



“Big Data—No Problem

**Big Analytics in a Secure Environment—Problem
A US Economic Analysis”**

Dr. Lorraine Tighe, SGS

Dr. Shawana Johnson, GMI

Agenda

- Introduction
- Problem Definition
- Cyber Threat Landscape
- Challenges
- Example Solution
- Summary

Big Data – No Problem?

- An organization's ability to execute its critical responsibilities depends on the confidentiality, integrity and availability of secure facilities, computer systems, data and workflows that support its mission **ALONG WITH** the methods to analyze that data.
- Without the right security and encryption solution in place, however, big data can mean big problems.



- Big data focus so important to GEOINT it was highlighted by Robert Cardillo, Director, NGA.



Today's Work Environment

Numerical Intensive:



Data Intensive:



Graphics Intensive:



Modeling, Simulation & Analytics:



Collaborative Decision Support:



Do this all in (near) Real-Time.

Zeroing in on the Problem: The Iron Triangle

“Access”

Traditional
Business
Models
Supporting
Government & Industry

“Quality”

“Cost” or Investment

Outmoded Business Model

- Assumption is that quality, exclusivity and expense correlate to an outcome.
- It is futile to think that current business models can ever extend beyond the “elite” and those with means.
- Fuels endless debates, bureaucracy, funding, standards, etc.

Access = Security, On demand (Cloud), ISV-enabled or Licensable Applications, Network Capacity
Quality = Expertise, Cultural Inertia, Politics, Client’s Time Availability, Trust



Cyber Threat Landscape

The Security Triad, known as CIA consist of

- **Confidentiality**
 - **Integrity**
 - **Availability**

Secured Big Data – No Problem?

- How can security checks "required be executed in an extremely short time" ?
- How do we empower the Data-driven Organization to generate real-time, actionable insights from 100% of the data that matters using our proven analytics, services and solutions -- all within a **secure environment**?
- Modern methods for the identification of cyber threats increasingly involve techniques featuring cross-analysis of data coming from several different sources-and these techniques further increase the need for big compute capacity which is secure.



Cyber Threat

Common Modes of Hacking

- Internal penetration
- External penetration
- Information gathering
- Networks
- Application
- Workflow
- Denial-of-Service
- Physical security
- Authentication systems
- Database, Data Lakes
- Stolen equipment
- Social “re-engineering”

Attack Methodology or Vector

- Performing reconnaissance
- Scanning and enumeration
- Gaining access
- Escalation of privilege
- Maintaining access
- Covering tracks and placing backdoors

**How do we properly
protect security of
data in the IoT?**



A Solution: MORE Opportunity™

(Maximizing and Optimizing Research and Educational Opportunity)

Agility
(The “New Capability”)

Break free from the Iron Triangle by applying a new business model as an active, working Public-Private Partnership.

