Advancing the vision of GEOSS: What next? (A personal reflection*)

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*Please note the views expressed are those of the speaker and should not be regarded as stating an official position of the European Commission.
Question:
What will the GEOSS look like in 2016-2025 (GEO-II)?

And my answer is: I don’t know!

But let my try and provide an explanation for my ignorance!
A Brief History of Humanity

The Evolutionary Phase

5,000,000 years ago: Hominina (bipedal apes)
500,000 years ago: Homo Sapiens

The Revolutionary Phase

5,000 years ago: Agricultural revolution
500 years ago: Industrial revolution
50 years ago: Electronics revolution
5 years ago: Internet revolution
A Brief History of Humanity

Given the current pace of technological change, we can reasonably ask, "will there be another revolution in":

- 5 months, followed by another in
- 5 weeks, followed by another in
- 5 days?

And in the future we can anticipate:

- The nano-technology revolution;
- The genetic engineering revolution;
- And many more!
A Brief History of Humanity

As the world economy is reshaped by technological revolutions and globalization, two new “gilded ages” are emerging:

Developed Countries are experiencing a “Second Gilded Age”: arising from the technological revolutions of the last 50 years;

Whilst Emerging Economies are experiencing a “First Gilded Age”: arising from their Industrial Revolution.
A Brief History of Humanity

These “gilded ages” are unfolding simultaneously and the forces driving them are intricately linked.

For example:
800 Million Indian citizens are today connected via their mobile phones;
And internet usage via mobile phone connections has reached around 50% for developed countries.
What are the implications for Humanity?

We are entering a new era in the “revolutionary” history of humankind

A time where WELLBEING will be as important for humanity as long term prosperity

And this represents a real challenge, but also a MAJOR opportunity for GEO.
What are the implications for GEO?

That the vision for the GEOSS could change from:

“realising a future wherein decisions and actions for the benefit of humankind are informed by coordinated, comprehensive and sustained Earth obs and information”.

to

“realising a future wherein the decisions and actions of humankind are informed by coordinated, comprehensive and sustained Earth observations and information”.
What are the implications for the GEOSS?

Whatever is decided today is out-of-date by the time it is designed, tested and implemented!

So the design of the GEOSS of the future must be very flexible and highly adaptive
Who should provide the required data for the GEOSS in 2016-2025?

The Public Purse?
The Private Sector?
NGOs?
Local Authorities?
Citizens?
“Others”?
Who should provide the required data for the GEOSS in 2016-2025?

I would argue that for GEO-II the **2 principle sources should be:**

1 – The Public Purse
2 – Citizens

Note: this does not exclude other sources!
Who should provide the required data-1?

The Public Purse

1. Must continue to provide the capability to acquire the essential remote sensing and in-situ global, regional and national reference data sets;

2. Ensure BOTH the stewardship of this data **AND FREE, OPEN, UNRESTRICTED** and INTEROPERABLE access to it;

3. Enable the calibration of all relevant data acquired from any source.
Who should provide the required data-1?

The Public Purse

We must build on the work already carried out in GEO during the period 2005-2015.

This provides the solid foundation upon which GEO-II can continue to deliver comprehensive, coordinated and sustained observations of the Earth system.
Who should provide the required data-2?

Citizens

To do this they must be given the tools to **DIRECTLY** observe and report on their environment.

This capability is now becoming available
And what does GEO need to do?

1 – GEO needs to ensure that mechanisms are put in place to acquire, archive, verify, calibrate and disseminate the data streams that citizens observations will generate.

2 – GEO needs to establish the means by which these data streams can be processed to provide requested information.
Observations by Citizens

Is a “Win-Win” Scenario!

• It can enormously enhance our in-situ monitoring capability;
• And in the process limit the charge on the public purse!
(Although the public purse must continue to bear the baseline / reference in-situ observation costs.)
Who should use the acquired data?

Everyone!

The Public & Private Sectors
NGOs
National and Local Authorities, etc., etc.

And above all - Citizens.
And how should Citizens be able to use it?

Information needs to be delivered to citizens:
- in response to their specific requests;
- interactively;
- in an easily useable & understandable form.

This will not happen if the primary delivery medium remains “web pages” viewed on a PC!
A Brief Guide to Ubiquitous Global Commodities

It was said that there were 2 ubiquitous global commodities:

• Coca Cola
• McDonald’s

Well now there is a 3rd:

• Mobile Phones

GEO should make use of such global technologies to enable direct connectivity with citizens
The EU Research Framework Programmes

What I have presented in the previous slides represents a personal reflection. But it is, as you might expect, not completely divorced from the actions of the European Commission, as the next few slides will (hopefully) demonstrate.
Citizens’ Observatories in the EU Research Framework Programme

The 2012 Environment Work Programme includes a topic: Developing community-based environmental monitoring and information systems using innovative and novel earth observation applications.

The objective is to develop 'citizens' observatories' using innovative earth observation technologies, which should include community-based environmental monitoring, data collection, interpretation and information delivery systems.
The Commission’s proposal for Horizon 2020


Horizon 2020 contributes to tackling the major societal challenges identified in Europe 2020 and its flagship initiatives, whilst also contributing to creating industrial leadership in Europe.

It will also increase excellence in the science base, essential for the sustainability, long term prosperity and wellbeing of Europe.
Earth Observation in Horizon 2020

One of the Societal Challenges identified in H2020 is: Climate action, resource efficiency and raw materials

Activities addressing this Societal Challenge will: contribute to increasing European competitiveness and improving wellbeing, whilst assuring environmental integrity and sustainability, keeping average global warming below 2°C and enabling ecosystems and society to adapt to climate change.
Earth Observation in Horizon 2020

A specific activity under this Societal Challenge is:

Developing comprehensive and sustained global environmental observation and information systems

The aim is to ensure the delivery of the long-term data and information required to address societal challenges. Activities shall focus on the capabilities, technologies and data infrastructures for earth observation and monitoring that can continuously provide timely and accurate information, forecasts and projections. Free, open and unrestricted access to interoperable data and information will be encouraged.
Summary - 1

In GEO-II:

- GEO Members and PO must continue to acquire the essential remote sensing and in-situ global, regional and national reference data sets;
- GEO should look to connect directly with citizens;
  - They should be provided with the capability to monitor and report on their environment;
  - And access the information they want in an easily useable & understandable form
Summary - 2

- The EuroGEOSS Project represents a genuine success story.
- The EuroGEOSS Broker has demonstrated the value of brokering as an approach to bridge the gaps across thematic communities.
- The Broker has made a significant contribution to the evolution of the GEOSS Common Infrastructure, as demonstrated at the GEO Plenary in November 2011.
Congratulations to EuroGEOSS and everyone who has worked on the Project.
It has been truly visionary.
THANK YOU FOR LISTENING