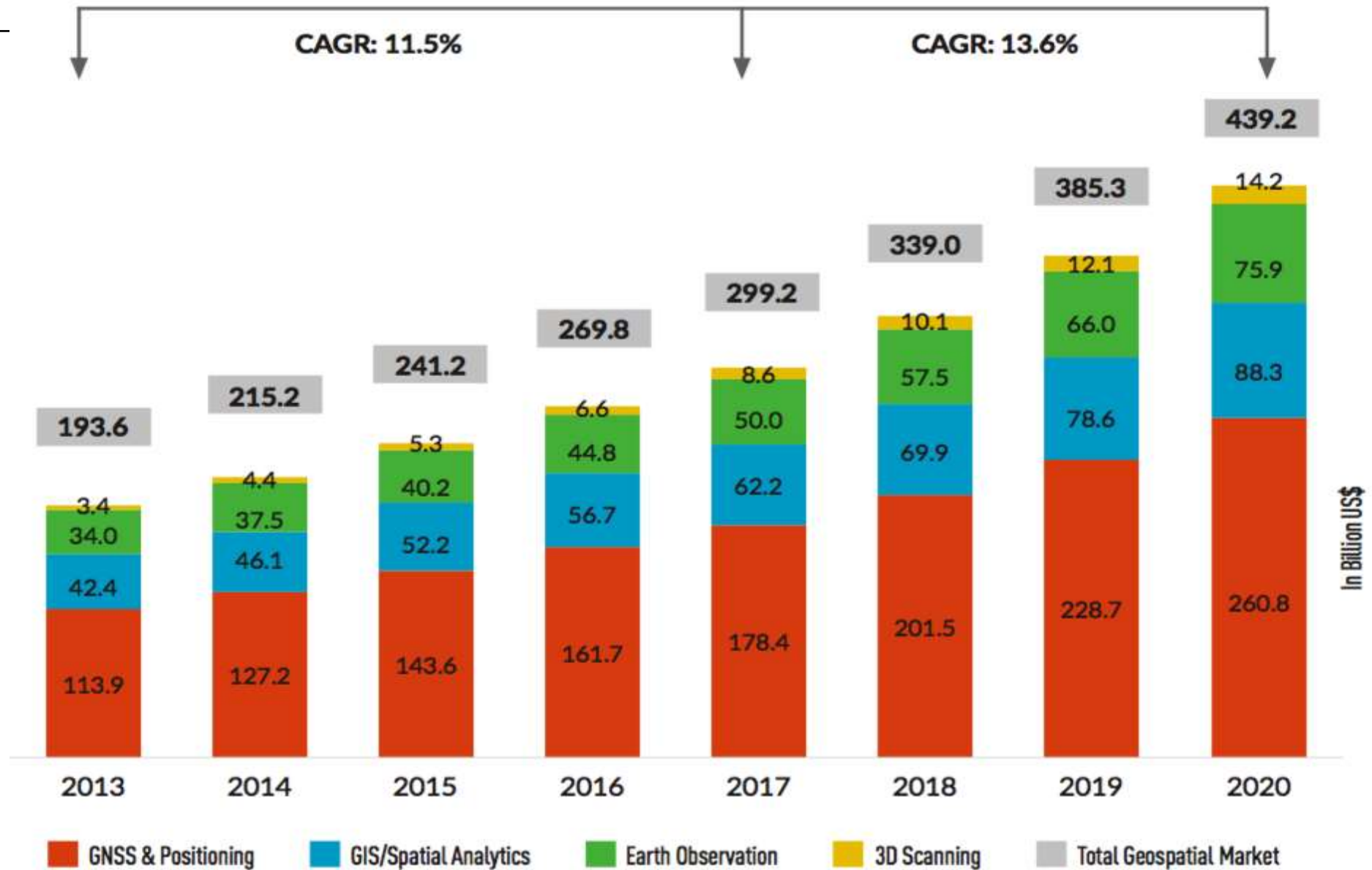- Statistical and Census

Thematic Mapping
- Forest Cover
- Water Resources
- Meteorological Department
- Soil Cover
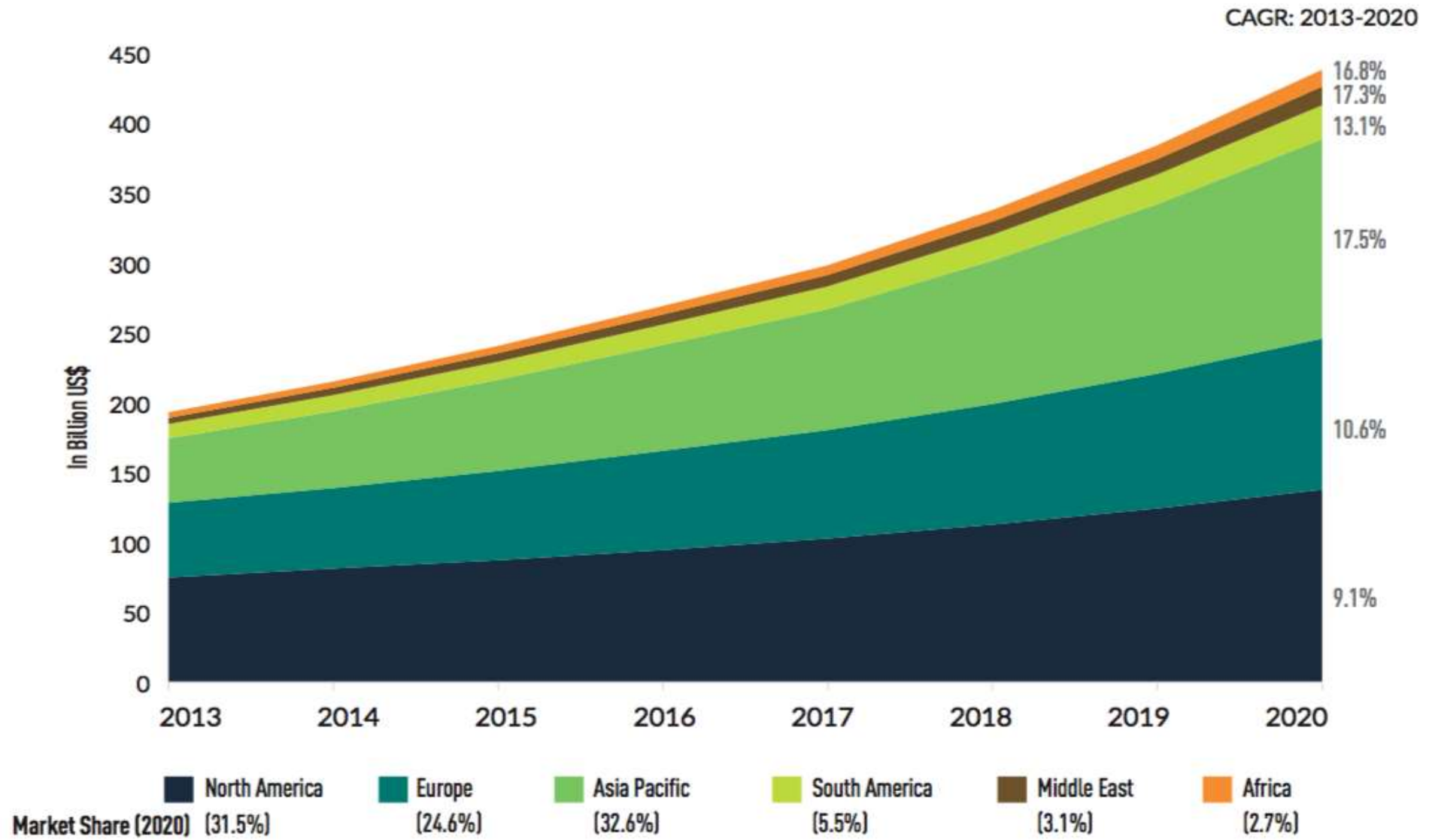- Land Use and Land Cover
- Hydrography

GLOBAL GEOSPATIAL MARKET SIZE

CAGR: 11.5% CAGR: 13.6%

In Billion US$

Year	Total	3D Scanning	Earth Observation	GIS/Spatial Analytics	GNSS & Positioning
2013	193.6	3.4	34.0	42.4	113.9
2014	215.2	4.4	37.5	46.1	127.2
2015	241.2	5.3	40.2	52.2	143.6
2016	269.8	6.6	44.8	56.7	161.7
2017	299.2	8.6	50.0	62.2	178.4
2018	339.0	10.1	57.5	69.9	201.5
2019	385.3	12.1	66.0	78.6	228.7
2020	439.2	14.2	75.9	88.3	260.8

Legend: GNSS & Positioning | GIS/Spatial Analytics | Earth Observation | 3D Scanning | Total Geospatial Market

Source: Adapted from Market Research Reports available in public domain (list available in the references section) and Geospatial Media Analysis

