

future growth



Above: Restaurant finder Shanghai style – consumer LBS advertising on the metro.

OVER THE LAST 20 YEARS the geospatial industry has been changing but in relatively small increments. There have been many breakthroughs, but their effects have emerged at a rate that businesses and Government could absorb and adapt to relatively easily.

In contrast, what we are currently witnessing can justifiably be described as a paradigm shift. The simultaneous coming together of many changes, some driven by “disruptive” technologies but other aspects driven by social and environmental developments, is causing users to view geospatial

currently available, advanced from 2007 figures. This is unsurprising as the recession only took hold towards the end of the year.

At the time of this update, in the third quarter of 2009, signs of a modest recovery are beginning to show in general economic indicators. However, the UK geospatial market is still heavily reliant upon the public sector and here, the burden of Government’s huge borrowing during the crisis, is resulting in very severe cutbacks for the financial year 2009-10, which we believe will feed through into 2009 outturns and continue well in 2010.

There are a number of major business trends, social, political and commercial, currently affecting the geographic information market, both in the UK and more widely. Some of the most significant are summarised below.

Integration of GI into the IT mainstream It is widely recognised that geospatial technology and data to support its integration with business and mission-critical systems is now a mature “product”. The leading GIS packages have been re-engineered in recent years

Directions and growth prospects for UK geospatial

In April’s *GISPro*, **Andy Coote** of Consultingwhere looked at the current size of the UK geospatial market. He now focuses on some of the key business and technological drivers of future growth when geography becomes context.

information differently. The concept of geography as context is a powerful metaphor; it embodies the idea that geospatial data becomes a basic ingredient of an information system, ubiquitous to all applications. Consequently, we will need to stop talking about geospatial applications, as all applications will embed geography, it being only the extent to which this is relevant or explicit that will vary.

This paradigm shift is happening against a backdrop of what is viewed by most observers as the worst economic downturn for more than a century, with the UK being amongst the countries worst affected.

It is our view that these factors will force a radical transformation of the industry within a period of 1-3 years.

Macro-economic outlook The global meltdown in financial markets in the latter half of calendar 2008 has had a devastating effect on both consumer and business confidence in the United Kingdom. However, the worst predictions of the effect on the geospatial market appear not to have materialised. Evidence suggests that most businesses are seeing a downturn in new orders but that repeat business and enhancements to existing systems has helped revenues hold up relatively well. Certainly for most companies revenues for calendar 2008, the latest

on industry standard software platforms and fit well into a Service Oriented Architecture (SOA). Furthermore, high quality, richly attributed geospatial data is widely available for all parts of the UK. Consequently, geospatial systems are increasingly being seen as a viable component of enterprise IT transformation projects, both in both public and private sectors.

The transition into the mainstream of information systems development will be unsettling for geospatial software and service suppliers. Without the financial muscle to prime high value transformation contracts, control will pass to system integrators and management consultancies with consequent restrictions on their access to the customer.

Emergence of geospatial tools focused on the consumer-market The major players in this rapidly emerging area are Google with Google Maps and Earth products, and Microsoft with Bing and the recently purchased Multimap. These tools have made geospatial data accessible and intelligible to a much wider range of users. As business leaders and politicians discover their capabilities through leisure and social activities, they are recognising their applicability to the working environment. Neither Google or Microsoft appear to be moving to provide business transformation and systems integration services necessary to leverage the



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opportunities afforded, offering opportunities for professional services providers and application developers to fill the gap.

The wired generation The aspirations and attitudes of the 15-24 age group, those who have been brought up with the Internet, and referred to often in research as the wired generation or generation Y, are beginning to drive substantial social change and this will accelerate as they enter the workforce.

One example of this, with wide-ranging potential ramifications for any information-based industry such as geospatial, is indicated by work quoted in the annual market report¹ of the communications regulator (Ofcom):

"A survey conducted by Human Capital, provides evidence of the attitude held by younger people towards the availability of music content; it suggests that two-thirds of 15-24s think that downloading music for free is "morally acceptable".

The limited appetite of this generation to pay for content on the Internet and limited respect for copyright, is a trend those working in the area of geospatial Digital Right Management (DRM) would be wise to note.

Another recent report on Generation Y², commissioned in part by Ordnance Survey, identifies that they are not prepared to be "driven" by the work ethic of their parents and are willing to accept less material rewards for a better work / life balance. This will have significant impacts on employers, who will need to adjust their expectations of employees' career aspirations.

Social networking Social networking continues to grow rapidly. Ofcom also reports that Facebook reached a monthly unique audience of 19 million and Twitter had 2.6 million unique visitors in May 2009. Furthermore, the fastest increase in take-up is among 35-54s – up by eight percentage points since Q1 2008 to 35%.

Currently, only a minority of people use advanced functions on their mobile phone handsets, particularly location-based services. However, the number of consumer location-based applications available for 3G Smartphones (such as Apple's iPhone, Google's Android and BlackBerry) in the US grew from around 20 to an estimated 2500³ over the 12 months to May 2009. The same source also quotes the US leader in location reference information, Skyhook⁴, that it provides over 240m location fixes per day to its 40m subscribers.