Wide Scalability

Focus on Underserved

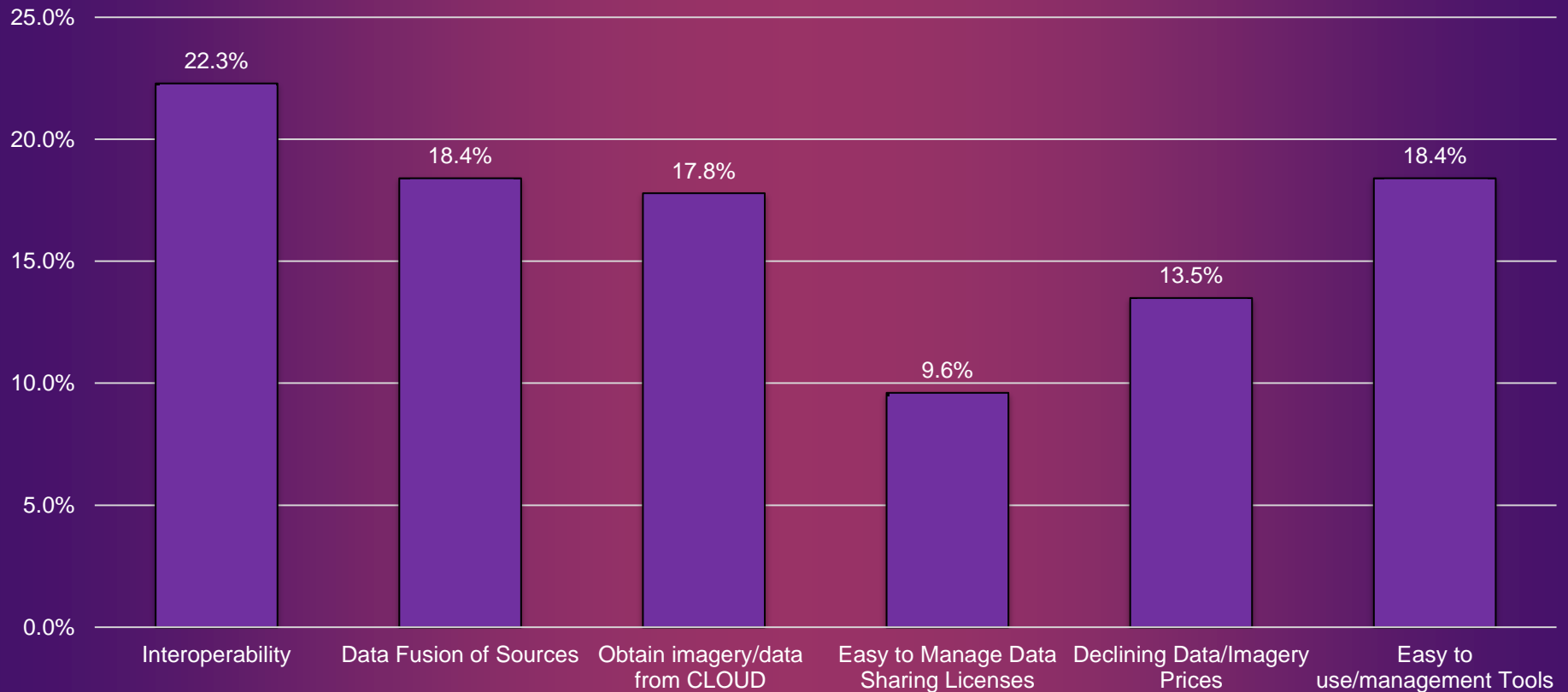
Affordability

Mission: MORE Opportunity™

- Give underserved groups access to the HCP Cloud & Model as a Service
- Team with institutions, tribal groups, labs, businesses & communities in R&D
- Solve real-world problems building technical skills to secure the ***Workforce of the Future.***

