

Ulf Sandgren presented the paper “Services available 24 hours a day, 7 days a week, 52 weeks a year – What does it mean for us?”

Lantmateriet, as with many government departments, face the demand for continuous access to information, driven by demands of the citizen and the push for “e-government”.

To answer this challenge, Lantmateriet have delivered a wide range of services via the web.

The information and services provide underpin many other services in Sweden – both in the public and the personal domains.

Web services are viewed as an efficient tool to deliver services in an integrated, co-ordinated and efficient manner.

Sweden also has a high level of citizens willing and able to use internet services.

The current offerings from Lantmateriet can be characterised as mainly being about providing information about public services and downloading of information, although there are some more interactive services that involve processing information online or online purchase. It is these latter services that Lantmateriet want to increase in the near future.

The services are delivered through a virtual “marketplace” a one stop shop for geographic information

As a result contact has been made with new, large customer groups – exploiting new revenue sources.

This has been supplemented by targeted advertising

The services are monitored and feedback is very quick e.g. if something has been priced too high it is soon evident.

The services receive around 230,000 hits a month and the visibility and profile of Lantmateriet has been raised substantially.

The services provided include
Site centred/personalised mapping
Historic mapping
Environmental applications
Property applications

Costs – the system took around 1 million Euros to set up – income from internet sales in 2002 were around 4 million so has proved good value.

Peter Muller (GB) asked that as many of the services he describes are available in the UK but from private companies what are the advantages and disadvantages of being a public sector provider?

In Sweden there are also private companies providing these services, but Lantmateriet see it as within their specific remit from government to provide them. Lantmateriet are also the core data holder and have the responsibility for changes to

Session 5d: Technology 2

the data. Furthermore, some maps are no longer published automatically and are only available on demand. This requirement would be very difficult for a private company to cope with – Lantmateriet, on the other hand, have the capability to do this.

Brigitte Colombo presented the paper “Delivering a National Mapping Infrastructure: Case Study from Ordnance Survey”

Ordnance Survey GB have recently introduced a new infrastructure to underpin its national mapping products.

Key features are that the data is now object based instead of arc/node based and it exists in a seamless, as opposed to a tile based, environment.

It was achieved by completely re-engineering both the back-end technology and the data itself to create OS MasterMap, a database of 430,000 separate geographical objects.

Key features:

- The OS MasterMap product delivered on-line
- Many proprietary systems have been replaced with a single COTS system
- A seamless editing environment for the surveyors is being introduced, again using COTS packages for ease of management
- Exploited opportunities to work in partnership with GI/IT players
- Change only updates are supplied, requiring more sophisticated data management processes
- Supplied in GML, an open standard
- Support systems for the customer have been expanded and improved

This has resulted in external benefits to the customer in terms of an intelligent, accessible and definitive dataset and internal benefits to the OS in terms of reduced maintenance costs, more efficient data collection systems and increased opportunities to capture data once and use it many times.

The following questions of clarification were asked:

Peter Muller (GB) asked what the size of the OS database was and the volume of data transacted each day ?

Approximately 1 terabyte for the operational system and roughly 5000 changes took place each day with a data size somewhere in the region of 1 -2 mb.

Zeljko Bačić (Chair, Croatia) asked what the demand was like on the database ?

Currently the field tools work directly on the data in the database, although validation and management is done by the middleware. It is still a little too early to judge the overall impact as some processes still need to be put in place.

Neil Ackroyd presented the paper “The Application of Real-Time Kinematic GPS for National Large Scale Detail Capture”

Ordnance Survey GB still relies heavily on ground based capture technology.

Session 5d: Technology 2

They have recently introduced Real Time Kinematic GPS technology for surveying

The project has been very successful:

- 40% increase in productivity
- 25% increase in currency
- 15% reduction in variations between different groups
- Completed six months ahead of schedule in April 2003

Success has been achieved by these factors:

Built on a culture of always trying out new surveying technologies

Had project management in place with very clear mandate and goals

Used a prototype before going live with the system

Worked in close partnership with the supplier, Leica

All production related processes were reviewed by a dedicated team to ensure that improvements to delivery, quality and performance were gained.

Organisational changes were made when required

Commitment to the project displayed at all levels – from most senior managers to the field surveyors themselves.

Conclusion:

RTK GPS is an extremely good tool but it does require that capture methodologies and processes are reviewed to maximise the gains available from the technology.

The following questions of clarification were asked:

Ingrid Vanden Berghe (Belgium) asked whether the system captured x, y and height data ?

Yes the system does capture all three data although the OS is still determining how to deal with offset heights, such as on buildings.

Dietmar Grünreich (Germany) asked if transformation adjustments were made for the GPS stations and what geode was used ?

Yes, adjustments were made that resulted in an RMS of around 10cm and height accuracy, based on a new geode, was about 1 – 2 cm precision.

The geode used was a gravimetric model developed in collaboration with UCL, KMS Denmark and the University of Copenhagen.

