AGI GeoCymru 2018
Navigating the Sea of Open Data
Summary and Highlights

Adam Burke - Welcome Address (AGI Cymru Chair)

Adam reviewed 2018 and highlighted the work AGI Cymru is busy with:

- The success of the Better Mapping event organised in association with BCS and RGS
- Increasing advocacy with the SOCITM group in Wales
- The rise of the Government Science and Engineering profession
- Ambitions to revisit the AGI (2009) Location Wales document in 2019

Peter Wells – Mappin': making web mapping quick and easy (Lutra Consulting)

Lutra's Mappin' product provides out of the box web publishing of spatial data. The product requires no coding and is configured through a web interface. It is designed to complement and work with existing spatial data infrastructures. Peter gave a demonstration of publishing flood risk data using QGIS and Mappin'. In brief:

- **Load flood risk model** into QGIS using the 'Crayfish' plugin
- **Modify** and finalise data in QGIS and save the QGIS project
- **Upload the QGIS project** file to Mappin' through the web interface
- **Configure** publication options using Mappin' web interface

Dave Eagle & Matt White – Authentic, Creative and Alive (1Spatial)

Dave and Matt gave an inspiring high-level talk where Wales and geospatial were held as examples of being 'Authentic, Creative and Alive'. Global examples show that making public data open delivers huge benefits. We want to enhance UK geospatial assets by making them open, smart and available in real time.

- Recommended reading: the Open Data Institute's Strategy

What is the "geospatial readiness" of nations? The Open Data Barometer measures government publication, licencing, usage and impact of opening public data. The UK is second only to Canada.

1Spatial's data stewardship use cases

The Scottish Improvement Service's **Spatial Hub**

- Standard schemas defined for national datasets, with FME used to map local datasets to the schema
- Centralising the data delivers time and costs savings for FOI requests and INSPIRE publication

The Centre for Ecology and Hydrology's **Environmental Information Platform**

- Recently delivered Land Cover Map 2015, with 'smart' data requests spatially restricted using FME Server

Welsh Government's **Lle geoportal**

- Helping to lead open data with over 20 publication partners
- The opportunity exists to extend Lle with a spatial portal component. A mashup demonstration was shown using selected web feeds from Lle – see http://bit.ly/openwales

David Cooper – Plugging into the Web (Blue Fox Technology)

Blue Fox Technologies are users and consumers of spatial data. Opus Maps is the Blue Fox hosted web service. Blue Fox have historically been neutral on desktop geospatial products. However, they have found that customers who switch to open source QGIS are better able to quantify and qualify issues they encounter.

David used the opportunity to demonstrate their journey of **developing a QGIS plugin** to assist clients with publication from desktop to web. The plugin was built using the 'plugin builder' plugin and they found the API and documentation to be good.

David believes that strong advocacy for better geospatial is needed at SOCITM Wales. He highlighted the **growing need for geospatial functionality in consultation systems**.

Dan Hunt – CHERISH: new data for the coast edge to understand climate change and coastal heritage in Wales and Ireland (Royal Commission on the Ancient and Historical Monuments of Wales)

CHERISH is a project to survey coastal areas at risk from climate change in Ireland and Wales. The aim is to record a baseline as climate change impacts accelerate.

The talk was a crowd pleaser. Various stunning images from Wales showcased the different data capture techniques used at a number of sites.

- UAV's are used to capture **vertical and oblique aerial photography**
- Welsh islands are having **LiDAR** captured at 25 cm
    - o Ramsey Island surveys have revealed previously unseen archaeology
    - o Bardsey Island surveys have revealed prehistoric settlements

Tom Timms – The future of commercial data suppliers in an open data world (Verisk Geospatial)

Verisk is a huge US company with unique data assets underpinning its value proposition and serves the insurance, energy and financial sectors. The Geoinformation Group was purchased by Verisk and this team has grown.

