The global geospatial market is set to grow even further in 2011, fuelled by demand from both consumer and enterprise segments. The technology application is pervading across all segments of consumer devices and services, as well as across all verticals of the public / private sector. The permeation of geospatial technology into location based social media has tremendously increased awareness among the general public and has unveiled new opportunities.

Globally, there will be an increase in IT adoption in verticals such as utilities, telecom and government, creating demand for holistic solutions. These sectors will continue to be a large source of revenue. New government initiatives in urban planning, developing sustainable cities, power,

land records, agriculture and forests will enhance technology application. In non-traditional verticals technology application will be driven through mobile and cloud-based solutions. There will be an intense need to convert and optimise content into value added information.

Developing economies take the lead

The geospatial market is growing faster in emerging economies than in the developed world. Growing economies continue to invest in infrastructure for power, water, wastewater management and telecommunications. In the Indian scenario, projects such as R-APDRP, AgRIS, JnNURM and NLRMP will boost growth in the sector. The country will witness continued demand for cadastral mapping, city / town and coastal mapping.

With the government of India's intentions to switch over from E-governance to 'G' governance, it is imperative that capacity building in geospatial sector has to be multiplied several folds. The Indian market is expected to growing at an annual rate of around 20-25 per cent in terms of both software and services business.

Upcoming trends

The industry is moving towards managing information spatially rather than managing spatial information. Solutions using open source technologies will gain demand. Concepts like "Cloud Computing," "Software as a Service" (SaaS) and mashup applications are catching up. The industry will need to provide specialised solutions that offer visible business benefits or even participate in business models like BOT

(Build, Operate, and Transfer). Cloud-based solutions and mobile applications have certainly become a reality, but except for some mash-up services and maps-on-demand, major cloud-based applications are yet to be developed.

In the short term, the growth areas could be related to consultancy for geospatial roadmap development, 3D navigational database, 3D cities, integration of GIS with BSS / OSS solutions and smart grids. 5D technologies are also set to gain demand. There will be growing emphasis on automated or semi-automated methods of feature extraction and content management. Sectors such as utilities, government and transportation will integrate GIS with mainstream IT and BIM.

Industry
Outlook 2011

Geospatial Today brings together industry leaders to share their views on how the geospatial industry will unfold in the near future

Robert F Austin
President, GITA

Geospatial market in 2011

As far as the United States is concerned, the geospatial market is likely to grow rapidly during 2011. With the guidance of the US Office of Management and Budget, the Federal Geographic Data Committee (FGDC) is deploying the geospatial platform, a portfolio management approach to geospatial data acquisition and management (www.geoplatform.gov/). This is likely to result in expanded, consolidated acquisitions during 2011 and the years beyond. In the private sector, the market for aerial photography and LiDAR data acquisition will expand in response to newly enhanced, GIS-based reporting requirements for the power industry's transmission lines.

Technology application

The importance of geospatial information to virtually all areas of enterprise computing is now widely accepted. Federal policy advisors suggest that 74 per cent of all federally acquired and managed material has a significant geospatial component, hence the increasing emphasis on geospatial searches at the Federal data clearing house (www.data.gov). Locally, the City of Tampa publishes 217 layers of data weekly that are used by a variety of industries and agencies. At the state level, data sharing through fusion centres will continue to grow.

The future

Among the trends in 2011, we will witness the expansion of vertical LiDAR data acquisition as costs are reduced. There will be increasing emphasis placed on cloud computing as agencies and private firms seek realistic approaches to storing, managing and retrieving the huge (and growing) volumes of data being acquired by automated sensing platforms. There is an expectation of a growing emphasis on automated or semi-automated methods of feature extraction and content management. Continuing concern with critical infrastructure protection will guide substantial investment in data storage frameworks, including the cloud environment. The recent adoption of 64 standards by the FGDC will serve to encourage standardisation throughout the industry, which in turn will simplify data acquisition and data sharing.

BVR Mohan Reddy,
Chairman & MD,
Infotech Enterprises Limited

Geospatial market in 2011

The industry seems to have caught up in 2010 from the difficult and recession hit 2009. The good indicators have been growth in stock market indices, positive growth in world GDP and increase in FDI, employment, industrial product and commodity prices. In comparison to 2010, we expect the world GDP to continue to grow. IT spending will increase globally and there will be increase in IT adoption in some of the emerging verticals like Utilities and Government coupled with liberal stimulus funding initiatives, which should help the geospatial market grow at a much better pace globally. In addition, it is also expected that the domestic market will show robust growth which will be driven by the India growth story, with more IT adoption and e-governance initiatives.

We will see robust growth in the global geospatial business, though there will be transformations in the way we have done business traditionally. The global economies will look at ways to promote local employment and consider some of those proposals favourably that are cost-effective and offer significant business benefits to them in utilising local skills. This will lead to the need to develop sustainable onsite / onshore delivery models – global delivery capabilities. There will be an increased demand for improvement in the service delivery levels and transformational outsourcing which offers a clear ROI to the customer. The mantra will be not only to "delight the customer," but also the "customer's customer" either through cost savings and/or improved service, feature levels. In addition, there will be an inclination towards new and innovative business models that offer tangible returns and competitive edge to the customers. Some examples will be "outcome based pricing models" or BOT / BOO business models which offer a win-win situation for both the supplier and the customer.