Market Dynamics: Addressing Agility

Trends Impacting Use & Management of Imagery
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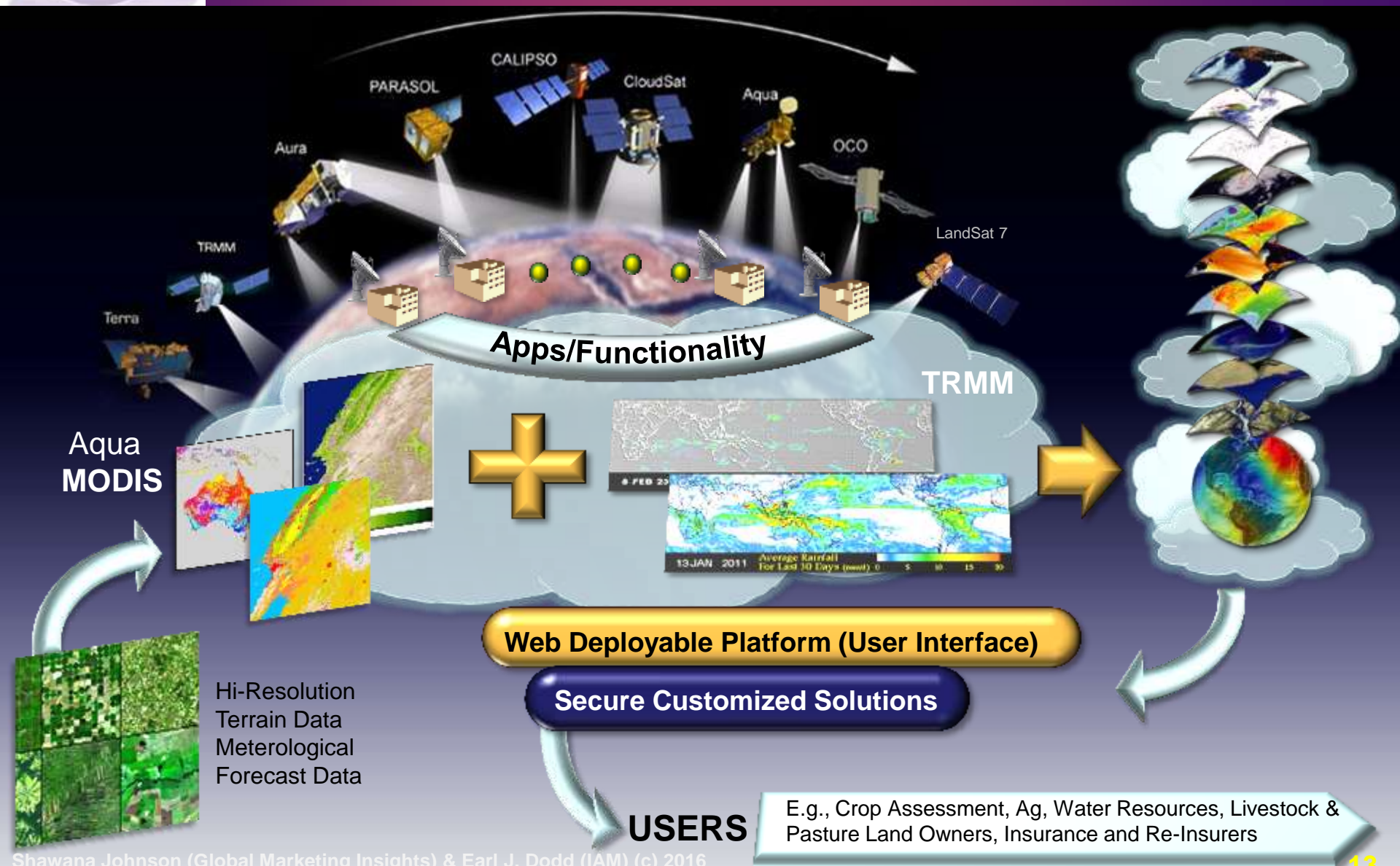
Addressing the Challenges

- Continued Commoditization of Geo Data / Imagery / Tools and New Entrants Globally
- Provider must still focus on Targeted Marketing and Establishing a Channel to the Customer
- Investments on the Rise for Small Sat Hardware, Including Launch Capabilities and Automated Geo Tools - Predictive & Algorithmic Analytics.

Key Barriers to Success

- Tools and templates for managing risk in the transition from digitization to the digital workflow
- Expertise and knowledge using scalable systems (human tools)
- Creation of digital models (software tools)
- Cost – not the primary obstacle any longer!

Example Solution



Concluding Remarks

- Make Remote Sensing and Geospatial Information Systems data readily discoverable, accessible, visualized and useable
- Provide Modeling as a Service (MaaS)
- Scalable-up for a wide, varied and growing consumers (informed and uninformed users)
- Deploy systems without the need to know the existence of, or necessity of, the data and models they need to solve their geospatial and temporal problems.

Thanks for you Attention!

Dr. Lorraine Tighe
Managing Director, SGS
@SGeoSIn; mltighe@gmail.com

Dr. Shawana P. Johnson, GISP
President GMI
shawana@globalinsights.com
www.globalinsights.com

Earl Dodd, President, Ideas and Machines
Supercomputing Strategist
Earl.Dodd@IdeasAndMachines.com