Buzz and Balance - GEO Business 2018

This year's GEO Business conference, held on 22-23 May in London's Islington, was, according to Geomatics World editors Ian Dowman and Richard Groom, the biggest and best yet. The following is a summary of their report on the event which hosted 203 exhibitors from 25 countries, 100 exhibitor workshops, as well as many high profile speakers and seminars. It should provide a taste of the type of topics which were discussed during this excellent annual event.

Digital Transformation

Mark Enzer, Chief Technical Officer of Mott MacDonald, presented on the topic of digital transformation in economic infrastructure, with a particular focus on the built environment, which he says is falling behind other industries. Enzer also highlighted recommendations for ongoing support of the UK's Digital framework, the National Digital Twin, and a Digital Framework Task Group for the nations mature infrastructure network.

Powering the 4th Industrial Revolution

Presentations, including one by David Wood, Head of Geography in the Government Science and Engineering group, demonstrated how geospatial is transforming government and benefitting both society and business.

Geospatial Commission

William Priest discussed some of the technical and data related challenges which he faces in his role as Director of the Geospatial Commission. The body has been set up to deliver economic growth, improve productivity, drive investment to foster innovation, and protect and enhance the quality of the UK's world-class data assets.

Growing the Economy

The conference included a panel debate on how geospatial will enable the growth of the economy. Among the topics discussed was one by Andrew Trigg on the efficient use of data by the Land Registry. Meanwhile, Chief Geographer at Google, Ed Parsons, discussed the potential of geospatial and AI in terms of tackling the under-utilisation of privately-owned cars across the developed world.

Transforming Society

A session, which was chaired by James Kavanagh, Director of Land, RICS, included a presentation by Alan Mills, Preparedness Coordinator at MapAction, on the use of imagery which has been captured by UAVs in disaster relief situations. Zulf Choudhary, MD, Sparta Digital, spoke on AR and geo-location impacts, including how work done with CityVerve in Manchester supports tourism and benefits from crowd-sourced data.

Geospatial Innovation

The third conference session included a talk by Laura Alderson of the Geovation Hub which focused on the mutually beneficial relationship between more-nimble start-ups and the larger, and often less-flexible, corporations. Corporates need to stay relevant, and to do that, they need insight into new markets which can come from engaging with start-ups. Start-ups on the other hand can benefit from industry expertise and mentors from the corporate, its networks and resources. Another presentation, by Tim Ollyer from Geovation Hub, discussed the topic of real-time flight risk for drones and the problem which insurers face in terms of developing risk scores when calculating premiums.

Growing the Cake

John Remedios of the National Centre for Earth Observation described some of the work being carried out using EO in connection with ice pack thinning, global biomass and sea temperature. James Bruegger, Seraphim Capital, explained how, thanks to lowered cost for entry into the industry, space is at a 'PC moment' which is rich with opportunity.

The final presentation of the session was by David Norris, Technical Director of Plowman Craven, who discussed topics of business development, new market entry and the need for geospatial skills. In particular, he noted the resurgence in photogrammetry which allows a range of users to develop 3D models using aerial photography captured from drones. Plowman Craven are now looking at scanning for construction verification of buildings during construction, component-based functional models, digital twins and augmented reality.

The Seminars

GEO Business 2018 included seminars on a wide range of topics. The Smart Cities seminar, for example, included a presentation by Richard Wooding, Ordnance Survey, on the need to avoid silos and to build partnerships within this innovative field. Philip McAleese of See.Sense, a company which makes cycle lamps, explained how a range of road, traffic and behavioural data was collected from in-built IoT sensors during a trial held under the CityVerve project in Manchester.

The seminar on Visualisation, AR and VR included a message which explained that the field is hampered by the cost and awkwardness of the helmet/viewer. The emphasis of the presentations was on the visualisation side of the topic and on efficient data capture, but without any concentration on locational accuracy.

Meanwhile, the popular Earth Observation seminar included the theme of 'analysis ready' data, which was discussed by Pascal Coulon from Defra. Other topics included the use of Interferometric SAR (InSAR) for deformation and subsidence.

