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Groundbreaking GIS means public services improvement

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Background

The e-Government agenda is encouraging public sector departments to co-operate more effectively in providing public services. This has spawned a number of initiatives to exchange information more freely through digital means, to improve the targeting of public services and provide widespread, more efficient access to those services – UK On-line.

The Northern Ireland Statistics and Research Agency (NISRA) sits centrally within the NI government and provides statistics and social research services to Northern Ireland Departments and Ministers to assist in social and economic policymaking, monitoring and evaluation. Northern Ireland Census Access and availability of small area statistics, through the Neighbourhood Statistics initiative, are both delivered through NISRA.

With the release of the 2001 Census data in 2003, NISRA identified a prime opportunity to "join-up" a number of key datasets through the Neighbourhood Statistics initiative, meeting Government requirements for wider access to more types of data.

NISRA initially instigated a pilot intranet providing Government departments with access to a limited amount of demographic data via a mapping interface. Such was the success of the 12-month pilot, NISRA was galvanized into developing the pilot into the much enhanced, fully functional Northern Ireland Neighbourhood Information Service (NINIS) launched on the internet this month. (See: www.ninis.nisra.gov.uk)

The GIS Solution

The structure of Government inevitably meant that separate databases were developed within departments and that the production of statistical information was similarly spread across departments. Using GIS web-based technology, and linking these disparate data sets through common area identifiers, NISRA has been able to produce the NINIS on-line analysis, thematic mapping and reporting tool.

The new NINIS system combines hugely expanded information including Demographics, Education, Crime, Health and Social Security statistics, "joining up" data from five departments and the 2001 Census.

Users can take one of two paths – the first path providing simple query facilities accessible to the general public.

This general overview (right) of a specified area is provided just by entering a postcode, and then choosing the size of your preferred area - from town to Census Output Area.
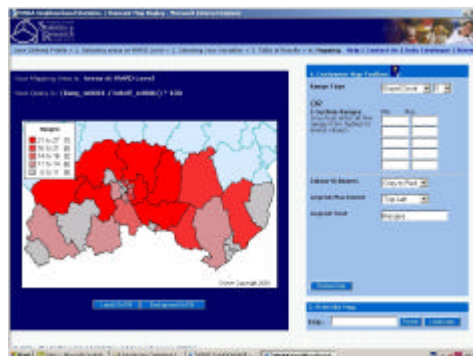

More excitingly, the second route enables the sophisticated user to do much more advanced querying and mapping analyses, where the focus is not obtaining datasets and variables, but rather manipulating the variables within user-defined geographies.

Users throughout government can satisfy their information requirements through map-based or textual queries at geographical levels from District Council right down to small area localities giving an instant picture of geographical trends.

They can compare and contrast one type of information with another in the same geographic area and the information can be presented in both tabular and thematic map form.

This map (right) identifying the number of burglaries in a Ward as a percentage of the overall crime rate is a very simple example of NINIS capabilities.

All access, calculations and results can be conducted via the web so no special software is required to access or use the system.

Business Benefits

Time and cost savings, flexibility and the ability to analyse data consistently are a given with NINIS, but the business benefits go way beyond this level.

It will be an invaluable management tool for Government departments in their decision-making processes, supporting, facilitating and contributing to the development of inter-departmental social policies. It will enable analysis of local area geography across a range of data, which will provide context, and a deeper understanding of the range of social issues, to inform debate and help plan public services such as health and education to meet neighbourhood needs. The ability to consider education data alongside health outcomes alongside crime data will have a significant affect on policy formulation. Trends and anomalies can be easily identified.

Informed policy-making will enable better targeting of capital expenditure and resources tailored to local needs. Then, just as importantly, the impact of those policies on a range of social indicators, can be monitored and subsequently refined over time.

Ultimately, the NINIS system will help deliver the right level of targeted services to the right people.

What Next?

The NI Minister of Finance and Personnel has described the application as one of the first "tangible examples of joined-up Government in the UK'.

The potential to tailor similar systems to meet other Government organisations' requirements is huge – simply "joining up" data sets within the same department, as well as across different departments, could result in significant improvements to policy-making in all aspects of the public sector.

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