ONE WORLD - ONE GEOLOGY

IN THE INTERNATIONAL YEAR OF THE PLANET 2008 – READ WHY GEOLOGY MATTERS AND WHAT THE WORLD'S GEOLOGICAL SURVEY ORGANISATIONS ARE DOING ABOUT IT.

In March 2007, in Brighton, UK, 81 geoscientists from 43 countries across the world gathered to consider a proposition – would they be prepared to collaborate to create a global interoperable geological map dataset? The answer was a resounding "Yes" and the proposition became an initiative, known as "OneGeology", which now has the support of 65 nations. The concept of scientists producing a "map" of the rocks of the planet available via the internet caught the imagination of the world's press too and pretty soon a website which had been seeing fewer than visitors a day got 30 000 in an hour! What generated such interest?

Think about it – Geology matters!

First, geology is important. Quite apart from the fact that without geology geographers would have nowhere to put themselves, consider natural resources and natural disasters - we are desperately short of the former and suffer too often from the latter. So knowing what the rocks are beneath your feet is pretty crucial – even in somewhere as geologically "stable" as the UK, clays that swell and shrink cost the insurance industry more than £300 million a year! Add to this the growing public interest in the environment and in particular climate change and solving the problem of excess CO2, or where energy is going to come from, and you begin to understand the interest.

While there is geological map data in existence for much of the planet, it is not always easy to find, not always in digital form, and if you do locate it, you are likely to find that it is neither interoperable nor in scientific harmony - and I explicitly include Europe here, which

should make for interesting times as we move towards INSPIRE compliance! None of this is news in the geological community. For several years a small number of people have been working to accelerate the development and promulgation of simple, basic and essential digital geological map standards and specifications to improve the interoperability and sharing of data and move structural interoperability forward. Some of the readers of this article will be aware of the development of a high-level geoscience data model and the interchange format GeoSciML. However, as promising as GeoSciML is, understanding and take up by a geoscience community which is large, but dispersed and focused on science and not interoperability, is slow.

Thus, the two main and closely related drivers for the OneGeology initiative are that geological data is relevant to our future on the planet, but you can't share it. Add to this a few more facts - the hidden data riches "locked" away in geological surveys and organisations around the world; the lessons learned in many individual nations who have built geological spatial databases; the emergence of regional spatial data infrastructures; and the hard to ignore exemplar of Google Earth - and the geoscience community has more than enough reasons to act.

International Year of Planet Earth 2008

Enter International Year of Planet Earth 2008 - IYPE. Could this UN Year provide the catalyst to begin the creation of a digital geological map of the planet, initially at a pragmatic scale of ~1:1 million? Would geological surveys, who were already pondering ways to make a tangible contribution to IYPE, be prepared to act as the sustainable data providers of this global dataset? Would the vehicle of creating a global geological "map" be a more palatable way for geoscientists to get involved in the development and progress of an emerging global geoscience data model and interchange standard? The initiative had enormous potential to transfer much needed know-how to developing countries and reduce the length and expense of their learning curve, while at the same time producing maps and data that could attract interest and investment.

Why OneGeology?

Early in 2006 the principles and objectives of the OneGeology proposition emerged. Like most projects which catch the imagination, the fundamentals were simple, basic and unifying, but most of all they were timely.

The principles were that geological surveys and geoscientists around the world have a responsibility to:

- Make accessible the best geological map data they have now.
- Work towards consistent standards for data and access - schematic interoperability.
- Enhance and increase the use and usability of their data.

The objectives followed logically:

- Make existing geological map data accessible in whatever digital format is available in each country.
- Transfer know-how to those who need it, adopting an approach that recognizes that different nations have differing abilities to participate.
- Stimulate a rapid increase in interoperability, i.e. disseminate GeoSciML faster.

The scope became clear - OneGeology would be about making geological data available in a standard data structure first, i.e. providing access without geological reconciliation. To the disappointment of some in the profession, the prime objective was not the harmonisation of geological units and scientific classification across frontiers. While all recognise the ultimate desirability of this goal, it was one which would sink the project before it began and as such had to be something for the longer term.

The Mission and the Accord

OneGeology has adopted a simple mission statement.

Make web-accessible the best available geological map data worldwide at a scale of about 1:1 million, as a Geological Survey contribution to the International Year of Planet Earth.

It is an inclusive mission to which six international bodies have added their collective weight. In doing so, endow the initiative the global credentials essential to play on a

world stage.

The Brighton meeting produced a unanimous "Accord" that provides the governance, technical and political essentials for OneGeology. The real work of implementing the project could only start after the Accord was agreed.

Next Steps

Since the March meeting, an international governance structure has been agreed in detail, and a Memorandum of Understanding has been signed by the global bodies involved. Brighton resulted in a large amount of interest from prospective participants and others and engagement and recruitment continues. Perhaps most importantly, the momentum and profile gained in 14 short months must not be lost – it is not often geology gets attention from the world's media! The decision was made to hold a "technical" meeting as soon as possible to take forward a prototype OneGeology portal. The purpose is to build something that will allow geoscientists and wider society to appreciate tangibly just what OneGeology will deliver, and at the same time provide a "strawman" to move forward through a build-review-revise strategy. This technical meeting took place in Utrecht, NL, on 30-31 May 2007 and the resulting Action List is available from the URL below. A second meeting is scheduled to progress the management aspects of the initiative, tackling such issues as intellectual property rights, strategies for assisting developing nations and communication.

Fundamental Funding

A fundamental issue is funding. The OneGeology enterprise is predicated on individual geological surveys providing the manpower and data to make their own territories available. Some surveys, including the British, Netherlands, Italian and French geological organisations have agreed to devote additional resources for coordination and core activities. However, without a significant injection of core funding to accelerate the development and take up of the information systems and protocols and the provision of technical aid and resources to those in the developing world, then progress will be slower than most participants wish.

There is no lack of will, but there is a lack of national funding to develop the common infrastructure, provide the glue money and the outreach that an altruistic project like this needs. Progress would also be slower for a project with so much to offer society and governments, national and international.

OneGeology is a venture entirely in accord with the aims of those who wish to increase access to Public Sector Information, to develop Spatial Data Infrastructures, and to see science taken out of its esoteric closet and employed for the benefit of society who funded it. We look forward to those who have influence over such funding recognising the synergies that exist here, grasping the chance to leverage a huge amount of national intellectual capital and momentum and support a worthy proposal. The opportunity is there and timing is everything.

Links:

OneGeology: www.onegeology.org.
Action List:
www.bgs.ac.uk/onegeology/technical.html

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