

Integrating IoT and ArcGIS

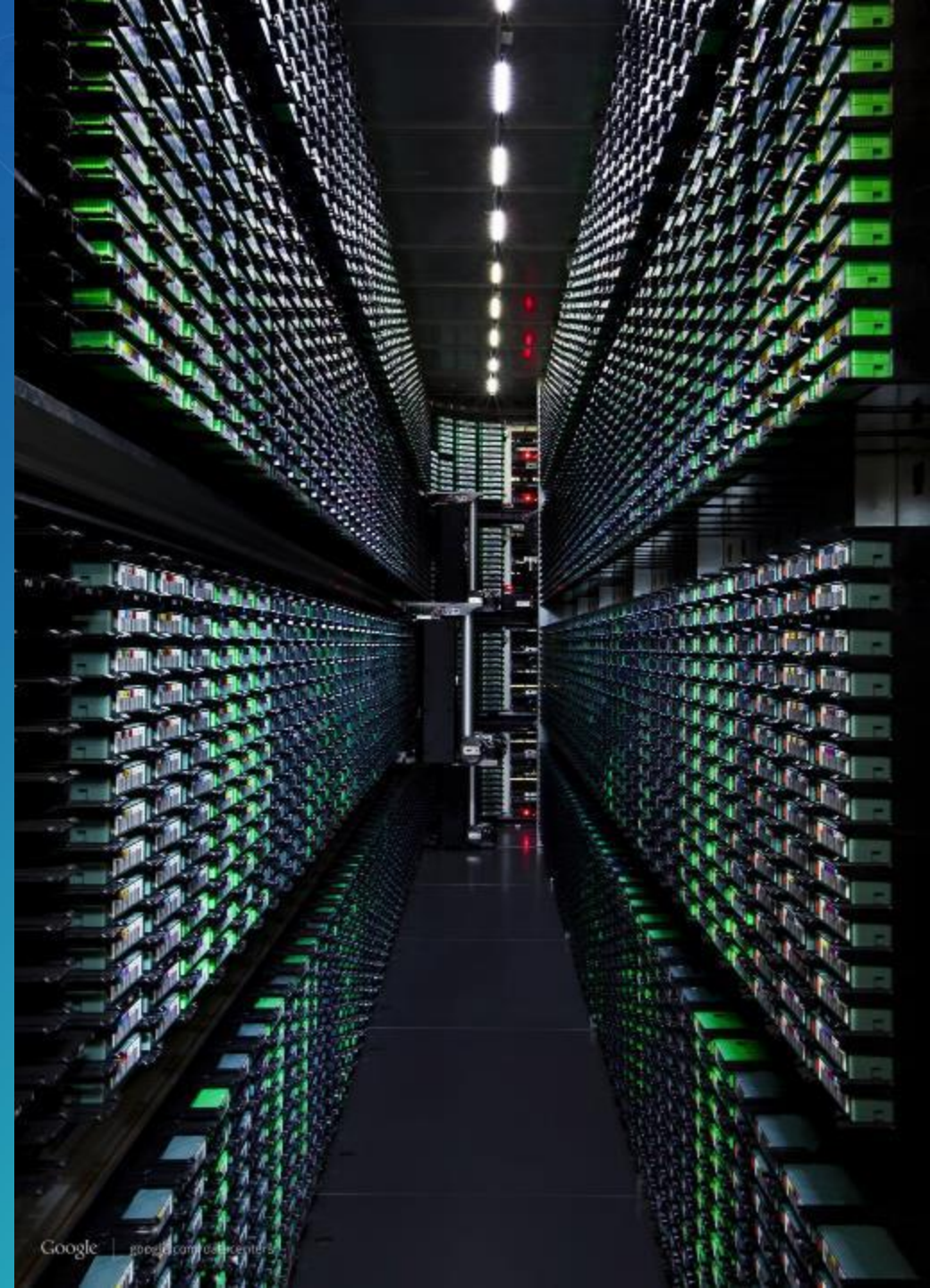