Data as the new oil

- Increasing volumes of public data and earth observation data are being made open
- Data is only valuable where it underpins decisions
- The ubiquity of location platforms (Google, Apple etc.) leads consumers to think maps are free.
- Data is not free - **data is expensive to capture and maintain**
    - o Volunteer cost, e.g. OpenStreetMaps
    - o Government cost, e.g. Copernicus/Sentinel
    - o Commercial cost, e.g. Google
- Verisk have invested in 70 airborne platforms with the latest Leica CityMapper cameras
    - o Aim to capture baseline imagery of all United States cities
    - o Post-event re-capture will allow change analysis and enable automatic insurance claims

Data Futures

- Expect a move from specialist data creators to many devices creating data (**internet of things**).
- People will value and thus **pay for data of known origin and standard**
- Expect **data insight services** that provide information to underpin decisions

Matthew Yandell-Thomas – Easy integration of Copernicus satellite imagery into QGIS (Environment Systems)

Environment Systems have a cloud-based satellite data service called "Data Services". The process of loading data of interest has been improved with the release of a **QGIS Plugin**.

Matthew demonstrated loading of pre-processed satellite data using the plugin in QGIS. The data were used to examine agricultural field quality and used a vegetation index (NDVI) and zonal statistics. A premium data service opens access to a wealth of indices and temporal data across the area of interest.

'Making a Splash' Talks

Kevin Williams - Making a Material Design Atlas with QGIS (Neath Port Talbot County Borough Council)

Kevin demonstrated the creation of a slick QGIS Atlas with the cartographic and infographic design elements using the open Material Design principles and Google's Design Icons.

Nick Barcock - Coastal Investigations Programme (Dŵr Cymru Welsh Water)

The Coastal Investigations Programme was setup by Dŵr Cymru to monitor coastal pollutant flow.

- The work involves pollution data collection, mapping and modelling of flows using open source Delft 3D.
- Topographic and bathymetric data underpins this work, presenting challenges with different datums and the shifting seabed.
- The majority of pollution is due to **diffuse agricultural runoff**, followed by human and animal gut input.

James Wardroper - OS Open Zoomstack and Open Data news (Ordnance Survey)

The OS Open Zoomstack is a comprehensive vector stack of open OS products, delivered as a single file for all of Great Britain.

- Available in multiple file formats and supported by 4 different styles

Angharad Owen - Here be Monsters (Open Data Institute, Cardiff)

The ODI are globally headquartered in London, with the ODI Cardiff office (hosted by Satori Labs) focussing on Welsh data networks.

- Examples of their work include mining OpenStreetMap for **Welsh place names** and **mapping data ecosystems** to identify important connections and gaps.

Angharad drew attention to OpenSeaMap, developed as a free nautical chart and inspired by OpenStreetMap.

Pascal Coulon - Managing Spatial Data with Children's Play Bricks (SciSys)

Pascal challenged the audience with systems interoperability and the role of open in an enterprise.

- We should aim for an "open platform" underpinned by a **hybrid mix of open and proprietary products** working together.
- No system will be future proof. Instead, we should **embrace open standards**.
- **Open source is an enabler** and should not be the driver

GI data and technology falls under the software engineering domain and should be integrated within ERP systems.

Adam Burke (AGI Cymru Chair) and Abigail Page (AGI Chair) – Closing Address

Wales is open for business, data and geospatial.

Quote of the day: "Data is everywhere, insight is not".

AGI is a membership organisation that stands on three pillars:

- Advocacy
- Skills and professional development
- Networking

Attendees are encouraged to attend the flagship annual event AGI GeoCom18 on 8 November in London.

Abigail Page – Geospatial Commission: news and interactive session (AGI Chair)

The Geospatial Commission (GC) is consulting on a cross-cutting UK geospatial strategy. The strategy will determine investment areas from the 2-year £80 million budget. The GC is also set to take over management of the Public Sector Mapping Agreement (PSMA).

Geospatial in Wales is underpinned by contributions from public sector bodies outside the 'Geo Big 6', whose voices need to be heard, such as Natural Resources Wales and Local Authorities.

