Data, Information, and the Challenge of Reaching the End User

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Secure World Foundation (SWF)
is a private operating foundation
dedicated to the secure
and sustainable
use of space
for the benefit of Earth
and all its peoples

SECURE WORLD FOUNDATION

Promoting Cooperative Solutions for Space Sustainability

What Does the Foundation do?

Engages with academics, policy makers, scientists and advocates in the space and international affairs communities to support steps that strengthen global space security.

Promotes the development of cooperative and effective uses of space for the protection of the Earth's environment and human security.

Acts as a research body, convener and facilitator to advocate for key space security and other space related topics and to examine their influence on governance and international development.

Key Governance Focus Areas

Space Sustainability

- Protection of continued utility of space resources

Human security

- Development and disaster assistance
- Environmental and climate change
- Countering degradation of land, air, water, and ice

Planetary threats

- Mitigating the threat of collision from a Near-Earth Object (NEO) through the establishment of effective governance for response

Basic Facts

- Non-profit operating foundation founded in 2004
- Funding comes from a private endowment
- Offices in Colorado, Washington DC and Brussels
- Dedicated to ensuring the long-term sustainability of outer space
- Strong role in policy development in both the international and domestic policy communities

The Challenge to the Space Community—

How to improve the utility of information derived from spacebased systems

Who is the Information User?

Any person, group, organization, or institution that can benefit from the information provided

All have varying information needs and capabilities

Scientific and Technological Progress—EO

- Vastly improved access to data
  - Faster delivery to data analyst after collection
  - More data sources in the works (aerial/satellite)
    - Electro-optical
    - Synthetic aperture radar (SAR)
    - Aerial lidar
- Many, more powerful, analytical tools
  - Improved processing, software
  - Rapid, automatic change detection
- Related tools, such as position, navigation, timing (PNT) applications, GIS more powerful than ever
- Scientific research has added many new insights and knowledge in the past decade

We are in an information-rich environment

Technological Progress--Communications

- More communication satellite capacity
- Quickly expanding cell phone network
- Wi-Fi more pervasive
- Smart phones becoming more prevalent
- Tablet computing expanding
- Information network is much improved
- Social media widely used, e.g.,
  - Twitter
  - Face Book
  - Linked-in

Connectivity is increasing rapidly

Are We Making the Best Use of the Tools?

- Often, uncoordinated use of data collected
  - Does information reach end users, i.e., local communities?
  - Can they make use of the information available?
- Lack of understanding of the needs of the user
  - How do the users provide feedback to data providers?
  - How is feedback solicited?
- Lack of open standards for data protocols and format
- Slow turn around from data to useful information

Future Opportunities In R&D

- Continue to do first-rate research
- Help to educate potential users about the value of the data and analysis you do

  Not enough to publish in books & scholarly journals—important to reach out to a broader public
- Help to educate policymakers about the value of Earth observations for recovering quickly and rebuilding effectively
- Extend applications to developing world

Challenges Ahead

- EO still not sufficiently well coordinated
- Need to clarify roles of different participants
  - International agencies
  - Government agencies
  - Private sector
    - Individuals
    - Groups (NGOs, IGOs)
    - Companies
- How best to make use of the new tools
  - Smart phones
  - Tablets

Using the Newest Tools

- Community remote sensing
  - Adding details to satellite-derived data
- Crowdsourcing, citizen science
  - Using the crowd to provide data
- Cloud computing
  - Using the "cloud" to interpret data, provide information

All of these can help improve the utility of spacebased information sources and tools

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THANK YOU!