The Power of Geography

At the end of the tumultuous eighteenth century the British government ordered its Board of Ordnance, the defence ministry of its day, to survey the countryâ€™s south coast. Today Ordnance Survey (OS) is a self-financing Â£100-million-a-year civilian organisation, still part of UK government but since 1999 having â€˜Trading Fundâ€™ status. Its workforce of around 1,500 people includes three hundred surveyors. How is OS coping with todayâ€™s technological challenges and social needs? What are the product trends, and what opportunities are offered by INSPIRE? Vanessa Lawrence, at the OS helm since September 2000, kindly answered these and other questions.<P>

What are the mission, business vision and ambitions of Ordnance Survey?

The Ordnance Survey (OS) vision is to be the chosen provider of content for location-based information in the new information economy. This means for OS and our partners that together we are responsible for providing the underpinning geographic framework for the nation. It is our job to collect, maintain and portray and distribute the geographic context that enables business, government and our society as a whole to operate. We are government owned, so do not focus solely on profit, but by covering our costs and returning a dividend to government we are able to invest in a sustainable way forward that maximises the future use of geographic information (GI). We have around five hundred commercial partners who rely on our data to create value-added products and services. Market sectors such as insurance and banking are still in the early stages of harnessing the full power of GI, but as the industry grows I hope to see many more companies working with us and using our data.

Can you see a time when there will be geo-information for the millions?
We have been at the forefront of government objectives to make public-sector information more accessible. The last twelve months have seen the launch of our web 2.0 platform; OS OpenSpace makes free, non-commercial experimentation with our data a reality. We have also launched the Explore portal that gives outdoor enthusiasts the chance to plot, share and search for favourite routes online. This is so far unheard of in the public sector, and something of which I am very proud. GI has never been so much in use, or benefited so many people. There is increasing exposure of the power of geography to visualise and interpret information over the web, in satellite-navigation systems and in many other aspects of our daily lives. We play a key role here, and I want to see that continue and expand in coming years.

What are your main activities and who are your main customers?
Our main activity is maintaining OS MasterMap, the definitive record of Great Britain’s geography and the largest database of its kind in the world. We do this via three hundred ground surveyors based around the country; we also have two aircraft. Every day, around five thousand changes are made to OS MasterMap, ensuring that our own work and that of our partners is based on the most accurate and consistent data. OS MasterMap is actually a family of products made up of topography, address, transport and imagery layers. Each is in itself a powerful business tool, but thanks to their seamless topology many of our customers use two or more layers together. Surrey Police are using OS MasterMap Topography and Integrated Transport Network Layers together with their own intelligence to support command and control functions. National Grid, Norwich Union, Highways Agency and Nokia are just some of the other customers. OS provides the definitive correction information for the use of high-accuracy GPS, utilised by our own surveyors to collect data at an accuracy of a few centimetres. It is also licensed via partners to the commercial sector and used in many high-accuracy applications, including the construction and accident-investigation industries. Many people know us solely for our paper maps. We still print, ship and sell millions each year, but because of the overall growth in the GI industry, paper maps now equate to less than 10% of our yearly revenue. Our data is relied on within the satellite navigation and transport industries, in the utilities sector and among leading insurance and risk-management businesses. Central and local government bodies and the emergency services are also harnessing GI to make a real difference to the services they offer.

How do you get feedback from your customers to improve products and services? Our OS Insight programme aims to promote a closer working relationship with customers and partners. By working together throughout our product lifecycles we have a better chance of developing the best products to meet our customers’ needs and providing all necessary support at the launch of new data products. Last year we ran a series of seminars for customers in both local government and the emergency services. These events were a learning experience for us, providing a better understanding of the challenges faced by these organisations on a day-to-day basis, and how GI might play even more of a role in the future. We often find that an organisation takes GI for one purpose but soon realises that it can be used in ways they did not originally imagine. These seminars were a powerful way of bringing that versatility into the spotlight. Also, in the private sector we took part in the Insurance Times’ Question Time event that gave us the chance to hear firsthand from insurers what they want and need from GI. Customer feedback was also fundamental to the launch of OS OpenSpace. At the closed, alpha stage in December last year, we invited around twenty developers to try it out. Their feedback helped us ensure that it was fit for purpose ahead of the wider public launch in January.

What are the main trends in Ordnance Survey product and service supply? Will these trends have any impact on the technologies you apply for acquiring spatial data?