Muhammed Salim Sulaiman (Zanzibar/Tanzania) asked why a project scheduled to last one year was completed in six months ?

Once the project had started the OS were able to accelerate certain parts of the process, resulting in an earlier completion for the project.

Trevor Shaw (Jamaica) asked whether many local transformations were used in developing the transformation parameters or just one national one, and how many control points were used ?

The OS did a series of local ones across the country. The OS used 3,000 points. The OS have been doing transformation for about 10 years and already have 1,000 established points in place. In the last two years another 2,000 were added.

Session 5d: Technology 2

Peter Dare (Canada) asked how reliable the RTK system has been from base to rover station ?

Radio propagation has made it difficult in places but interference can be resolved by putting in the right basic operating procedures – surveyors have radio scanners, for instance, to check on potential local sources of distortion. However, there is room for improvement – OS would like to move to a more wider area network to replace the use of local stations.

Zeljko Bačić (Chair, Croatia) asked whether this project could have been done in an outsourced environment as opposed to the in house development approach taken by the OS ?

Many of the benefits resulting from the project were due to the economies of scale – there is no reason why the OS cannot be as efficient as contractor.. However, there is no reason why such a project could not be outsourced although the vendors should be (contractually) encouraged to make the same kind of efficiencies.

John Latham (FAO/UN) was under the impression that there were 4 – 5 agencies in GB collecting this kind of data and if that is the case what are the opportunities for sharing the data ?

The OS has the primary responsibility for collecting topographic data but we do work closely with other organisations such as the Land Registry over property extents and the Agricultural Department for field boundaries, not only to share data but also experience.

Sam Bacharach (OGC) commented that the US Census Bureau is currently in negotiations with 13,000 organisations across the US to prepare for data collection for the 2010 census and it is evident that the technology for data collection is much less of a problem than the politics involved in getting cooperation and agreement between those involved.

Scott Baggie (British Virgin Islands) asked to whom the OS outsourced the creation of the geode and what quality issues resulted from that decision ?

It was created by OSGB, KMS Denmark, UCL and the University of Copenhagen. OS Ireland and OS Northern Ireland were also involved. No problems were found with the quality. Much groundwork had been done in the last ten years in evaluating different models to ensure that the right one was created. The OS did not do it themselves as the balance between fixed and variable costs for the project indicated that it was better sense to work with partners rather than go it alone.

Siva Kumar presented the paper “Technology at local level – mapping the neighbourhood with school children”

The paper describes a series of experiments that attempted to bring mapping into the classrooms of children to revolutionize aspects of local planning, education and development in India.

Maps are a very powerful tool for giving us a new perspective on our surroundings as well as building a sense of environmental awareness and responsibility.

The project builds on the idea of participatory mapping.

Session 5d: Technology 2

Under the project, children were encouraged to make neighbourhood maps. The information collected would become a repository of information on which decentralised planning and developmental decisions can be based.

The programme was conducted in three parts

Phase 1 - building awareness of the overall vision through performance art, centred around The Great Arc project

Phase 2- Awareness raising of mapping and its importance

Phase 3- An extensive "hands on" programme of "Mapping the Neighbourhood" with school children, using hi-tech tools such as PDAs and GPS receivers.

The approach is very bottom up – the children do the work to inform their peers, their parents and then the government !

Children were chosen as the primary participants in the project because;

Reflections made in childhood often remain into adulthood

They can influence their parents

They are fast learners !

The following questions of clarification were asked:

Dietmar Grünreich (Germany) asked what ages were the children and why was that age range chosen ?

The children were between 10 – 14 years old. That age range was chosen because it was felt that they would be old enough to understand what was required and to get to grips with the technology and also have enough skills to communicate their involvement and experience with their peers.

Lucy Phalaagae (Botswana) asked if the project was restricted to a certain district or where all schools in India involved ?

The project was restricted to 100 schools in one district of India.

Brigitte Colombo (Oracle, UK) commented that it was such an impressive programme and should be used more widely and asked how it was funded and whether the programme would be enlarged?

The project was government funded. The programme was going to be put into the official school curriculum to enable it to be spread throughout India.

Eydís Líndal Finnbógadóttir asked what happened to the data collected by the children ?

The data will be fed back in at the national level to help with local planning, development and environmental decision making.

General discussion

Following on from Siva Kumar's presentation, Neil Ackroyd commented that even in the UK, geography may be coming off our school syllabus, which illustrates a disconnection between the education departments and other government departments and even industry, both of which are moving much more to the recognition of the value of geography to everyday life and economics.. The OS have a scheme whereby each 11 year old in the country is given a map of where they live to try and generate interest and reinforce the value of mapping and geography.

Session 5d: Technology 2

Engaging with children should be something that NMAs, and industry, should do more of.

Ulf Sandgren proposed that this should be presented as a resolution from the conference that;

NMAs should engage more with organisations responsible for the education of our children to ensure the continued study and promotion of geography within schools.