In terms of vertical markets, the network-centric industries like telecom and utilities will have an increased demand for more holistic solutions and at the same time there will be an intense need to convert and optimise content into value-added information. Infotech recently rebranded the UTG Division as Network and Content Engineering Division. This rebranding reflects a clear strategic direction and focus on business development and operations to better

support the core markets of utilities and telecom while also leveraging focus around Network Engineering and enabling us to create a new focus around Content Engineering. In case of "Network Engineering" the focus is helping us deliver a broader set of service offerings including Telecom Engineering, OSS, Smart Grid and Meter Data Management services together with Infotech's core geospatial and IT competencies. Gas and electric utilities, and wire line and wireless telecommunication companies are the primary markets for these services.

The "Content Engineering" business builds on Infotech's success in the Government and Commercial mapping markets. By leveraging many years of experience in managing large and complex geospatial databases, this business is poised for further growth by offering scale, process and quality excellence that help to transform partial and/or inaccurate data, into value-added content. Another growth trend will be the increased demand for solutions using open source technologies which result in lower license costs. Concepts like "Cloud Computing", "Software as a Service" (SaaS) and Mashup applications are also catching up in the arena of geospatial solutions. Keeping this in mind, the industry will have to offer specialised solutions incorporating industry business processes for the user organisations so that

there are visible business benefits on the table.

In the short term, the other growth areas could be related to consultancy for geospatial roadmap development, development of 3D navigational database and 3D cities, positional accuracy programmes and demand for integration of GIS with other BSS / OSS solutions, fibre deployment related solutions and geospatial elements needed in the roll out of Smart Grids by Utilities. In terms of the domestic growth, there will be continued demand for cadastral mapping, city / town and coastal mapping initiatives and jobs related to the various R-APDRP and Fibre rollout programmes. Another activity that seems to be gaining speed is the development of road navigational databases for India.

Technology application

The expectation is to have technology that is more vertically aligned to industry markets like telecom, utilities, transportation and so on. From the perspective of delivering software solutions, vertically aligned COTS products with lots of industry-specific features will help in rapid deployment of applications which are user-friendly from the perspective of that particular industry.

Technology is moving in the direction of getting more vertically aligned and my expectations would be to see technology getting more vertically aligned and one which offers more

automation, precision and user-friendliness.

The future

Cloud-based solutions have certainly become a reality and we can see a number of applications being adopted in the world of information technology. Concepts like "Cloud Computing" and "Software as a Service" (SaaS) are also catching up in the arena of geospatial solutions. Cloud-based solutions greatly help organisations reduce their capital expenditure, help them use only what they want and offer relatively easier exit options in case of incompatibilities. However, except for some mash-up services and availability on maps on demand, we are yet to see major cloud-based applications in the geospatial domain. However, I would think that in the future it could become a common practice to have cloud-based solutions in the geospatial domain as well and it could also be utilised by developers to develop geospatial applications using the cloud infrastructure.

This would also mean that the geospatial industry will have to be prepared to offer innovative business models which clearly spell out return on investments and offer cost-effectiveness or even participate in business models like BOT (Build, Operate, and Transfer). Keeping this in mind, the industry will have to offer specialised solutions incorporating flexibility to quickly adapt the business processes of the customers

so that they can get started on the go. For achieving this, the industry players will have to choose their areas of specialised skills and domain based on availability of resources, credentials and skills. This transformation will bring in a paradigm shift in the way we have been conducting business traditionally.
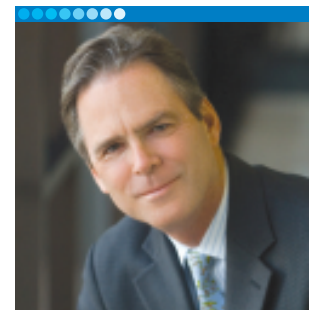
Matt O'Connell,
CEO and President, GeoEye

The geospatial market in 2011

We see continued growth opportunities in 2011. For example, the US government's 10-year EnhancedView awards, announced in August, will certainly drive growth. We won US$ 3.8 billion and our US competitor won US$ 3.5 billion. Under that programme, we'll provide imagery and services and build GeoEye-2, which will have even higher resolution (0.33 metres) than GeoEye-1, the world's highest resolution commercial satellite.

We also see growth in the application of GIS to international challenges, particularly in urban infrastructure and planning. In India, the Jawaharlal

Nehru National Urban Renewal Mission is applying high-resolution satellite imagery in their efforts to provide better facilities and services to citizens. Water and waste management, and national-level infrastructure improvements present growth opportunities.