We are definitely seeing a trend towards 'data components' as opposed to simply 'data products'. Customers are increasingly deciding what data they want, as opposed to what we as a data supplier want to offer them. This will be reflected in more and more web-hosted services, where customers can dip in and out as and when they need to; this is certainly the ethos behind OS On Demand that will be launched later this year. To facilitate this we need to ensure that data is provided to common standards. In terms of the impact on the technologies we use; there is an absolute need to collect and distribute data in a way that makes it as compatible and interoperable as possible. That is why OS Net, our network of satellite receiver stations, is fully in line with Digital National Framework (DNF) principles, as is the entire OS MasterMap product family. By following DNF standards all users across multiple organisations can unambiguously know that they are referring to the same object at a location. This is especially important for collaborative working across businesses. Work continues on extending the standard to support marine environments, atmospheric objects, underground manmade objects, and underground natural objects.

Is the "spatial" in "spatial data infrastructure" (SDI) still special, or is it fated to become just another area of society's general information infrastructure?

There are many views regarding the scope and nature of a SDI. In a sense each country has always had some form of SDI, ever since the publication of the first map. Overall, 'spatial' will increasingly cease to be seen as 'special'; it will become just another source of information in customer databases and people may not even realise their work is being helped by GI. However, I do believe that the concept of 'place' or 'location' remains vital for policymaking, service delivery and decision making. The challenge for the future of spatial information is to develop a vision for the information infrastructure that does not lead to 'dead ends', but identifies and supports the kinds of joined-up services and applications that can be offered. Dedicated applications that reuse existing services, designed within common standards, solve not only some of our problems today but can be extended to accommodate new developments in the future, whether in a modernised public sector or beyond, in the private sector. If OS is to play a role in the next-generation SDI we have to centre on providing a modern georeferencing framework.

You have described OS as government owned; you cover costs and return a dividend to government?

Indeed, I report directly to a minister. We are a public-sector Trading Fund. This status means we have to be responsive to the needs of customers; they only pay if they are getting good value for money, so it certainly keeps us on our toes! The way we operate now also means we are able to cover our own costs and are free to reinvest where money is most needed. This can mean in data maintenance and ensuring that the quality of our data remains at the high standards we set ourselves. That is why we have recently set out a four-year plan for data collection. We also return a yearly dividend of several millions of pounds to our sole shareholder, the UK government, which makes us unusual in the public sector. Our national remit means national consistency, so we can be relied on to help respond to situations and emergencies wherever they might occur. In the last few years alone we have supported the efforts to contain foot-and-mouth disease and the floods that hit many parts of the country.

What opportunities do you expect the INSPIRE initiative to provide for OS?

The EU INSPIRE Directive provides a common European framework and defines what needs to be done to achieve interoperability across the continent. The UK Location Strategy now also aligns with the INSPIRE framework, and a common governing body will be established to co-ordinate how the UK, as a European member state, will deliver an INSPIRE solution as well as the UK Location Strategy. The UK Location Strategy is a first attempt to co-ordinate how the public-sector better manages its spatial information. While it has different drivers from INSPIRE, a common information infrastructure can be shared. The DNF supports all of this by describing how the national infrastructure will connect up, and this fully complements the INSPIRE framework. In bringing all this together OS MasterMap is well positioned and is increasingly being used intelligently as the common reference base. The four developments therefore fit together well, and with careful stewardship can contribute to a step change in the use and exploitation of spatial information in the UK. This is not to say that there are no challenges; in moving forward there will be many, especially in organisational engagement and alignment, as well as licensing issues. Nevertheless, it is a unique moment, and one that holds great promise. There is certainly huge potential for "the whole to be greater than the sum of the parts".

How might western countries support developing countries in their need for geo-information?

One of the most important things is sharing of good practice. In February 2008 OS won industry recognition from the International Standards Organisation (ISO) for world-class data collection and management. By sharing this knowledge with the developing world we can make a difference and help them make the most of GI. We aspire to be world-class across all of our activities, and believe that our production programme management principles can benefit data providers and contractors on an international scale. By sharing expertise, technologies and business practices now we can help foster the development of international standards that will benefit not just the developing world but also the entire GI industry. This is why events like the Cambridge Conference, hosted by OS every four years, are so vital. They are great opportunities for networking, learning and comparing business models, whilst laying important foundations for developing SDIs on a regional and continental basis. I am delighted that as a result of the Cambridge Conference GSDI are creating and planning to maintain a secure web portal for use by all national mapping agencies to assist the sharing of good practice. Plus assisting those in possession of no longer needed technical equipment to pass it on to colleagues in other nations who might have use for it.