The floods seminar session featured three wide-ranging talks. Paul Drury of Ambiental described how his company is using modelling to predict how flood risk will change as a result of climate change - including the production of rainfall maps which are based on the analysis of 54 environmental datasets. Other than the 'low' scenario, the effect in terms of numbers is quite alarming. The mid projection would result in a 25% increase in properties affected by flooding and the 'high' scenario sees a 34% increase. Just as alarming is the predicted 105% increase in river flow, so they have also looked at the risk to bridges and the potential for increased river erosion, which could cause the pattern of meanders to change.

Dan Culli of Critigen and Gary Nel of Geocurve discussed their asset management work on the Environment Agency's TEAM2100 project through the framework consultant Jacobs - including the use of laser scanning and imagery to survey London's and the Thames Estuary's tidal defences. They have been using aerial photography from drones for surveys and 4K video to inspect the tidal embankments and walls. Their tools included a Leica Pegasus:Two Ultimate and a Leica: Backpack which have been used for land and estuarine survey, and which resulted in the collection of some 200TB of data.

In addition, Richard Groom spoke about the Environment Agency's standard format for river channel surveys – EACSD. He noted the fact that an increasing amount of survey work is now being procured by framework consultants. Surveyors should look out for the new framework due next year and cultivate their consultants, he advised.

During the Utilities seminar, Ian Bush of Black and Veatch discussed the process of producing a PAS128 standard document, which should be reviewed every two years. He pointed out that the PAS is aimed specifically at practitioners, not clients.

Meanwhile, Dr Neil Brammell of Utility Information Solutions made the point that while a lot of work is being done to the PAS128 standard, very little of it is finding its way back to the records of the utility companies. His company aims to close that circle by providing utilities with validated data and a proper estimate of uncertainty. He is establishing a "community of benign self-interest" with this purpose in mind.

Finally in the utilities sessions, Nathan Ward, Select Surveys, spoke about augmented reality. It is all done with the Augview app which takes data from Augview projects with the aim of better understanding underground utilities whilst on site.

The Heritage Seminar session on Day 2 opened with a talk from David Andrews, Geospatial Imaging Analyst at Historic England (HE), who discussed the surveyor's toolbox in 2018. According to David, complete models can generally only be made by combining technologies (e.g. terrestrial photography of a building will not record upper storey window sills).

During the Instrumentation and Monitoring Seminar, John Brewster of Imetrum Ltd. described a monitoring system developed by his company which uses a total station equipped with a coaxial camera, and image matching algorithms to detect the movement of image patterns in the field of view. If there is no image pattern, it will not work. The time and cost needed to gain permission and to establish prisms when installing total station monitoring systems is significant, so a system which does not need prisms is good news.

Marco Di Mauro from Leica looked at the effect of faster digital communication, innovations and cloud computing on monitoring, including the benefits of 5G in terms of latency compared with 3G and 4G. He also discussed the use of automated scanning for measuring surfaces and apps which can compare two sets of data and calculate the orthogonal offset between monitoring points. It is now possible to integrate data from any type of sensor and have the full workflow on the cloud.

In addition to the above, there was a special session on apprenticeships during which Christina Hirst and Mark Lawton discussed the national providers signed up to deliver industry-relevant courses (including distance learning).

The Exhibition

In terms of exhibitions, the wider industry, including national and overseas companies, and start-ups were well represented. There was an education zone, a start-up zone and a drone zone and many exhibitors demonstrated equipment and mobile mapping systems (including total stations, scanners, sensors, and GNSS receivers for mobile devices) outside the building. Among the demonstrating companies included Clearedge, Terrasolid and many smaller companies as well as several hydro companies. Techniques for scanning included trolleys and backpacks, and software companies offering automatic scan data recognition such as Vercator, which presented results at the RICS in the autumn were also present. Robotics, virtual reality and augmented reality were also present.

In a Word

This year there were 2,602 visitors from 53 countries. That is a 9% increase on last year and a rise of 61% since the event was launched in 2014. And so, the event goes from strength to strength. GEO Business will return to the Business Design Centre next year on 21-22 May.

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