

Enterprise Computing

Mike Turnill, Oracle Corporation

Maps and Location Information are increasingly at the heart of Enterprise Computing and I think it's important to recognise that accurate and up to date data is crucial to our most important industries and Government Agencies.

Whilst accepting that Consumer led activities are revolutionising the whole GI field and in ways that are to be welcomed, I nevertheless reject the concept that crowd sourced maps and data are wholly adequate for a wide range of crucial applications that support the UK economy. Crowd sourced spatial data has a role to play in many consumer applications and in some simpler business applications. For some business users this will be their first introduction to spatial data that is already proving to be a driver for the wider use of such data.

It is crucially important that we remember where the UK strengths lie – in the fields of science, engineering, healthcare and advanced infrastructure management. If the AGI focuses only the consumer led activities where data becomes cheap or even free on the back of advertising revenue then we will be failing to ensure the future of both the country and our major industries. The concept that the UK economy only needs to be consumer-led and that our traditional strengths no longer matter is a very dangerous assumption.

Geographic Information within the Enterprise

Maps and Location data are already widely exploited in Industry for Business Intelligence and we are already seeing huge changes coming from:

- An explosion of raster data from new satellites and aerial photography;
- An explosion in the use of location based sensor information – now being gathered in huge amounts for example in environmental, security and utility fields;
- The need to link CAD information to external networks.

These changes will reinforce the need for accurate up to date maps that are vital to a number to a number of crucial application areas:-

1. *Land Registration and Usage*

- a. As the population expands rapidly we will need to accommodate more than 90m people living in ever more properties. This will require far better detailed control than we have today;

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- b. Managing the rural areas with the challenges of climate change, population growth, food production, flood and landscape management will be even more important;
- c. Land and property taxation has to be based on accurate information.

2. *Planning processes, Conveyancing in Local Government*

- a. Related the first point, planning has to be carried out on the latest and most accurate data – in detail, time and ownership;
- b. Recognised definitive datasets are essential to reduce duplication, conflicts and speed up service execution.

3. *Emergency Response*

- a. Ability of first responders to act confidently and swiftly to both natural and manmade disasters is expected by the citizen. Again up to date, detailed maps are an essential tool at all levels from co-ordinating rescue teams, identifying affected infrastructure e.g. flood damaged bridges, re- routing traffic, pin pointing those at risk e.g. elderly and infirm and finally accurately recording those addresses and areas impacted by a disaster for reparation.

4. *Defence*

- a. Lives depend on the availability of accurate maps – this is why our generals started the Ordnance Survey in 1791 – still remains true today. Detailed geographic data has been used in the prevention of terrorism where the matching of accurate addressing information and suspect information has proved invaluable.

5. *Environmental Data*

- a. Prediction of environmental changes and disasters, climate change
- b. Storm, Flood and Fire Management;

Increasingly the prediction of impact is required down to the single address and building level.

6. *Utility Asset management, street works, Regulation*

a. Most of the UK infrastructure was created in the Victorian era and much needs replacing and is in the process of being replaced. This needs accurate data down to the centimeter level;

b. *Public impact and the direct and indirect cost of street works is huge.*

7. *Smart Meters and Smart Grids*

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- a. The Government has announced that the goal is to have every house connected using smart meters – this requires upgrade and installation of new infrastructure;
- b. Smart Grids will need to exploit all forms of energy and will cover all areas including off-shore facilities. Seamless, accurate data both on shore and off-shore for the planning an installation will be crucial.

8. *Off shore data*

- a. UK has been a world leader in the area for over 250 years;
- b. Accurate Hydrographic data is needed for safety of navigation, off shore construction, environmental management, and climate change data.

9. *Mineral and Petroleum Extraction*

- a. Can only be achieved with very accurate 3D data both on and off shore;
- b. Detailed Geological data underpins these applications.

Future Applications

Today most applications use only vector data but increasingly these applications will incorporate raster and 3d data. This will dramatically increase the size of the underlying databases into the terabyte and petabyte range which all needs to be managed. It will then be possible to create virtual reality scenarios that will allow better planning decisions and reduced costs. This will create increased pressure for even faster, larger processing configurations. Some of these services will be delivered through cloud computing hosting. All this requires IT capabilities at the most advanced level, with ever more transparent user interfaces.

Applications also need to accommodate the vast amounts of sensor data now becoming available as well as the advances in Building Information Models.

It remains important to protect the availability of data from the ocean, rural and remote areas that are essential to agriculture and safety. The costs here will remain significant and should not be neglected for the sake of consumer led activities.

Summary

Overall our use of geographic information should be primarily about enabling us to manage the UK more effectively, and prevent precious funds being wasted. This means ensuring that accurate up-to date maps for both city and rural areas that will support the application areas above continue to be available.

Providing we have a strong economy the consumer can have fun using free data for communication, travel, shopping, social networking and in support of community initiatives.

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The AGI should ensure that we have the data (accurate maps and crowd sourced) and the skills and capabilities to exploit the full range of spatial information using that will fulfill the needs of the enterprise areas identified above. Such support should incorporate the Schools and Colleges that will make all this possible.

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