Some of the most commercially interesting location-based services include locationally-enabled dating, tracking of children from mobile phone signals

and geo-tagging photos. The research firm ABI estimate that location-based mobile social networking will generate global revenues of \$3.3bn by 2013⁵. Although this figure appeared to be very optimistic even before the recent recession, it is clearly a significant opportunity over the next few years.

Regulatory Compliance This applies most obviously in the financial services sector. Here the ongoing impact of greater regulation has resulted in large proportions of IT budgets being sunk into projects for systems auditing and integration to the detriment of more "discretionary" applications such as GIS. However, regulatory pressure has had a beneficial effect in the UK utilities geospatial market, where greater reporting requirements and penalties for poor practice will continue to be a major stimulus for improving asset management systems.

Climate change Visualisation is the most obvious application of geospatial information within the climate change debate. However, vast amounts of information must be processed and analysed, usually on a geographical basis to validate the science. Flood control, coastal zone management and insurance perils assessment are all applications that are growing in importance as a result of climate change. In addition, many individuals and organisations are seeking to evaluate the carbon footprint of their activities – an exercise that requires information on location and travel distances whether by staff or within the supply-chain of their products.

Specific UK geospatial initiatives The UK Location Strategy⁶ has the potential to drive significant change, particularly by stimulating improved coordination in the exploitation of geospatial information across the public sector. However, the timing of its publication could hardly have been worse, in the depths of the economic downturn, and the initiative is now in danger of being "strangled at birth" by withdrawal of funds by some of the major government players.

The INSPIRE⁷ (INfrastructure for SPatial InfoRmation in the European community) Directive will have an increasing impact particularly on public bodies. Although primarily focused on supporting environmental initiatives, it will create shared services and data specifications, relating to over thirty themes, from addresses and transport networks to buildings and demographic statistics. Implementation and compliance phases of INSPIRE will run for up to ten years from late 2009.

Technology Directions As alluded to earlier, the simultaneous emergence of a number of "disruptive" technologies is having a strong impact on the geospatial industry. We will now examine some of the most significant directions.



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Spatially enabled database management systems

In 2008, Microsoft launched a new version of SQL*Server incorporating for the first time core support for spatial data types. Oracle Spatial has been in the market for several years and has reached a level of maturity that it is now the default for many customers. The increasing level and complexity being added to the functionality of Oracle Spatial in version 11g, particularly in raster data handling, network modelling and web mapping, suggest that they are looking to provide a more complete solution, especially for business applications such as logistics and demographic analysis.

Mass market visualisation tools

Google and more recently Microsoft (with their re-launched Bing) have transformed expectations of both the experience of accessing spatial data and its accessibility. For geo-centric organisations, their integration into the existing enterprise systems represents a significant challenge. For geo-enabled organisations it lowers the cost of entry. Google have recently made a number of new product announcements: significant is the introduction of "geotargeted" advertising, allowing website builders to embed adverts into Google map applications, placement being driven by recent map browsing history.

Software as a Service (SaaS)

The notion that customers will find it more cost-effective to "hire" software on a transactional basis rather than licensing it, is set to be widely accepted over the next 1-2 years. In difficult economic conditions this is a very attractive model for public sector organisations in particular. Gartner forecast that the worldwide market for SaaS will reach \$8 billion in 2009, a 21.9 percent increase from 2008 revenue of \$6.6 billion⁸.

Open Source

Open source GIS have been available for a number of years; however, recent moves to bring together components into a more coherent framework means that they are now beginning to offer a viable alternative to the leading commercial packages. Certainly, the major vendors are beginning to talk more seriously at a senior level about what has been until recently the "the elephant in the room". The reaction of the public sector to recent new Government advice⁹ "endorsing" open source will also be significant.

Augmented reality

The massive multi-player online games industry is often regarded as the most innovative user of information technology. It is therefore significant that it is taking notice of Microsoft's plan to publish 6cm resolution imagery for over 300 cities worldwide and the arrival of Google's StreetView. When this is coupled with the potential for utilities companies to provide maintenance teams with heads-up displays of 3D

pipe network, the true potential of such data starts to become obvious.

Prospects for specific sectors

Future growth prospects for the geospatial industry have to be seen in the context of the overall prospects for the economy. A fragile recovery will only be sustained if businesses and Government successfully take costs out of their systems.

With huge technological advances, more widespread availability of open source data and systems, and greater consumer awareness, the prospects are good for those geospatial applications where cashable savings can be demonstrated.

In some markets this will be achieved by "cannibalisation" of existing investments. This is likely to be the case in the public sector where revenues are unlikely to grow in real terms and may even go into reverse.

Significant growth will continue to occur, led by services revenues, in those sectors where geospatial applications are "bundled" within more wide-ranging transformation projects, such as utilities and insurance.

The strongest area of growth will be in consumer location-based services. This is likely to benefit only a relatively small number of big players, such as Google and Nokia, but there will be room for innovative start-ups, particularly those with SaaS offerings.

Further sector-specific analysis is available in the full report, freely downloadable from

www.consultingwhere.com/resources/reports.htm

About the author

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