



## To GIS 2001 and beyond

be added to a system as simply as a calendar control or a database table.

GIS 2001 will see many vendors offering ActiveX or Java components with which users can extend their software to access a variety of spatial data formats. This is not new. What is new is the acceptance of GIS by systems integrators, such as IBM and Andersen, and major software producers such as Oracle and Microsoft. While companies may still go to GIS vendors for products and advice, the tools are now such that any GIS developer can add spatial information to their application in the same way that any non-GIS developer can add standard database access to their application. GIS 2001 may be one of the last big shows where GIS sees itself as a product showcase; in the future such shows may be more concerned with specific spatial services and consultancy.

It is the second of the major changes that will facilitate the final integration of GIS into mainstream IT. This new development is the growth of Internet mapping. Ten years ago you could have written an article about GIS saying that the industry was about to move from the mainframe to the desktop; five years ago you could have said client-server was the way to distribute your spatial information – and in some ways it still is. In 2001 we can say that while Internet mapping has increased the widespread use of GIS both within and between organisations, its use has also proliferated between organisations and their clients. Many of the vendors at GIS 2001 will not be classic 'box shifters', i.e. they may not have a distinct product to sell, such as an application or data, but they will offer services. Such services may incorporate anything from routing information to data e-commerce, 'where's-my-nearest' websites and online conveyancing. The most hyped of these new offerings are likely to be those going under the banner of location-based services (LBS), where you will be offered all the functions of your corporate GIS on a 3x3cm screen with a 15-button keypad. While in their infancy at the moment, such services are likely to become the backbone of GIS in the coming 10 years.

Technological innovations have helped speed up the acceptance of GIS within the IT world, but they have often caused

headaches on the implementation side. It is often necessary to build a system from scratch, worrying about developing a particular gazetteer, making sure the data is up to date, integrating look and feel with functionality, and using the most appropriate algorithm for routing. These problems are especially prevalent for Internet mapping sites, where management of the disparate elements can be one of the biggest headaches after initial implementation. Wouldn't it be better if you could just go to a vendor for the service you want and then tie it up into an application? This is the promise and the challenge for the GIS industry over the next few years. While current technologies provide for this in a limited way, it is the next wave of technologies from Microsoft and Sun that will allow vendors to provide such specific functionality to other businesses (B2B), which in turn can wrap them up in a specific application for their own users (B2C). It is the provision of these 'web services' that will fuel application development and system implementation in the next few years.

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You could be forgiven for thinking that little has changed in the United Kingdom over the past 10 years – we're worrying about recession, the Conservative party is still having leadership troubles and we still can't beat the Australians at cricket. Yet the last 10 years have seen two major changes in the GIS industry that have dramatically affected the way geographic information systems are perceived, used and sold.

The foremost of these is a cultural change. Spatial data and information systems are no longer seen as niche systems within most organisations. In fact, they are no longer seen as separate systems at all but as integral parts of homogenous corporate information systems. While specialist GIS vendors are still the driving force behind spatial technologies, the systems themselves are no longer a special case. Rather than being 'fitted-in', they are just another software component that can

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