25TH ESRI INTERNATIONAL USER CONFERENCE

GIS… Helping Manage Our World

The continuing growth and exciting prospects facing the GIS industry were well reflected at the annual ESRI International User Conference held at the Convention Center in San Diego, California, USA from 25th to 29th July.

ESRI, founded in 1969 as a privately held consulting firm, has grown to become the largest company providing GIS software in the world. And according to Jack Dangermond, founder and president, the company is still growing at 10-15 per cent per year. Likewise, the ESRI annual user conference, attended by just eighteen people in 1981, has grown to become by far the largest GIS meeting in the world, attended this year by nearly 14,000 people. The theme of the conference was 'GIS... helping manage our world' and Mr Dangermond stressed and articulated that vision throughout his presentation. A parallel, informal theme for the conference was Africa. Dr Jane Goodall, the world-famous primatologist best known for her study of chimpanzees on the shores of Lake Tanganyika, appealed to GIS professionals to put their knowledge of remote sensing and mapping to the service of conservation efforts. And the big party held on Thursday night, complete with fireworks, was entitled 'Heart of Africa'. Formal and informal themes aside, the purpose of the conference pointed to by Mr Dangermond was "first and foremost, getting our users together."

Pre-conference seminars covered a wide array of topics. There were 'summits' on survey and GIS and location-based services. An education-user conference was also held, along with plenary sessions, 845 technical workshops, paper sessions and panel discussions. There was a map gallery and an exhibition hall hosting 275 exhibitors: software and hardware vendors, consulting companies, government and non-profit organisations, and others. There were also 94 special-interest group meetings, eighteen regional user group meetings, special displays, award ceremonies, press conferences and social events. The ESRI website carries a lot of material on the conference, including the full programme, blog, a list of award winners, and so forth.

Founder Vision

"Our world," said Mr Dangermond, "is evolving and becoming more populated, urbanised, technical, specialised, connected, globalised, informed and fragile. This is impacting the environment, security, biodiversity, the availability of resources and sustainability. Our cities are spreading into natural areas; we are getting warmer and the sea level is rising. The suggestion that I want to put forward: as a species, we need to better manage our world." GIS, according to Mr Dangermond, was particularly valuable as a framework for managing human activity.

GIS was evolving on the internet, he continued, creating a 'geoweb' of distributed collaboration, supporting publishing, discovery, sharing, interoperability, distributed data management, collaborative computing and application integration. He described a "geodata-rich society" that would be characterised by more geospatial information, including GPS/location data, geo-demographic data, data from real-time monitoring, and a twofold increase over coming years in the availability of satellite imagery, with greater access to it via Web portals and online GIS Services. The enabling technology for this vision would include further increases in processing speed, bandwidth and data storage, Web services standards, mobile technologies, real-time networks, and more services-oriented GIS software.

New Products

ESRI would continue to be a strong supporter of interoperability, including OGC standards and data interoperability extensions. In line with this, Mr Dangermond outlined ESRI software strategies to enhance ArcGIS desktop, strenghten and simplify geodata management, extend ArcGIS Server and increase mobile access to GIS and GIS tools. The company focus was on ArcGIS 9.2, which will be released early next year. In this new version, data compilation (where GIS often begins) has been improved. In addition 9.2 will include COGO construction tools and implement a complete cadastral tool. The geodatabase will also support user views and the production of multiple maps at different scales from the database. Version 9.2 will also support 'terrain', animation in all the different applications, and greatly improved charts. Mr Dangermond also described another dimension of his geoweb vision: managing distributed data, including the ability to do synchronised updates on the Web. The fastest growing part of ESRI this year, according to the company president, is free ArcWeb Services: 'Public Services'. Users used to have to pay to access these services but now the company is to make some available free for non-commercial use. The data is from National Geographic, GlobeXplorer, and TeleAtlas.

Partnership

The next generation of the MapMachine service will provide a link to the data and metadata of the Geospatial One-Stop (GOS) portal to help users discover information about their area of interest or study. MapMachine will also add capabilities for 3D globe services, allowing GIS users to 'pull in' their own map services to overlay onto a globe. Also planned is the addition of ESRI MapStudio, to enable users to create customised maps. Other partner organisations include MDA, GlobeXplorer, and TeleAtlas, who are working together to provide satellite imagery, aerial photos and street-level data for MapMachine users. According to Roger Mitchell, vice-president of

EarthSat, "In addition to providing the imagery, we will go the next step: we will show how things are changing, how they have changed" using the company's complete Earth coverage from 1975 and 1990. GlobeXplorer president Rob Shanks said that since the company's founding in 1999 it had aggregated "the largest commercial collection" of aerial and satellite imagery: "We now produce well over 30 million maps a month. TeleAtlas staff pointed out the division of labour amongst partners: "Our expertise lies in building the data, these partners get it out to the people."

The new project will expand MapMachine to virtually the entire geographic vocabulary of National Geographic, fuelled by the new ArcExplorer viewer working in GIS server-based environments and giving users access to GOS data and metadata. The main focus of the MapMachine has been on education and this will continue. National Geographic subscribers will be able to use MapMachine to access some GIS sites and bring them into the consumer world. "On the other hand," Mr Dangermond said, "the GIS community will now have access to a 3D globe on top of which you can layer GIS data and it will be a free service."

Focus Education

Mr Dangermond recalled early ESRI involvement in the MapMachine project and wondered "Can we actually bring these two worlds, of professional GIS and the general public, together? Could the kids discover a GIS service (for example, from EPA or Census) and pull it into an educational environment?" Conversely, he added, "People in the GIS world would salivate to be able to put their vegetation data on a map." "If someone will build a commercial application and exploit these services for profit, there will be a fee." "But," Mr Dangermond explained "other stuff will be free and public service organisations will be able to use the data for free."

The next few months and years would be spent exploring the opportunities of this service.

But how will MapMachine relate to new, mass-market online mapping services such as Google Earth and Microsoft Virtual Earth? "It is not our intention to compete head-to-head with those services," Mr Dangermond answered. "The focus of Google Earth and Microsoft Virtual Earth is principally on search and they use geography to attract people to that environment. We are co-operating by making our technology interoperable with theirs". He then listed three principal uses of MapMachine: education and science geographical exploration, GIS users who want better base maps and people who want to make custom maps on demand.