REGIONAL GEOSPATIAL MARKET SIZE

CAGR: 2013-2020

16.8%
17.3%
13.1%

17.5%

10.6%

9.1%

In Billion US$

2013 2014 2015 2016 2017 2018 2019 2020

North America	Europe	Asia Pacific	South America	Middle East	Africa
Market Share (2020) (31.5%)	(24.6%)	(32.6%)	(5.5%)	(3.1%)	(2.7%)

Source: Adapted from Market Research Reports available in public domain (list available in the references section) and Geospatial Media Analysis

ECONOMIC IMPACT OF GEOSPATIAL SERVICES

CONSUMER BENEFITS

Consumers value digital maps at up to **US$105 PER USER** resulting in total benefits of **US$347 BILLION PER YEAR.**

Digital maps reduce travel time by **12% ON AVERAGE.** The value of time saved is **US$264 BILLION** based on local wage rates.

Consumers save more than **21 BILLION HOURS** per year The value of time saved is **US$283 BILLION.**

BUSINESS BENEFITS

Geospatial services industry generated revenue of approximately **US$400 BILLION IN 2016.**

Geospatial services productivity impact in sectors representing **75% OF GLOBAL GDP.**

Digital maps have supported over **US$1 TRILLION** of yearly sales for businesses.

SOCIETAL BENEFITS

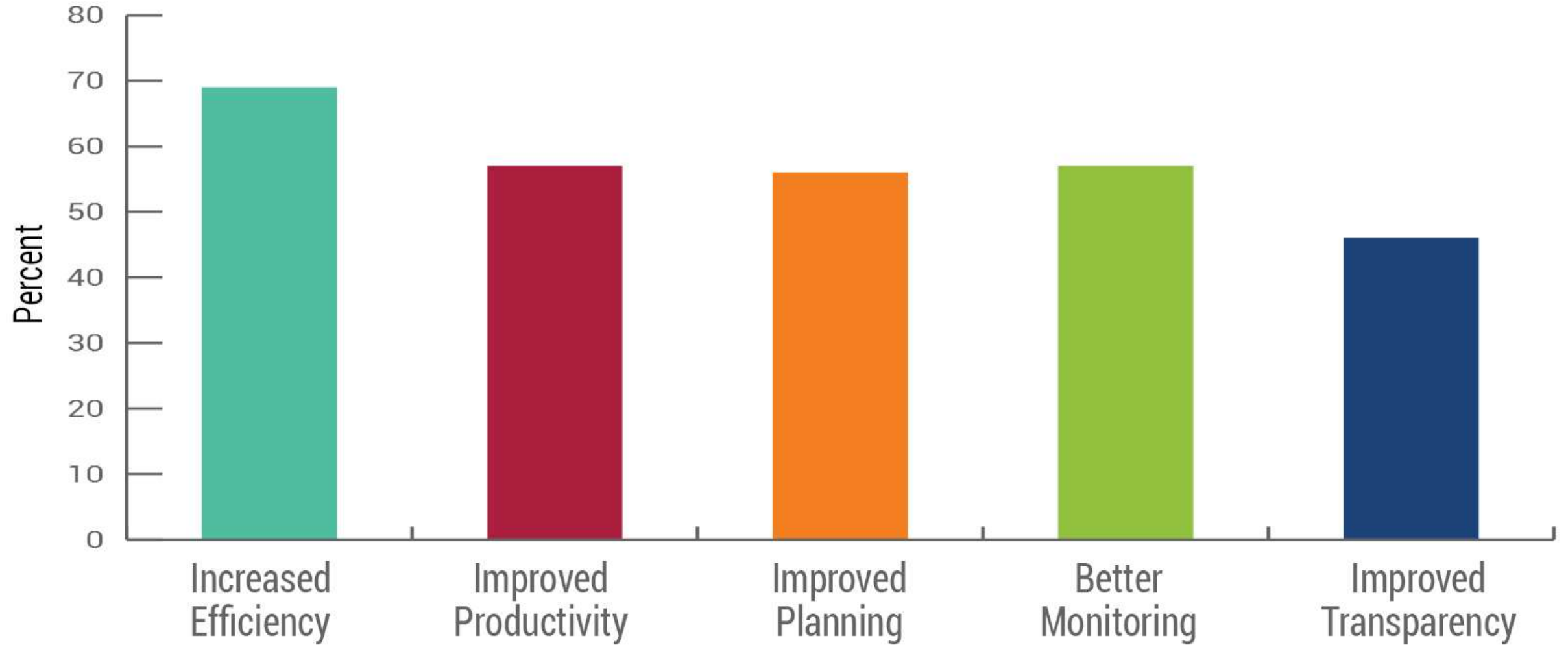CO2 emissions from vehicles could be reduced by **1,686 MILLION MT** efficient trips, reduced congestions.

