

EUROGI imaGIne Conference Report

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The **EUROGI imaGIne Conference** was held in Dublin on 7-8 March 2013 at the Convention Centre Dublin. Following an inspiring and entertaining welcome by Phil Hogan, TD (Minister for Environment, Community and Local Government), the six keynote speakers (two on Day 1 and four on Day 2) presented the audience with much food for thought, about which more later.

The conference followed the format of five parallel sessions in each of three slots, before and after lunch on Day 1 and before lunch on Day 2, covering a wide range of topics, including case studies at national and European levels, open data strategies, the proposed EU Location Framework, crowd sourcing and linked data. Three plenary sessions were also held (one on Day 1 and two on Day 2). Compass Informatics' Roger Longhorn was facilitator for the first plenary session, on 7 March.

The plenary sessions each featured well-known and highly respected speakers, with a facilitator, focusing on identifying tasks and actions needed to exploit existing GI using existing technologies, new technologies and addressing emerging opportunities. Panelists were asked to address the question of "Who has to do what, when, and how?" for these themes. Panelists were drawn from across different sectors of the geo industry and business, the latter especially in looking at new opportunities where 'location' becomes an important factor in service delivery. The remainder of this report presents some of the key thoughts presented by the keynote speakers and panelists, in 'bullet' format.

The first keynote speaker was **Prof Jacqueline McGlade**, Executive Director of the European Environment Agency (EEA).

Prof McGlade had already participated fully in the **1st Eye on Earth International Meeting** that preceded the EUROGI Conference, where much of the focus was on sharing data, integration, interoperability, information dissemination, the role of the citizen (crowdsourcing of environmental information) and related issues. Key issues (and questions) raised in her EUROGI Conference keynote included:

- How do we scale our geo information and knowledge from local to global scale?
- How can we enable easier and wider sharing of data/information and collaboration, both within a discipline and especially across disciplines and sectors?
- Do we have the 'right' data policies in place – and what is 'right'?
- How do we encourage and best use investment in geo/location data and services?
- What roles do citizens play today in relation to 'citizen science' (using the environmental sector as the main example)
- How will that role change in the future, for example in providing input to either official data sources or in monitoring the environment (for example).
- What is the role of 'indicators' in regard to data collection and then use in assessment in evidence-based policy making – and implementation? (Noting that indicators are especially important in assessing success or failure of environmental policies, which is why we find them featured so strongly in, for example, the Marine Strategy Framework Directive, among others).

In the short time available for her keynote, Prof McGlade also introduced the principles behind the EU's Shared Environment Information System (SEIS) with the "collect once, share with everyone" policy, and the expected impact on making large volumes of environmental data available across the whole of the EU, with concomitant efficiency gains in environmental monitoring, and investment policies. One message from this is that we need to spend at least as much time looking at the socio-economic issues and overall societal benefits as we do in the procedural and technical aspects of implementing a pan-European SDI. Similar issues arise with regard to the global initiatives such as the UNSDI and promotion of national SDIs via the UNGGIM, where a topic of debate is quality assurance, especially in regard to crowdsourced location information spanning myriad themes. Unfortunately, none of these issues are easily resolved and addressing them requires concerted and continual effort from across a wide range of actors and stakeholders from many different sectors of government and society.

The second keynote was from **Dean Angelides**, Corporate Director of International Operations of the commercial GIS software and services provider Esri – the largest organization of its type in the world today. Dean offered several observations, including:

- Use of GIS is delivering real value today – but not as broadly as is possible, for a variety of reasons.
- The old saying that 'maps communicate' is as pertinent today as it ever was, or even more so, given the plethora of ways that 'maps' can be created and distributed using today's technology.
- The concepts and processes behind building SDIs are still obscure to many people, including some of those at senior levels who are given that responsibility.
- Many decision makers still contend that 'they just want a map' – but more education is needed in helping these people to also understand the concepts behind map making and interpretation.
- Implementing SDIs is actually becoming more complex rather than easier, as one might expect, because technology doesn't offer all the solutions. Evolving global trends, policy initiatives (e-government 'open data'), computing trends (mobility and working from within the cloud), and data trends (open data, interoperability, harmonization, etc.) are all in flux.
- The very plethora of geo data now available already offers 'too many data layers' to be presented sensibly, without some experience on the users' side.
- New information infrastructure (not just for SDI) are changing the way that whole organizations (including governments) operate. This change needs to be recognized and built in to the SDI implementation and maintenance process.
- A 'cultures of collaboration and sharing' continue to develop within governments and large organizations, and between citizens and governments, how do we (now) ensure that our spatial data infrastructures 'keep up' with this level and speed of change?
- Location-based content is growing exponentially and must be 'tamed' in order to be used effectively, by different technologies, for different uses and users, etc.
- Two key terms are 'location aware' and 'social' – leading to a more inclusive social environment for everyone.
- Do we have any 'templates for the future'? Not now – only best guesses and a need to continually monitor information technology evolution, trends in data principles (applied by governments and businesses, expected by citizens) and innovation in all these areas.

We have seen that, at the 'consumer' end, use of location data by the average citizen, business person or government employee is becoming ever easier, from their point of view.

However, many of the issues surrounding provision of that data are yet to be resolved, not least because of rapid technological changes in data collection, analysis, process and delivery.

From the other keynote speakers, **Geraldine McBride**, former President, SAP North America, Asia Pacific and Japan), provided interesting observations from outside the usual 'geo' world of participant and practitioners. One thing that 'open data' initiatives have brought to the fore is the need to develop new business models. These models need to focus more on the consumer/user and less on what the geo/location data suppliers expect or want. We also need to examine more how regulatory environments and ever changing (new) regulations disrupt business models (e.g. what is the impact on businesses and government agencies of a nation adopting wide ranging – and legally mandated - 'free and open data' policies?).

This is an issue that the PSI Alliance has also been struggling with for some years now, in regard to openness and free or low-cost availability of government data generally. Yet despite all the talk, workshops, meetings and conferences, we have seen no new (effective) business models proposed over the past several years. Perhaps the best way forward is to look more closely at the business models of those companies that are surviving and growing in acknowledged difficult economic times to see what they are 'doing right' and how that can be adopted in other sectors, e.g. Amazon on-line sales growth versus rapid decline in the 'shopping mall paradigm'.

Noting that location has become an ever more important aspect of everyone's information needs, mobility of data consumers needs to be addressed more adequately. However, rapid innovation in the technology makes this difficult to achieve.

What do the 'future users' want is a question that we seem to ignore – especially in regard to the 'millennials', i.e. the youth of today who have grown up with what to many of us is exciting new technology, but which to them is the status quo?

Where does location information fit in with the 'experience economy' – one of the potentially exciting new business development areas? Do we understand enough today about the 'transaction economy' (where information of widely varying nature and application, provided on an immediate, transactional basis, is a primary service offering) versus the older 'consumer economy' (where we buy 'things' – including information and data products - and then use them later)? Where does 'location data' fit into this question? How much more integration will we see with regard to location and place in social networking developments?

McBride offered some thoughts on augmented reality (predicting that it will be 'mainstream' in only 5 more years, at most – with no dissent from the audience) and noted that '3D is already going mainstream' (which no one disputes today). What can we learn from the (video) gaming industry, in which an important sub-sector focuses on knowing where players are, in real time.

Are our regulation-based information infrastructure/SDI frameworks capable of adapting to such innovative uses of geo data? Do these technology developments introduce new privacy, security, and liability issues when we haven't even resolved these for the existing technology? The problem with regulations dealing with ICT is that the technology changes far more rapidly than the legal system can match – ever! - so how do we compensate for that in the real world without restricting innovation and the potential economic growth that such innovation brings with it?

