Geospatial and Health Care - UNCAP Conference 2015

A conference in Nottingham around emerging geospatial technologies offered some interesting solutions for supporting and caring for Europe's ageing population. But we need to make sure we get the standards right as several speakers emphasised, reports Stephen Booth.

Most of you reading GiSPro are geospatial buffs. You understand the benefits digital mapping linked to databases of information can deliver. Some of you are even geospatial evangelists – constantly encouraging others and seeking new areas of human activity where our technology can bring benefit. Whilst only being a commentator in that latter category, I did promise readers in the last issue that I would tell you more about the UNCAP conference, an EU-backed event to promote location technologies for Europe's ageing population.

This was not a vast conference, indeed in the confines of the Mercure hotel in the middle of Nottingham - it was quite cozy. The Lord Mayor of Nottingham, councillor Jane Morris, was there to get proceedings underway. Alas, she was several minutes into her speech before she realised it was the one she'd delivered the previous evening. The right one found in the depths of her handbag and we were off.

Dr Giuseppe Conti introduced the subject of Ubiquitous Interoperable Care for Ageing People (UNCAP) which is funded through the EU's Horizon 2020 research and innovation programme. Conti certainly woke us up with a breathtaking ride through the opportunities ahead from smart tracking of medical devices to avoid over ordering, real-time location services (RTLS) to take advantage of the reengineering of the internet and the networked society. The EC's vision is of an even more complex network with a plug-and-play 27 million euros project to use the internet for health issues. Conti envisions roles for geofencing, FIWARE (the Future Internet accelerator (another EU project backed by 80 million euros), robots in hospitals, the cloud and the internet of things.

Primordial Soup or Bran?

Calmer times came from John Herring of the Open Geospatial Consortium who was with us to talk about the future of services in an urban environment. Now planning and the environment is an area that OGC has only recently recognised as meriting its attention. Herring cited that parable of a number of blind men encountering an elephant for the first time. They each feel their way round different parts of the animal then compare notes on what they've found. There is no agreement. The internet is just like that in Herring's view, 'The Internet is today's primordial soup'.

He continued his theme that might be summed up as, where is the internet leading us, via René Thom's catastrophe theory, whereby small changes in certain parameters of a nonlinear system can cause equilibria to appear or disappear, or to change from attracting to repelling and vice versa, leading to large and sudden changes of the behaviour of the system; to Dijkstra's algorithm, which is all about finding the shortest paths between nodes. He finished on the book "Kahlog Albran – the Profit", a business book spoof on a 1970s new age book, The Prophet by Kahlil Gibran.

Building for All Ages

I am always surprised when a conference is able to receive a speech or presentation successfully from someone thousands of miles away. It requires an awful lot of clever technology. Sadly for most of the time we're not quite there yet. Nottingham was no exception as we gamely struggled to hear Amruta Awachat in India fighting a cold and who is a GIS researcher working for GI Standards, the conference organisers. This was a pity as I think Amruta would have said much of relevance about how as India enjoys greater prosperity they too have an ageing population. Their cultural and social values are differently slanted and more holistic than many of ours in Europe. For instance, they are developing residential projects that are built for a broad generic population so parents can leave their kids with grandparents living nearby during the day whilst they work. Just when you thought you were free of the kids. . . You can read more of Amruta's presentation in the article in our Nottingham special edition of GiSPro at www.gisprofessional.co.uk or call 01438 352617 and we'll send you a copy.

Eddy Oldfield is also from OGC, which has "a health domain working group" indeed there's not much OGC doesn't have a working group to cover. He spoke about health and interoperability where it is part of OGC's EDM community – emergency and disaster management. This is an important aspect of OGC's work and covers areas like open mapping standards for the

tracking of diseases (epidemiology), sensor web enablement and SDIs – spatial data infrastructures.

Ignorance and Standards

The European Telecommunications Standards Institute (ETSI) was at the heart of Scott Cadzow's presentation on Security and Dignity, which really means privacy. Taking as his guide Confucius' statement that "Real knowledge is to know the extent of one's ignorance", he told us that at the moment there are roughly 7 billion mobile phones and – guess what they only work because of standards.

