

Sustaining Infrastructure

Sustainability was the key word at this year's Bentley Conference, expressed not only by its theme, "Best Practices for Sustaining Infrastructure", but also through other initiatives, including the attempt to reduce the company's carbon footprint by 15% before the end of 2009. The conference took place at the Convention Center in Baltimore, Maryland, US, from 28th to 30th May 2008.

To travel through Africa is to learn the meaning of sustaining infrastructure; there, neglected roads make moving from place to place a long and tantalising experience. Bentley chose the theme of sustainability to illustrate how infrastructure is the engine for economic growth and helps improve quality of life around the world, while mankind is confronted with the increasing demands of a growing population by now generally aware of the finite natural resources at its disposal.

Ranking

Founded in 1984, Bentley has 2,800 employees, an increase of more than four hundred over 2006. The company has offices in 51 countries around the world, and users in 169 of them. Annual company revenues will surpass \$500 million in 2008, 44% generated in North America and 56% on other continents. The year 2007 showed a growth rate of 16% to \$450 million, two-thirds coming from the subscription base. This sustainable growth is in line with what was achieved over the past fifteen years, which showed continual growth at a compound annual rate of 14%. Over the same period the company has invested more than \$1 billion in research, development and acquisitions; an annual 20% of revenue from licensing, subscription and training is invested in R&D.

Daratech is a market research company specialising in the information technology market, including GIS. A 2008 Daratech study ranked Bentley a world number two, with geospatial revenue of over \$200 million. The list is dominated by ESRI, with over half a billion US dollars, and numbered three and four are Autodesk and Intergraph, respectively: very close to Bentley in terms of turnover. The first European firm to appear on the list is Leica Geosystems, ranked number six.

Format

Bentley this year introduced a change in conference format. Tracks were arranged in themes, such as Building Information Modelling (BIM), Cadastre and Land Development, and Oil & Gas. Arraying presentations in this way probably works well for middle-management staff because it facilitates choosing the right sessions from many parallel tracks, the sessions to attend being those with themes approximating company specialisation. But more technically orientated participants found it a puzzling business. The new format also meant the same presentations were sometimes repeated because they were of interest to several disciplines.

Some tracks were better attended than others: the world-renowned Dr Xavier Lopez, director of product management spatial and semantic technologies at Oracle, found himself addressing a very small audience. In the Communications track he discussed the features of Oracle's 11g spatial database management system (DBMS) within the context of communications. This suite can handle 3D data, with a focus on 3D-city models, and can also manage the billion of points generated by airborne and terrestrial Lidar. While 11g has many functionalities comparable to GIS operations, it will never become a GIS, Lopez assured us, "because the market for our spatial DBMS is much bigger than for GIS alone. So it would not make much sense to make it a GIS."

3D-World

This conference once more underlined the tremendous and compelling need for accurate and detailed geo-information in its full three dimensions. This is especially true for urban areas, where growth is fast. Everywhere, and fairly independently of economic situation, people continue to migrate from rural areas to urban conglomerates. In a track on Cadastre and Land Development, Geoff Jacobs of Leica Geosystems, Bryan Williams from Trimble, and Ted Knaak of Riegl USA discussed the use of aerial and terrestrial Lidar/photogrammetry to acquire 3D geodata for land-management purposes.

One speaker, Ted Knaak, told me that much fieldwork time could be saved by mobile scanning, carried out by laser scanner with top-mounted camera on a moving platform. Despite the car having to stop each time the scene was captured, the system could record in one day what previously took a crew of land surveyors a week in the field. But laser scanner records only a representation, not interpretation; this and actual measurements have still to be done in the office by operators specialised in photogrammetry, GIS and CAD. This transition between fieldwork and office job also affects the balance of personnel backgrounds in a company; fewer land surveyors are needed for a project, but many more software operators. This is not to imply less need for professional surveyors; a massive increase in construction all over the world will require surveyor support. According to Christoph Effkemann, managing director at Phocad, Leica Geosystems HDS did important work in marketing laser-scanning technology. This, he said, would certainly open up the market for laser-scanning applications, from which other manufacturers would benefit.

ROI3

The need for geo-information is felt most at moments of crisis. Jeff Eichler of Bentley reminded everyone that Hurricane Katrina when it hit land took the lives of 1,836 people, the fifth deadliest catastrophe ever in the US. Such extensive disasters demanded

the involvement of emergency teams from all over the country. Since these people were not familiar with the area, they needed mobile technology - GPS connected to map data - to literally show them where they were. Eichler demonstrated tools to facilitate preparedness and recovery. The need for geo-information had, he said, led to huge volumes of it: peta bytes of data. How to manage such volumes and link sources such that the outcome was useful? This is where interoperability comes in. In his plenary keynote on the last day of conference, Malcom Walter, chief operating officer and senior vice-president, said that 15.8 billion US dollars were lost annually due to problems arising from connecting data at pivotal points in projects. With the help of Building Information Modelling (BIM) tools billions of dollars could be saved during construction work. Interoperability also came up in the earlier Cadastre and Land Management session, when Francois Valois, product manager at Geospatial Server remarked that the explosion in data was making it virtually impossible to manage without dedicated tools that collate information in spatial databases, drawings, business documents and other forms. It was not only Return on Investment (ROI) that counted, but also Return on Innovation and Return on Interoperability: in short, ROI3.

Awards

Awards of Excellence were handed out at the end of an excellent dinner on the second evening. Host was Chris Barron, vice-president of corporate marketing at Bentley and previously with Autodesk. One of the differences between the two companies, he said, was that at Autodesk, headquartered in California, you could take your dog in to the office, whereas at Bentley, on the other side of the nation in Pennsylvania, you could take your brother. And he showed a slide showing the four Bentley brothers. Award winner in the 'Innovation in Cadastre and Land Development' category was Iski Genel Mudurlugu, from the Land Estate Department of Istanbul, for its project asset-management information system for administration of Istanbul's water and sewerage infrastructure. Peter Glaudemans of Eastern Technical High School, Baltimore, was named 2008 international 'Educator of the Year' for inspiring his high-school pupils with the help of MicroStation to become the next generation of architects and engineers.

Travelling Less

To support ecological sustainability the conference programme booklet was printed on Forest Stewardship Council (FSC)-certified paper, made from wood fibre from well-managed forests. Al Gore's inconvenient truth has obviously also influenced Bentley's energy consumption policy. Becoming more energy-efficient is a big challenge for such a globally operating company, but CEO Greg Bentley proudly announced, "We have embraced the goal of reducing our per-colleague carbon footprint by 15% before the end of 2009, with respect to our 2007 baseline." The results of this on-going effort will be reported annually to encourage other firms. "As we learned, to my astonishment, from our carbon-footprint measurement exercise," Greg Bentley continued, "there is a strong case that working smarter should start with reducing business travel." Thus Bentley's annual 'sales kick-off', which in 2007 brought 440 employees and many guests from all over the world to Vancouver, this year became the first 'virtual sales kick-off', so eliminating travel. The present conference venue in Baltimore was also close to corporate headquarters in Exton, Pennsylvania, so that many employees could come by bus. But as face-to-face interaction and networking between users will remain essential for exchanging best practices, conferences are not under threat of extinction and 2009 will certainly witness another BE conference.

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