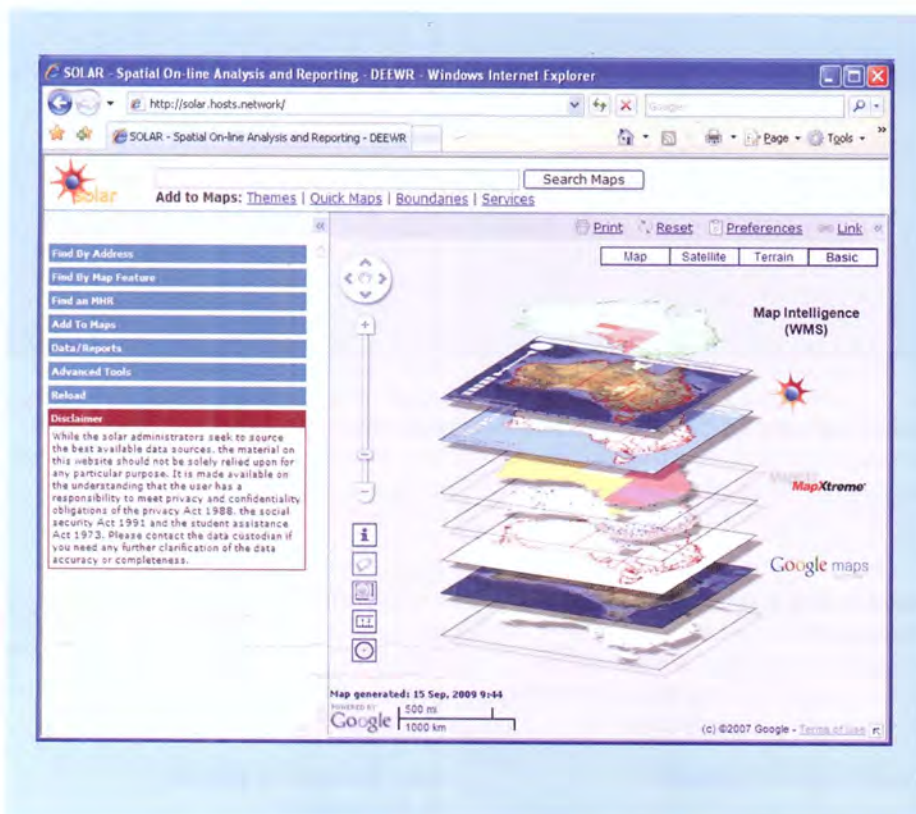


# Putting the Where into Business

Adding a locational dimension to business intelligence can improve data analysis and decision support.

**RODERICK ROSS**



*"The department opted for a solution using web mapping generated from BI data sources"*

Traditionally, business intelligence handles the who, what and when to investigate and analyse an organisation's performance. The 'where' dimension has been underused because of the complexity of presenting location data in charts and tables.

This means that most location related functions have been left to specialist GIS groups or built into specialised applications. But these typically don't fully utilise the power of the corporate BI tool or data warehouse.

However, when location components are integrated and visualised on a map, a BI solution can provide valuable insights into performance. This is particularly true where postcode or other factors related to proximity are part of a business analysis.

For example, viewing contoured, colour-coded business related hotspots in a 3D tool such as Google Earth might present a much clearer picture for analysts. BI tools – both traditional and spatial – are sourced from corporate data, so all visualisations support the one true view of the data.

The use of Google Maps-style web mapping services allows spatial mashups to be included in BI deployments. Mashups don't require styling, making the process of managing, storing and updating spatial layers, including roads and waterways, quicker and easier.

## Making It Work

Cost effective geocoding options exist, but they have security and scalability issues. These can be overcome by blending an Open Geospatial Consortium compliant product such as GeoServer – providing boundary layers of postcodes and suburbs – with Google Maps, which delivers a background layer of location context.

US Army Recruiting worked with BI spatial integration specialist Integeo to develop such a system. In 2005, Integeo built a custom solution integrating its map intelligence product with the army's graphical mapping analysis tool, (GAMAT) using PBBI's MapXtreme as the map server.