The keynotes by **Prof Michael Goodchild** and **Ed Parsons**, Geospatial Technologist at Google, both also touched on issues surrounding volunteered GI (VGI) or crowdsourcing and the place of such data/information in a business or government information environment. Ways to enable, encourage and manage data from 'citizen sensors' need to be further developed and embedded in the geo/location data culture or business mentality (where here 'business' also refers to government business, for and on behalf of society generally).

Goodchild noted that 'proper spatial reasoning is not really taught anywhere today' except perhaps in specialized courses for geographers and GI science/GIS students. What is the current and long term impact of this lack of understanding about what is behind 'spatial awareness' on the part of decision makers? How does one overcome this, which today requires faith (on the part of the decision maker) that the spatial analysis underpinning the information presented to them was accurately prepared, analyzed and presented? Just as the calculator destroyed our ability to do basic maths and the spell checker did the same for our ability to spell, are location services doing the same for our ability to actually think spatially – with proper understanding of what that means?

He also noted that rapid access to ever larger volumes of data, on 'friendly' terms (open or even free access) increases 'agility' in developing new applications and responding to user needs, rapidly and in ways and with products/services not originally foreseen or intended.

Parsons posed the question of just how do we embed 'geo' or location in an even wider range of services or products, noting that today the 'geo' component of many (financially and economically) valuable services is actually quite small, although important. As much progress as we have made in just the past very few years in introducing 'place' and location into the consumer/user psyche, how much more remains to be done that would benefit all? Are we spending (wasting?) time on geo-coding things that don't matter and missing more important opportunities (e.g. geocoding all of our data files)?

How we will manage the internet of things is also raising huge, unanswered questions. How will we manage such immense data volumes? How will we manage location data that changes by the second, especially from tens or hundreds of millions of sensors across the whole globe? How do we archive such data – and do we need to – and if so, why (legal reasons)? What is the impact on existing data policies and laws, e.g. regarding privacy, where even today utility operators – or those who hack into their systems – can tell when a household is occupied or not (as just one of many such examples)?

Rapid technology innovation, especially in respect to mobile, location enabled devices (and virtually all mobile devices are expected to be fully location aware in just a very few years) will itself have both a disruptive and contributory influence on business models (quickly) and even whole cultures (eventually). Add even more sensors to such devices and the resulting technology becomes even more disruptive – and constructive (e.g. an app using in-built heartbeat sensor technology treating the information differently knowing that the user is walking on a flat, even surface, where rapidly increased heart rate could signal a problem, versus climbing a mountain, where this effect is to be expected).

Eventually, 'big data mining', i.e. drawing on a person's social network postings, government records, credit or other readily available financial data, and other officially or commercially available personal data, and combining that with minute-to-minute location awareness will

raise new and ever more difficult to resolve challenges regarding, for example, personal privacy, among others.

McBride, Parsons, Goodchild and **Mark Reichardt** (the final keynote speaker) also presented different views on quality of data, quality management and quality assurance, e.g.:

- Too heavy a quality assurance regime can kill a service that would still be valuable even if some of the data were of lower quality, but, for example, more immediately or more widely available (using 'citizen observers' as an example).
- Quality management rules that delay delivery of data can result in the final, highly accurate data being unfit for purpose, e.g. where real-time data is needed and 'good enough' will do.

Finally, a view from those representing the more 'official' geo data sources was that all of this exciting, new, 'blue sky' thinking was wonderful, but the fact of life is that we do have legislation requiring that certain geo data be collected, maintained, disseminated and used by legally mandated government agencies for legally mandated purposes. Our SDIs must continue to support those missions as well.

Presentations.

Among the many presentations in the parallel sessions was that of Beverley Sherwood, Fáilte Ireland, and Ali Robinson, Compass Informatics, offered a presentation on "Dynamic Business Intelligence Solutions to Manage Irish Destinations for European Tourism".

In conclusion, the conference received many favourable comments, especially about the format, including several keynotes from well-known and well-respected figures from the geo community at national and global levels. The three plenary sessions were also popular, giving the audience the opportunity to question the main speakers directly.