Potential employment directly linked to digital maps of over **4 MILLION JOBS GLOBALLY.**

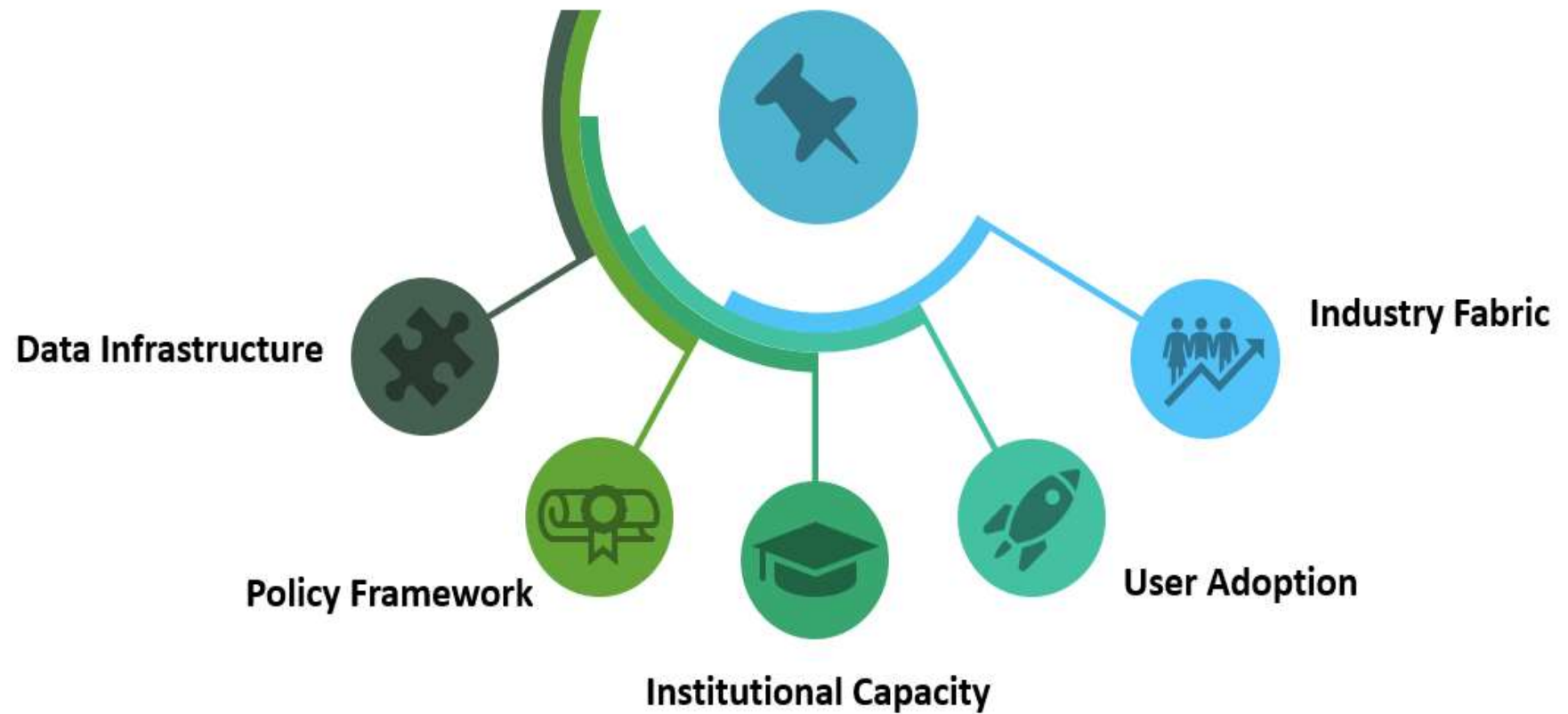Emergency response times **DECREASED BY 20%** resulting in more lives saved.

Source: Alphabeta Report 2017

BENEFITS and VALUE

Business Models

01 X - As a Service

02 Coopetition & Partnerships

03 Subscription/ Pay-per-use

04 Consultation

05 Platforms

Countries Readiness

Delta Ranking 2018

COUNTRY	Regional Rank
USA	1
Canada	2
Brazil	3
Columbia	4
Chile	5
Mexico	6
Uruguay	7
Costa Rica	8
Jamaica	9
Dominic Republic	10
El Salvador	11