The tool tracks potential and future officer commissions and enlistments into the army and army reserve. It has been rolled out to thousands of users in recruitment offices throughout the US, providing direction for accomplishing daily assigned tasks. Recently the offices used Integeo's Map Intelligence to incorporate Google Maps



into GAMAT. The move has improved usability, reduced complexity in infrastructure management, and simplified the handling of map data.

### Another Dimension

How can 3D visualisation benefit the BI user? Linking with Google Earth enables the user to easily apply filters in the BI environment. These are automatically reflected within the site, providing an immediate visualisation with satellite photography. This can be achieved even using the humble Excel spreadsheet to view aircraft flight paths in Google Earth. It is also possible to thematically map census data with an organisation's performance data over Google's rich imagery.

Many organisations have invested heavily in BI and data warehouse environments; some have also invested in a spatial viewer environment. This involves training staff to use these tools both as application authors (business analysts and GIS programmers) and consumers (senior executives and operations staff). Capitalising on this invest-

ment requires the sharing of business data. A common approach has been to build the business data into a dedicated spatial repository for visualisation through the spatial viewer. Although proving effective, it requires a large upfront investment and heavy ongoing maintenance.

Loading data from a warehouse into a spatial database can be time consuming and expensive. The advent of standards such as web map services facilitates the linking of OGC compliant GIS products with spatially aware BI systems. Specialised GIS applications can now dynamically display visualisations sent directly from a BI tool, combining its 'slice and dice' capabilities with the application's functionality.

The federal Department of Employment, Education and Workplace Relations (DEEWR) had been accessing its business data via Oracle (Hyperion) and Microsoft Reporting Services. The department had invested in developing SOLAR, a compact geospatial application which held internal and external information, including the Australian Bureau of Sta-

tistics census data. But there was a need for additional business data to provide a more complete picture.

Faced with high costs, the department opted for a solution using web mapping generated from BI data sources, which laid Map Intelligence's layers over SOLAR. Staff use the BI tools to analyse data, working within the application's Google Maps interface and user-friendly GIS toolset. By incorporating these standards, DEEWR can simply add the product's features and functions to its existing GIS investment, providing the best of both worlds.

Services such as Google Maps and Google Earth are now making it possible for BI or data warehouse managers to incorporate location-based data in their business analyses. They can do so within a reasonable budget and still maintain data security. Alternatively, GIS managers can integrate their BI and GIS environments using dynamic web mapping export capability. ■

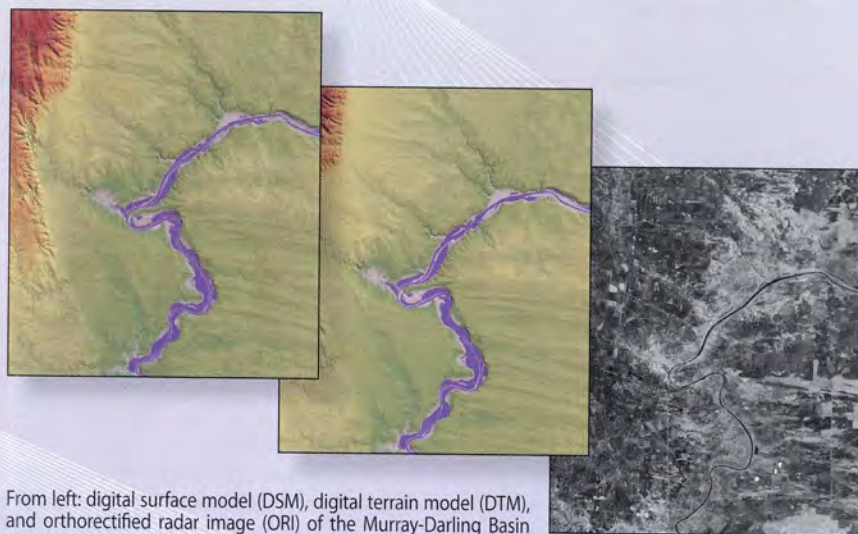
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