Abigail explained the AGI response to the call for evidence, and the programme of related events. The audience was polled on four questions covering the three themes in the GC 'call for evidence':

- **Theme 1: Innovation** - Supporting innovation in the geospatial sector
- **Theme 2: Enhancing Assets** - Enhancing the UK's geospatial assets
- **Theme 3: Investment** - Driving investment and productivity in geospatial applications

Poll 1: Which of these items will support Innovation in the geospatial sector most?

Welsh voices heard:

Addressing

- Addressing data is a nightmare from a commercial perspective. The same standard must be used by everyone and be available to everyone.

Cost

- Datasets are prohibitively expensive to small businesses and opportunities are thus lost due to cost

Data Access

- Data discovery tools need to be improved
- Quantity of data can scare people
- Data access can and should overcome data sitting in silos in different areas

Regulation

- Regulation scares managers from sharing data
- Regulation should make the decision to share data easier

Skills gap widening

- Public sector demand for geo skills is increasing
- Public sector investment in people and skills is decreasing

Higher education

- Geography numbers (students) are plummeting

Disconnect between GIS users and decision makers

- Evidence is not underpinning decisions
- Spatial data should be part of management information systems
- GIS is 'back office' and not taken seriously enough

Poll 2: Which areas should the government focus on to enhance outcomes of geospatial data?

Welsh voices heard:

Person data standard needed

- Addressing / Geoplace is a great standard. We need the same data standard to link people.

Improve public sector collaboration

- Prevent each public sector organisation from duplicating work at a cost to the taxpayer
- Public sector collaboration is needed to underpin public-private sector collaboration and partnerships
- The All Wales Mapping Service framework is an exemplar case study of public sector collaboration

National datasets

- Good examples of national datasets in Wales are Active Travel Routes and Public Toilets.

National spatial data infrastructure (SDI)

- A central repository is needed with one standard
- Lle needs to become a multi-agency spatial data repository
- Lle can be used to create the services that private sector can build on
- Wales and Scotland are building their respective SDI's and are acting as pilots for the United Kingdom

Third sector absent

- The third sector also needs geospatial data but is notably absent

Planning

- Planning in England is achieved by co-operation between bodies
- Transparency and validity is needed in the planning process

Outcomes

- Outcomes are driven by the geo big 6, for example in the planning process
- More focus and clarity is needed on the outcomes of the consultation / investment.
- What is the purpose of each investment?
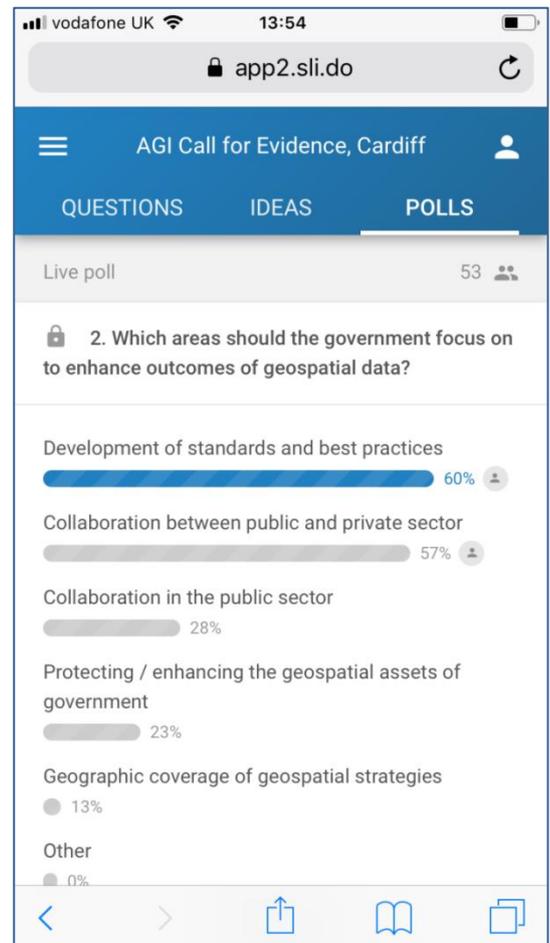
Poll 3: Which are the sectors of highest importance to invest in?