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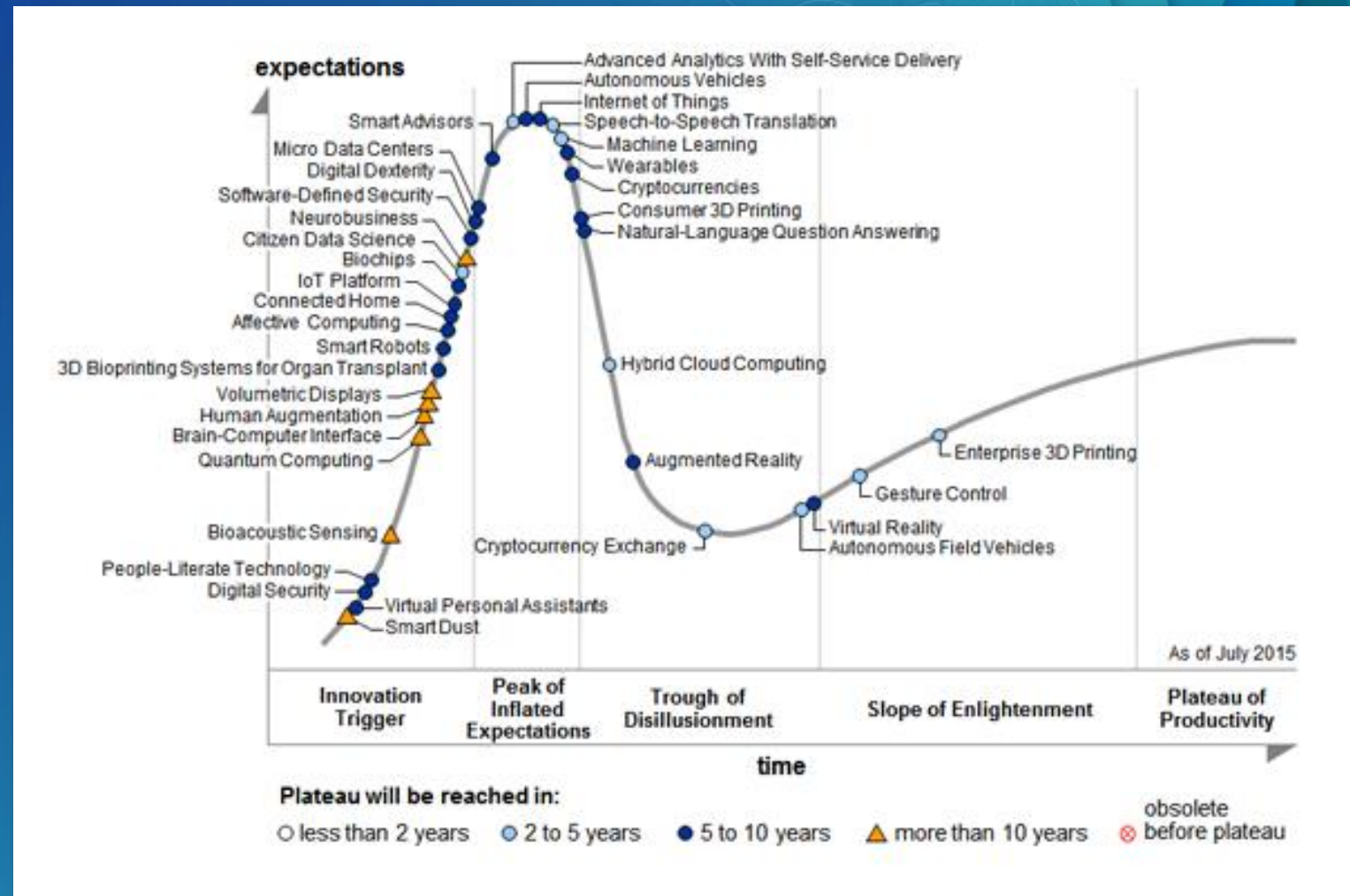
Integrating IoT and ArcGIS

- How can you connect ArcGIS to the Internet of Things?
- Discuss capabilities of ArcGIS with respect to ingesting, analyzing, and sharing real-time data to improve your decision-making process.
- Present real-world scenarios from several industries.
- Discuss specific product capabilities for real-time data, big data, and geoanalytics.



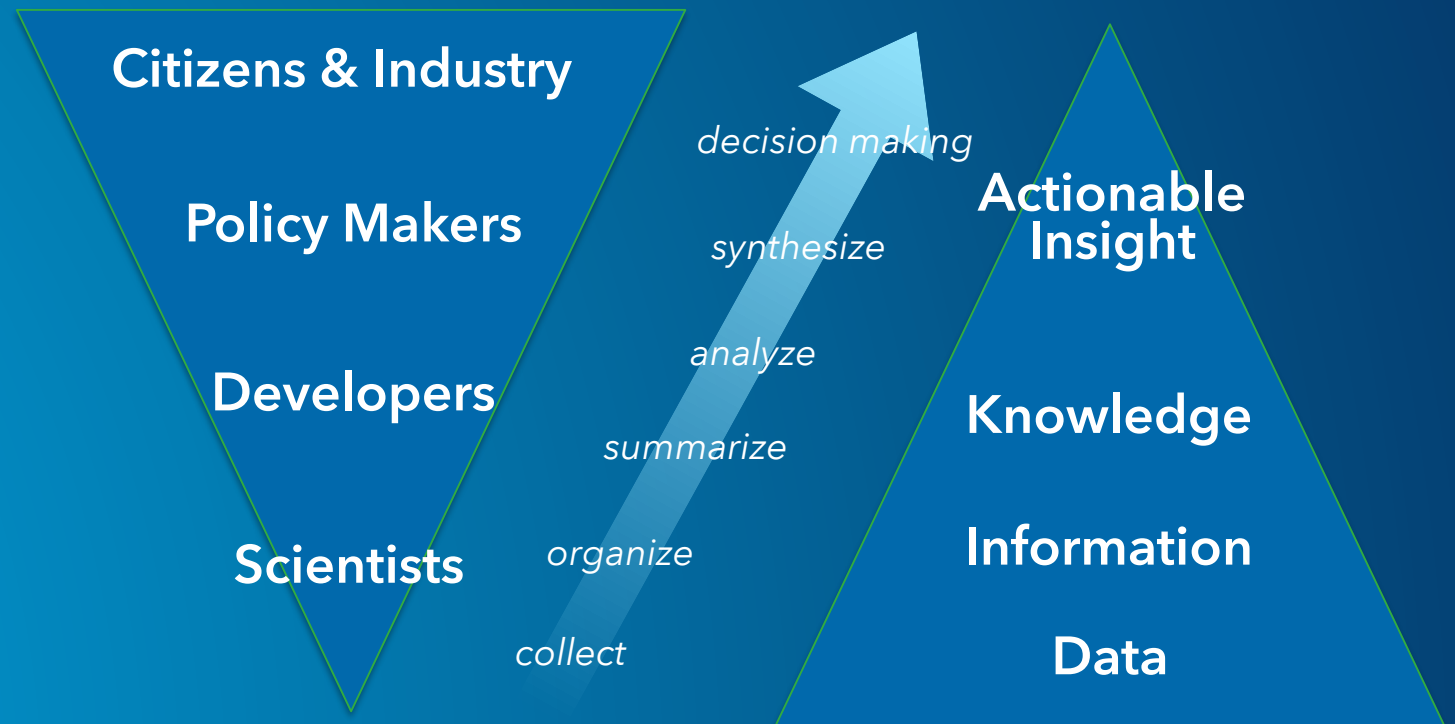
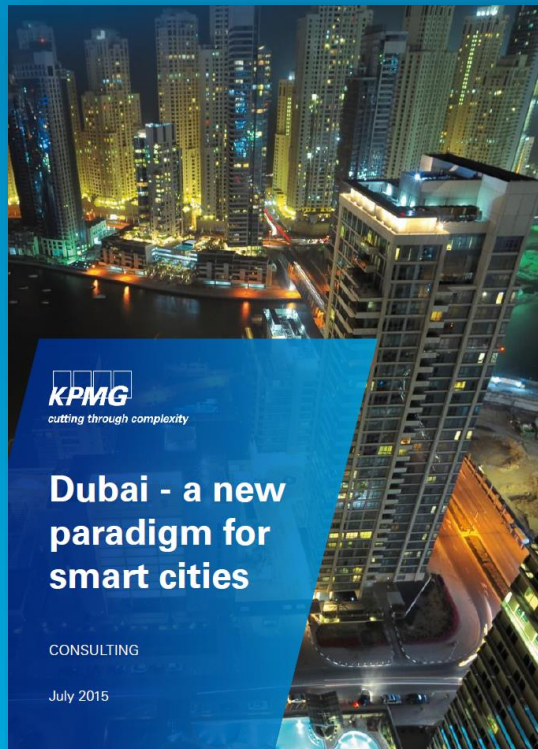
IoT or Real-time GIS or Big Data

- What is IoT?
- History of Real-time Systems
- IoT and Big Data Systems

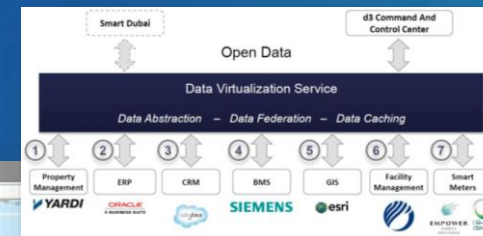
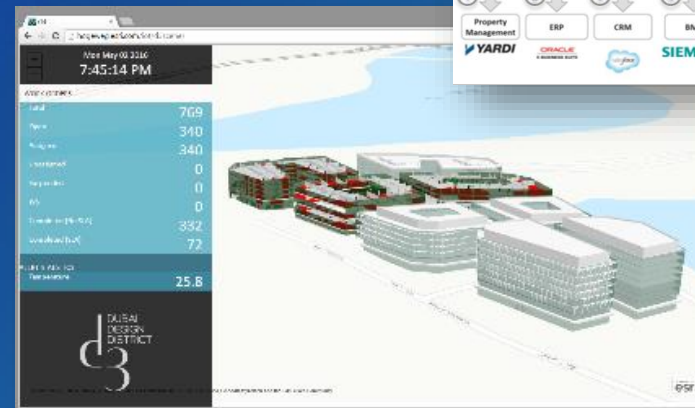
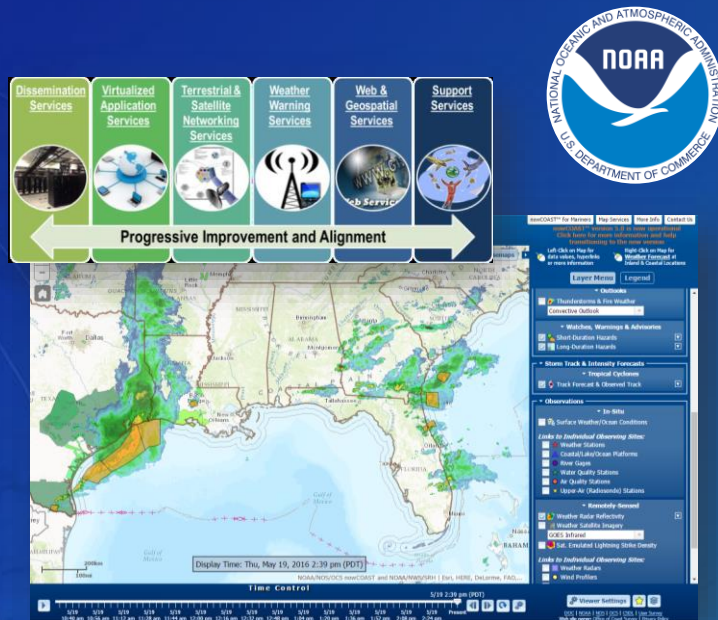


We're Moving From a Data Society to a Knowledge Society

- Improve government, business, and community decisions and knowledge by transforming data capabilities and supporting a data-enabled economy



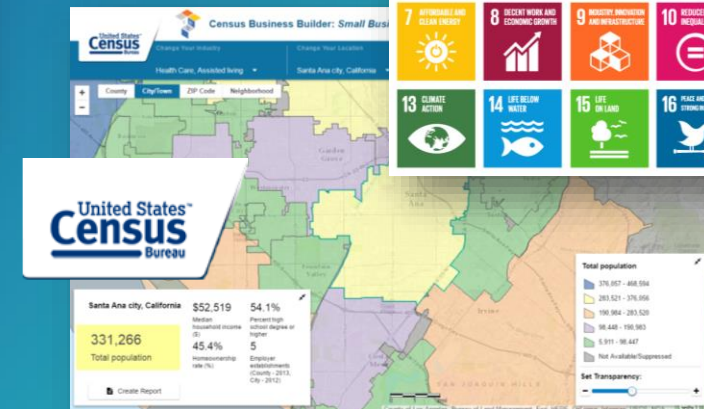
Big Data / IoT Take On Different Forms



Velocity

Volume

Variety



Integrate Remotely Sensed Data

Enable the Community to Leverage Government Open Big Data

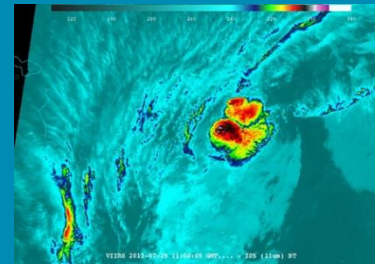


Many Sensors

- POES
- GOES
- DMSP
- Jason-2
- Suomi NPP
- GOES-R

Intelligent Imagery

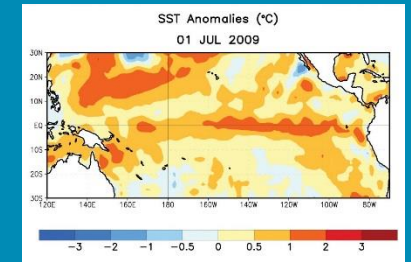
Tropical Storms



Sea Surface Temperature



SST Anomalies



Integrate Real Time Data

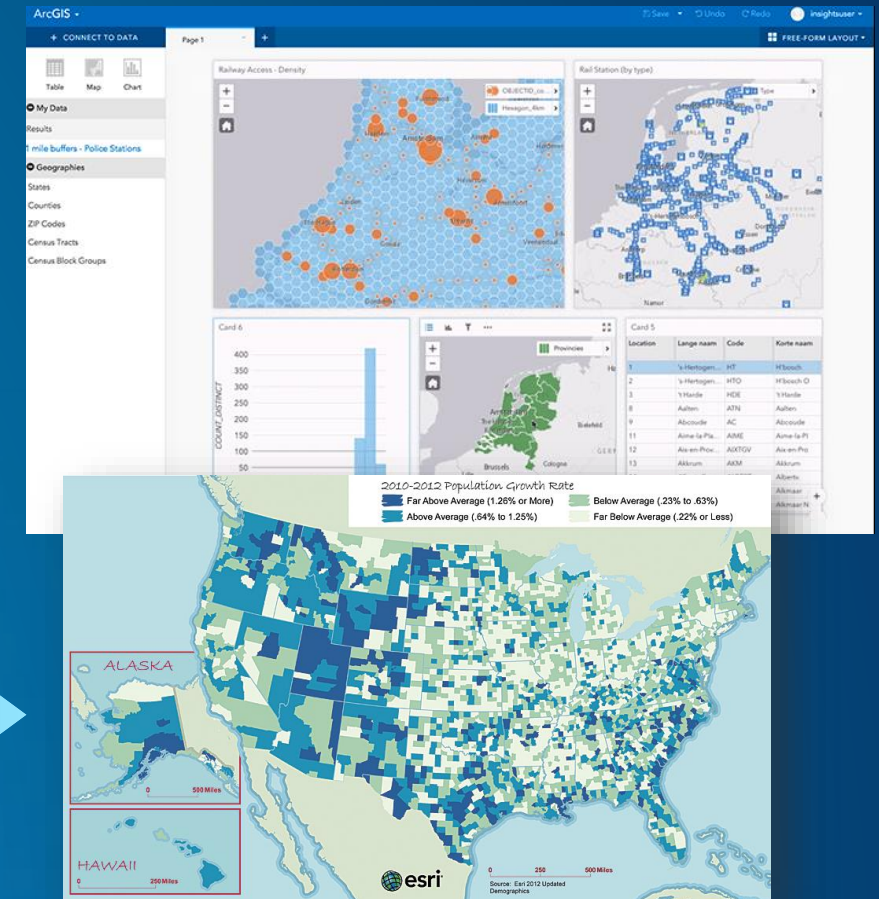
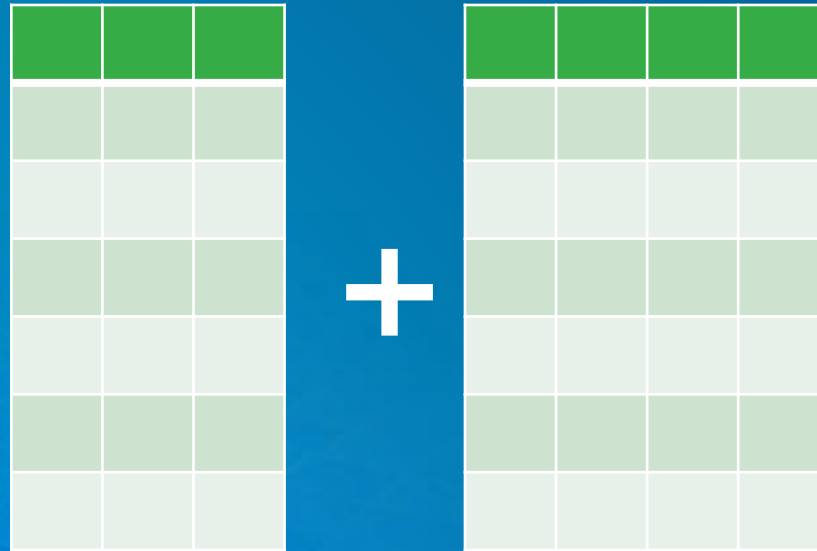
Continuous Processing and Analysis Supporting Operations and Decision-Making



Integrate Many Types of Data

Analyze Communities, Provide Insight

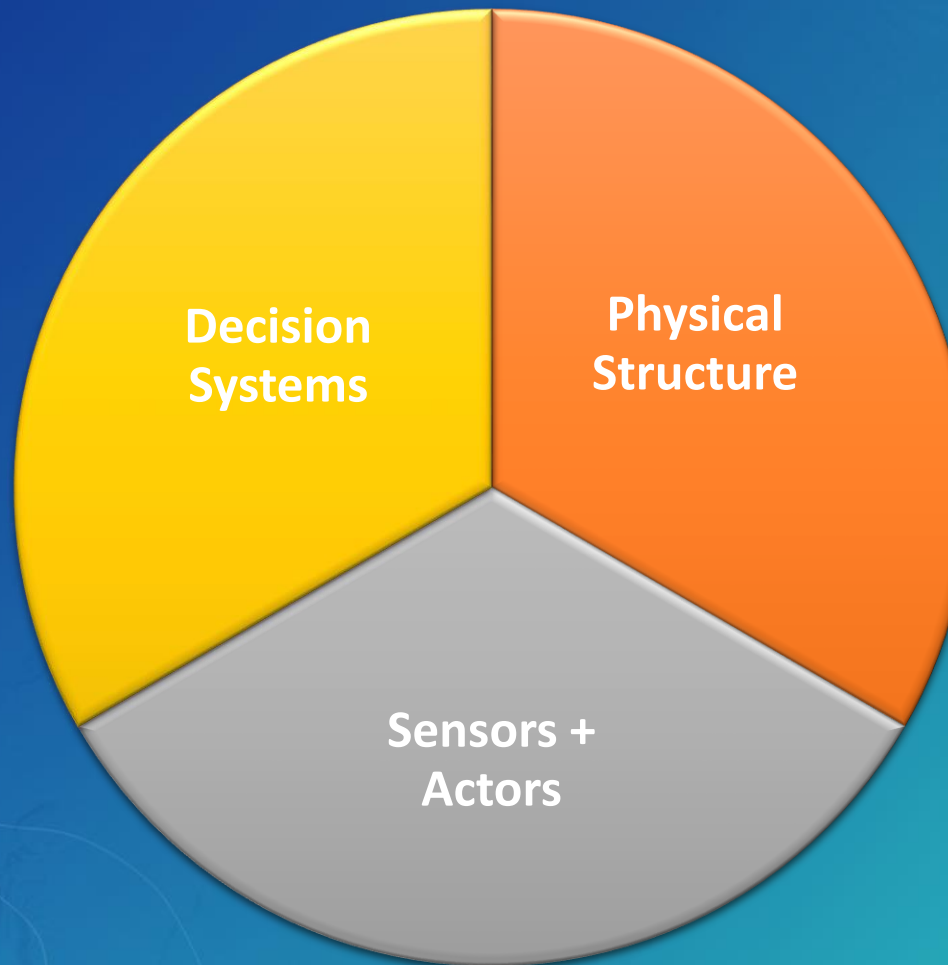
- 2013/2018 Demographics
- Access to Care
- Adult Preventive Services Use
- American Community Survey
- Birth Measures
- Building Permits
- U.S. Business Locations
- Business Summary
- Census 1990 Demographics
- Census 2000 Demographics
- Census 2010 Demographics
- Consumer Spending
- Crime Indices
- Death Measures
- EPA Enforcement
- Food Access
- Food Consumption
- Food Stamps



Decomposing an IoT Solution

Decision Support Systems

- design and planning
- strategic decision making
- scenarios, alternatives, options
- 3D visualization
- stakeholder engagement
- open data
- app empowerment
- reporting and storytelling
- 'geodesign'



Physical Urban Structure

- “built environment”
- intelligent transportation systems (ITS)
- smart grid / smart metering
- smart parking
- high performance buildings
- green infrastructure
- etc...

Sensors and Remote Actors

- IoT
- ubiquitous computing
- embedded sensors
- big data + analytics
- reality capture (e.g. drones)
- information infrastructure ‘cloud’
- etc...

Cisco, Siemens, IBM ‘Smart City’

Deployment Patterns

- On-premises
- As-a-service

The Proof of the Pudding...

Commercial

- Financial Services
- Insurance
- Logistics / Trucking
- Manufacturing
- Media & Entertainment
- Real Estate
- Retail

Defense and Intelligence

- Intelligence
- Military Operations

Public Safety

- Emergency / Disaster Mgmt
- Fire, Rescue, EMS
- Homeland Security
- National Security
- Law Enforcement
- Special Events

Natural Resources

- Agriculture
- Forestry
- Mining
- Oil & Gas
- Pipeline

Health & Human Services

- Hospital & Health Systems
- Pharmaceuticals
- Public Health

Transportation

- Aviation
- DOT
- Railways
- Maritime & Ports
- Public Transit

Government

- National
- State
- Local

Utilities

- Electric & Gas
- Teleco / Cable
- Public Works

Water

- Water resources
- Water / wastewater / stormwater

Professional Services

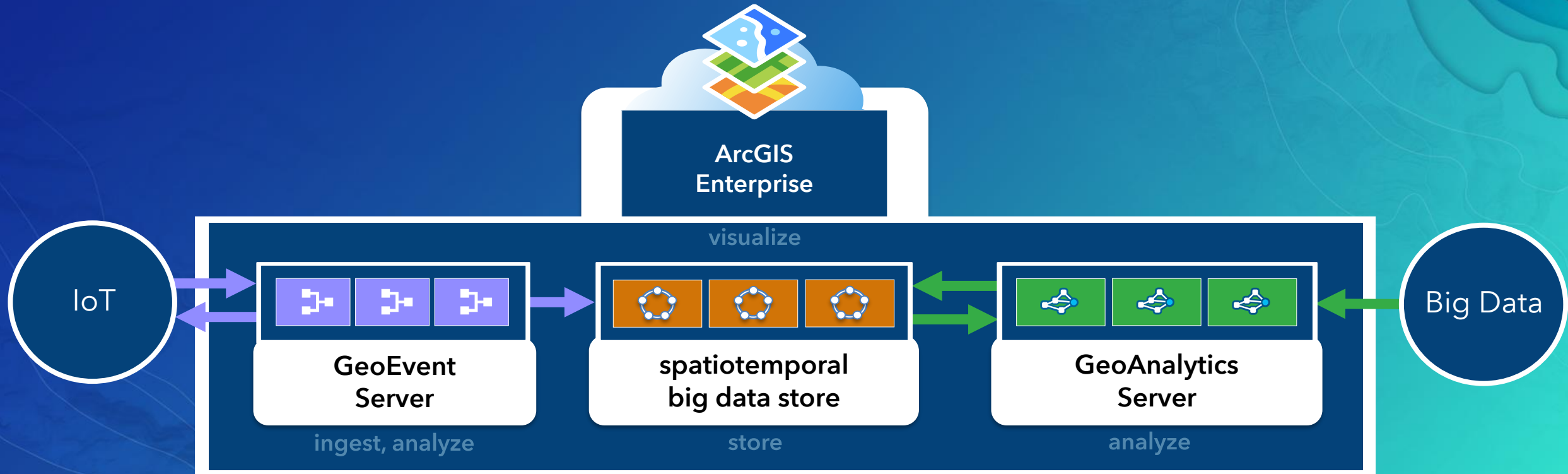
- AEC
- Environmental Mgmt
- GIS & IT

Nonprofits & Education

- Conservation
- Humanitarian
- Sustainable Development
- Higher Ed
- Research/Science Institutions

1,000+
Organizations
80
Countries

Geospatial Analysis as part of IoT Solutions



Trends in IoT

- Cloud Providers Moving into IoT
- New Solution Providers
- Esri Plans



esri

THE
SCIENCE
OF
WHERE