While we need to integrate wellness into health care, Cadzow's view is that health professionals are not responsible for delivering a healthy population. Individuals have to accept responsibility, an aspect highlighted by the shocking Ebola outbreak where many died through careless health care practices. He believes that health care of the elderly is still in its infancy and more needs to be done in training young doctors about being old. The aim should be to migrate self-care as part of an eHealth system. You can read more about markets, standards and security in a great article by Scott Cadzow in our Nottingham special issue.

An Out-of-the-box Solution

Leonardo Plotegher is one of those who believes that location technologies are a real gamechanger. He introduced the UNCAP box, an Android-based device with an HDMI dongle that can connect to a host of medical sensors – glaucometers, heart rate monitors, EEC's, fall detectors, etc. This is enabled by localisation technologies like GPS, WiFi and Zigbee, an open, global wireless standard to provide the foundation for the Internet of Things by enabling simple and smart objects to work together. The UNCAP box, which may connect via your TV, is in beta test but is expected to be available by the end of the year along with a mobile version.

Involving SMEs in the health care market was the theme of Wolfgang Kniejski's presentation. He is the founder of ININovation GmbH, a company dedicated to delivering products and services to help the elderly and people with cognitive impairment; typical UNCAP beneficiaries. This is about commercial exploitation of the UNCAP ecosystem, he explained. Once again you can learn more about ININovation in our Nottingham special issue.

Exploring the Great Indoors

Steve Fuller, who is titled Knowledge Exchange Fellow GRACE from Nottingham University's Geospatial Institute, is an indoor location specialist. He told us all about problems such as devising a location system for Nottingham's Queen's Medical Centre with its 27 miles of corridors and 10,000 doors (all in white or grey). Currently, mobile phones can deliver around 8 metres precision from the current satellite constellations. That is expected to fall to 1 metre with the new constellations coming on stream like the EU's Galileo. But none of that is much good if you're inside a building! Instead, you have to rely on things like RFID tages, Bluetooth markers and ultrasonics. Tracking systems involving a mobile phone are best, he argues. 'They're good but you need some technical ability and of course they need recharging'. He also says you shouldn't rely on just one tracking system; ultimately it will fail. You need more than one solution. He also told us about a new emerging comms technology: LiFi Light Fidelity, a bidirectional, high speed and fully networked wireless communication technology.

Riches will Flow if we get the Treatment Right

I vaguely thought that for once we were going to get away without mentioning the ubiquitous INSPIRE Directive to harmonise European spatial data infrastructures. I had reckoned without the formidable Kathi Schleidt of the Austrian Environmental agency. She quotes Machiavelli's The Prince of 1518: "In the beginning of the malady, it is easy to cure but difficult to detect, but in the course of time, not having been either detected or treated in the beginning, it becomes easy to detect but difficult to cure." She thinks his prescription still holds for INSPIRE. If we get it right then riches will flow – the usage for this data are almost boundless. They range from flooding, biodiversity, dangerous species, soil toxicity, unstable geology (mudslides), air quality, avalanches, earthquakes to the personal such as trees or birdsong.

The final speaker for the day was Anne Wilson, a nurse practitioner, who gave a distinctly Scottish perspective to health care for an ageing population. She explained that 36 million people worldwide have a diagnosis of dementia while 28 million suffer without a diagnosis. People may live for up to ten years after a diagnosis and Scotland has improved its record for this. Patients now get one year's guaranteed postdiagnosis support and the country has a charter of rights to alleviate the stigma and discrimination of dementia.

This was a fascinating event that certainly gave your reporter new insight into the possibilities that location technologies offer. Our thanks to GI Standards for inviting us. We'll keep track of UNCAP's activities and update you from time to time. In the meantime, if you'd like to know more go to www.uncap.eu

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https://www.gim-international.com/content/article/geospatial-and-health-care-uncap-conference-2015