Welsh voices heard:

Health

- Health is clearly missing from the sectors to invest in
- Health includes NHS service provision, social care, population health and genomics
- It is easy to make the economic case for investment in health, with increased productivity from fewer sick days

Demographic data

- General demographic data and social data are needed

Natural Resources

- The strong vote for natural resources reflects the Welsh heritage and rural nature
- Natural resources deliver economic benefits through tourism and renewable energy potential
- We need to understand the ecological limits to all forms of development
- Strategy should be driven by measures of happiness rather than GDP (endless growth is a fallacy).
- Sustainability in the broadest sense is core for the wellbeing of future generations (intergenerational accountability)

Built versus Natural Environment

- The current investment focus on urban infrastructure and the built environment is at the expense of natural resources
- We should rather think about the interdependence between the built and natural environments

Historic / Heritage Environment absent

- The historic environment is a huge economic driver for tourism
- The historic environment sector in Wales is more developed than the rest of the United Kingdom
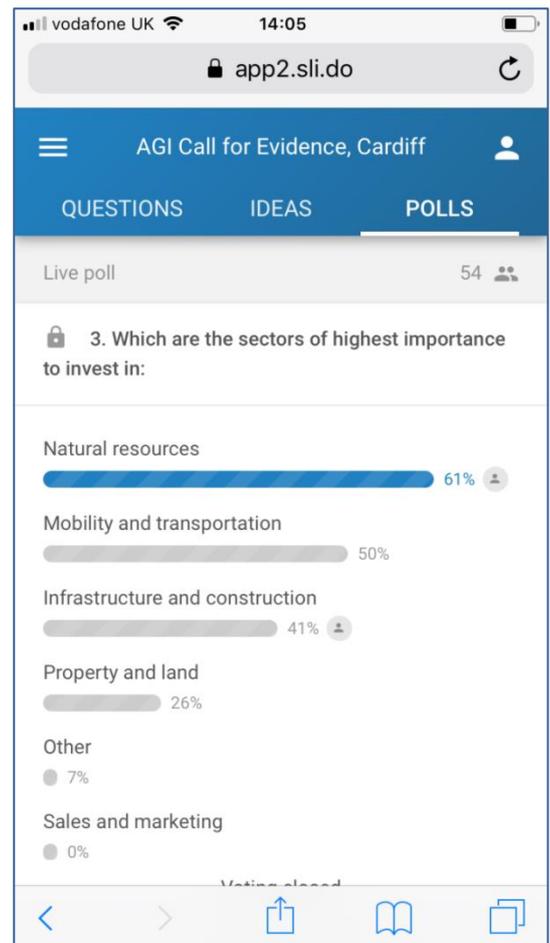
Poll 4: Outside of specific market sectors, where should the geospatial sector focus its investment?

Welsh voices heard:

Earth observation

- Europe is investing in cloud platforms that provide ready to use earth observation products (e.g. built upon Copernicus Sentinel programme)
- Earth observation needs more investment to lower barriers to consumption
- A government body already exists to ensure earth observation integration in the UK

Infrastructure

- Invest to ensure infrastructure can keep pace with the data volume and hardware requirements
- Specifically, we need to invest in computing, server capacity, technology, speed, cloud services and UK data centres
- We need to remove the negative stigma and invest in increasing the UK's cloud computing capacity

Emerging technology

- Regulation is restricting the development of emerging technologies
- Examples are UAVs, voice technology, augmented / assisted / virtual reality and crowd-sourced data collection

UK Ambition

- The UK needs to increase the scale of her ambition
- Data delivery could be served via a UK spatial database
- Learn from international exemplars; avoid re-inventing the wheel and jump ahead.
- An example is the Australian Geosciences Data Cube, presented by Richard Lucas at AGI GeoCymru in 2017. This technology is now being adopted by several countries, see the Open Data Cube.

Geography as mainstream technology

- Geographers are known for doing their own quirky thing, hence the old adage 'spatial is special'
- This does our industry a disservice and results in being ignored by mainstream technology
- Geospatial strategy must align itself with mainstream technology