New satellites will generate massive amounts of data, creating a need for advanced tools to interpret that data. To address that need, we are developing new online tools, like our Web-based information dissemination platform, EyeQ, to make imagery more accessible to our customers. Last month, we acquired the industry's leading geospatial predictive analytics company, SPADAC, Inc. As GeoEye Analytics, this division will provide solutions that enable customers to analyse where activities or events may occur that will influence their day-to-day operations. They do this by combining location-based information, geographic data and historic events with a wide range of other information sources.

Technology application

Online imagery providers like Google Earth, whom we supply, have done a great job of educating people worldwide about the uses of satellite imagery and GIS data. That is helping spread imagery from its original market – defence and intelligence – to more verticals.

Disaster relief is a vertical application in which satellite imagery is considered essential. The dramatic use

of imagery to help people affected by natural disasters is so newsworthy that it continues to build awareness of satellite imagery. Just as we are seeing new uses for archive and current satellite imagery in disaster management, we can archive imagery data over time and use it to measure both change and the rate of change. Vertical markets can use this information in a variety of ways.

A great example is in climate change discussions. To evaluate climate change, the world must first agree on a baseline from which to measure change. One way to do this is to establish a baseline of GIS data of the world's coastlines, forest cover or urban patterns starting with an agreed-upon year – say 2000 – and use this imagery as our first data point. Then we can compare imagery of the same areas annually, to measure the presence or absence of change. We are not looking for causation; we merely want to document whether or not change has occurred. Accomplishing this single task would make an important contribution to the climate change discussion.

The future

Cloud computing is changing the way the geospatial industry operates by enabling fast delivery of managed services and new information products. For example, GeoEye's innovative Web service, EyeQ, began operations with the National

Geospatial-Intelligence Agency (NGA) earlier this year. We are hosting data in a Web services environment so that large numbers of NGA users can access it securely – anytime, anywhere. EyeQ provides our customers access to secure, timely and accurate location information seamlessly delivered into their business environment.

Our new GeoEye Analytics division addresses the increasing need for cloud computing. GeoEye Analytics provides geospatial predictive analysis, expert insight, intelligence and information solutions to defence, intelligence and homeland security customers. Their pioneering, cloud-based work takes complex geo-processing capabilities and delivers them to the user as powerful and intuitive applications. GeoEye Analytics presents synergies with the online, on-demand solutions we are delivering to the NGA through EyeQ. We believe it will have applications in the vertical markets as well.

Steven Ramage
Executive Director, Marketing and Communications, OGC

The geospatial market in 2011

One of the points raised at

the GSDI 12 World Conference in Singapore (October 2010) was that we are now managing information spatially, as opposed to just managing spatial information. If you take this broader view of the geospatial marketplace then the possibilities are endless. However, this also has to be tempered with some of the fiscal realities around the world.

Globally, governments are being subjected to austerity measures that will impact many geospatial software and service providers. For example, one large defence integrator announced that 1,400 employees were let go and attributed this in part to the 17,000 job cuts mentioned in the *UK Strategic Defence and Security Review*. The UK Government announced 400,000 job cuts in the public sector. This is one of the reasons we introduced the OGC GovFuture membership category (http://www.opengeospatial.org/ogc/join/levels#associate), to help public sector bodies access information relating to standards, data management and improved efficiency.

On the positive side, geospatial activities have permeated the location-based social media through things like Google Places (formerly known as Place Pages for Google Maps) and Facebook Places. The numbers for Google Places are in the multi-millions and the newer Facebook Places is now available to Facebook users. These services will

increase awareness and undoubtedly offer new opportunities.

Also, there are countless areas in which information and communication technologies are being applied to address sustainability issues, even where profit rather than sustainability is the stated goal. Arguably, sustainable economies are simply economies that adapt to limited supplies of natural goods and natural services (such as carbon capture and waste disposal). In such economies, geography matters more than ever, and so does easy and open information flow.

For example, a European Commission communication entitled "Energy 2020, A strategy for competitive, sustainable and secure energy" states that "Over the next ten years, energy investments in the order of € 1 trillion are needed, both to diversify existing resources and replace equipment and to cater for challenging and changing energy requirements." There are a number of priorities and associated actions listed and these include smart grids. The location of every smart grid device and phenomenon, from room temperature sensor to brownout, is critical, so the smart grid depends on communication of location information. Major industry players and OGC members such as Autodesk, Bentley, ESRI, GE Smallworld and Intergraph are already involved in the energy sector

and working on smart grid and other energy initiatives.

"Think globally and act locally" suggests that we'll see increased consumer, local government and small business awareness of location or place, as well as large investments in infrastructure to support energy, climate change and other sustainable development challenges.

Technology Application

This question relates to my initial comment of managing information spatially. Consider the areas where geospatial data has an impact today. This ranges from bioinformatics to design and engineering to location-based social media, where we can see that geospatial technology is pervasive and ubiquitous. I don't think anyone can provide percentage figures to address the breadth of the technology application, but it's vast.

The OGC has an increasing number of working groups covering a number of topics and all provide an idea of growth areas in the work of the OGC. