



# Legal and Policy Frameworks Around Geospatial Information Management

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## Objectives

- What Are the Unique Aspects of Geospatial Information From a Legal and Policy Standpoint?

## Geospatial Information Management Undergoing Tremendous Change

- Collection of Geospatial Information
  - Small Satellites
  - Mobile devices
  - Unmanned Systems (Air, Ground, Maritime)
  - Internet of Things
- Use of Geospatial Information
  - Software
  - Computing Power
  - Machine Learning

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## Geospatial Information Management Undergoing Tremendous Change

- Distribution of Geospatial Information
  - Standards
  - Technical interoperability
  - API's
- Storage of Geospatial Information
  - Cloud
  - Distributed Networks

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## Increased Awareness of Value of Geospatial Information

### **Governments**

- Spatial Data Infrastructures
- Place-based policies
- Sustainable Development Goals
- Climate Change
- Homeland Security/Law Enforcement
- Disaster Response

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## Increased Awareness of Value of Geospatial Information

### **Businesses**

- Location Based Services
- Business Intelligence
- Internet of Things
- Visualization
  - Customers
- Tracking
  - Assets
  - Employees

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# Increased Awareness of Value of Geospatial Information

## Individuals

- Navigation
- Social Media
  - WhatsApp
- Loved Ones
  - Monitoring elderly parents and children
- Gaming
  - Pokémon

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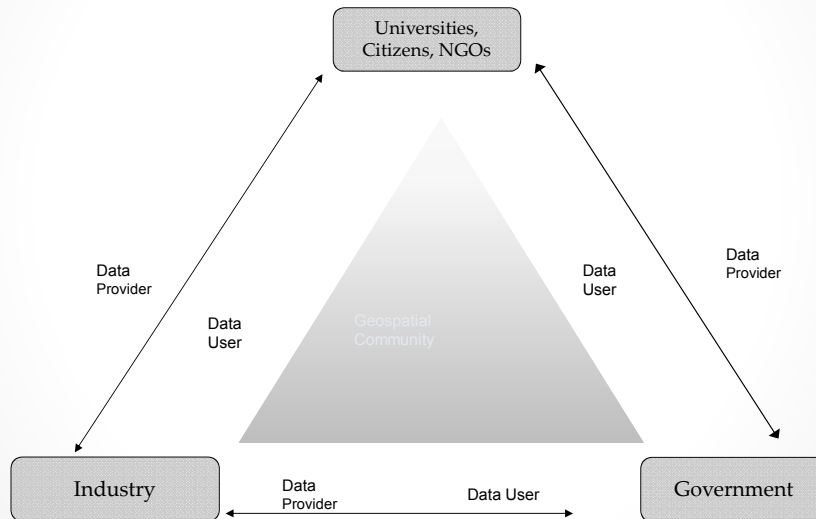
## Growing Evidence Supporting Value of Geoinformation

- Google study (2012)
  - Geospatial services companies generate \$1.6 Trillion in revenue and \$1.4 Trillion in cost savings
- Ordnance Survey of Ireland study (2014)
  - Total value add to economy - 126.4 Million Euros
  - FTE Jobs in total economy - 3,078
- Natural Resource Canada study (2015)
  - \$21 billion of value to Canada's Gross Domestic Product (1.1%),
  - generate approximately 19,000 jobs in Canada's economy

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## A Geospatial Ecosystem In Which Everyone is a Data Collector and User



## Geospatial Information

- **Versatile**
  - A data set can be used in a number of different applications, but . . .
  - Doesn't mean data is suited for all such uses
- **Geospatial information and other types of big data are relatively new, ...**
  - and applications using them are evolving
- **Creating a new ecosystem**
- **Cuts Across Technology Platforms ....**
- **And legal/policy domains**

# Unique Aspects of Geospatial Information

- **Privacy**
  - Uncertainty over privacy from a location standpoint
  - Difficult to put location into existing privacy framework
  - Spatial data is critical to so many important applications
- **Data Quality/Liability**
  - New Applications
  - Versatility
  - Little precedent
- **Intellectual Property**
  - Role of Government Data
  - Variety of Sources
  - Uncertainty Associated with Copyright
- **Defense/Intelligence Roots**
- **Sector specific regulations**
  - Satellites, drones, autonomous vehicles

Risk that laws, regulations, precedents, policies developed to address one user groups use of geospatial information will impact other uses.

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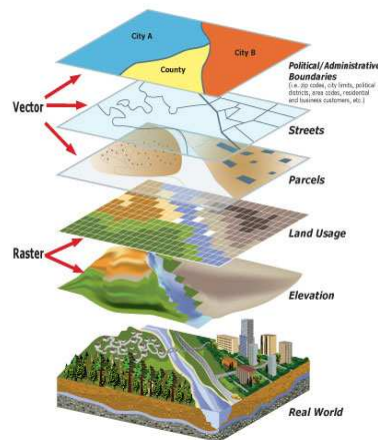
# Why Legal Issues Are Important?

Geospatial products and services are increasingly be developed using data from a variety of sources

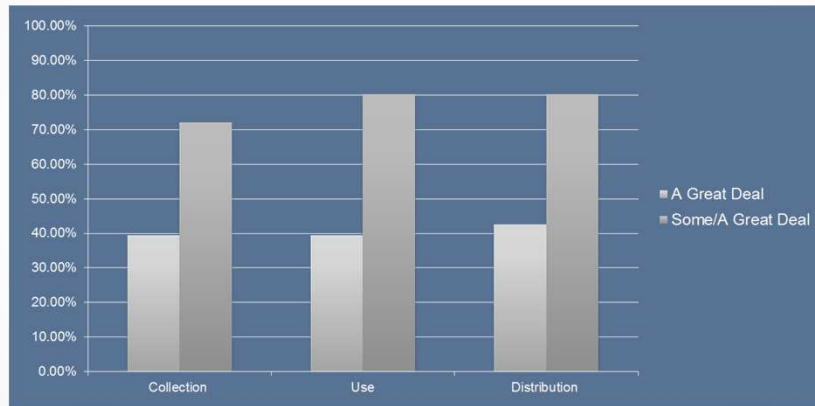
- Government
- Industry
- Crowd

Each are subject to their own licenses/data sharing agreements with varying terms/restrictions

Licensing becoming more complex and increases risks

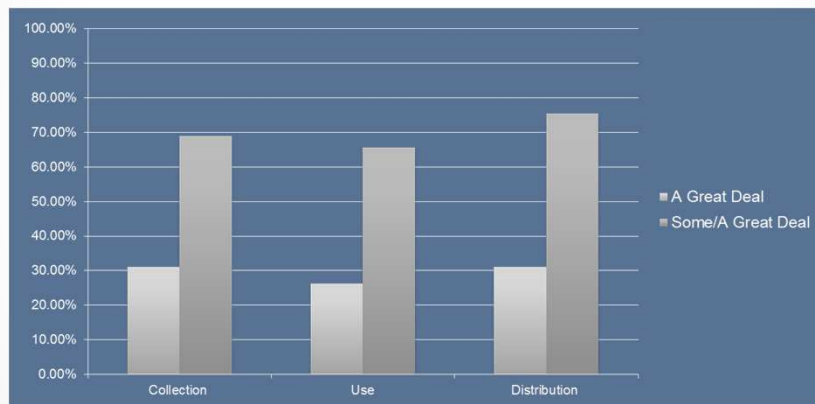


## UN-GGIM Survey Impact of Privacy Concerns



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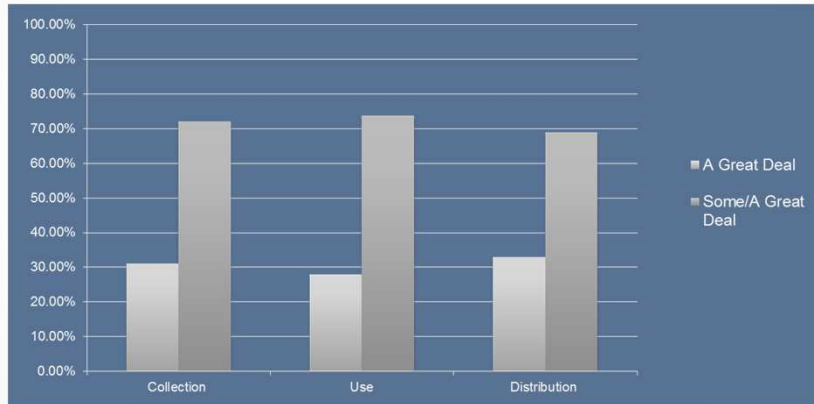
## UN-GGIM Survey Impact of Liability Concerns



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# UN-GGIM Survey

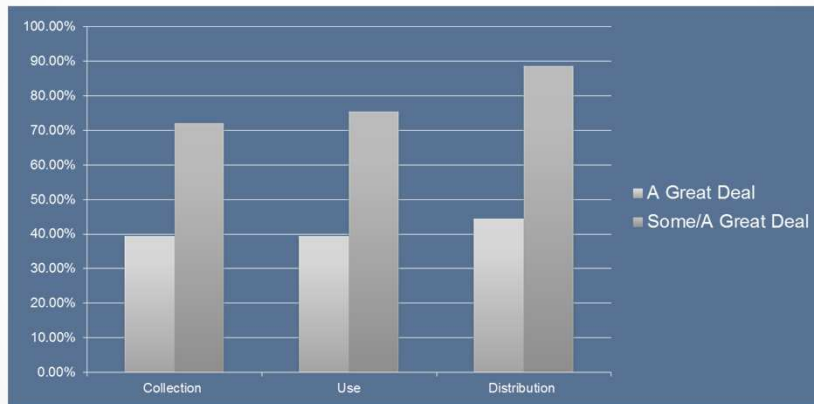
## Impact of National Security Concerns



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# UN-GGIM Survey

## Impact of Licensing/Data Sharing Concerns



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## Legal Issues Impact All Stakeholders in Geospatial Community

- **Government Agencies**
  - Law Enforcement, Homeland Security, FEMA, Census
- **Mapping, Navigation, Remote Sensing**
  - Garmin, Digital Globe, Pictometry
- **Internet and Social Media**
  - Google, Facebook, Twitter
- **Future Technologies**
  - Augmented Reality, Smart Grid, Autonomous Vehicles

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## Conclusions

- Geospatial Information Management Undergoing Tremendous Change
- Increased Awareness of Value of Geospatial Information by Governments, Industry and Individuals
- As a result, geospatial information is becoming common
- Creating a Geospatial Ecosystem where government, industry and the "crowd" (citizens, NGO's, research organizations, etc.) are both collectors and users of geospatial information, often simultaneously.
- Many unique aspects of geospatial information from operational and legal/policy standpoint.
- Having an impact on use across entire geospatial community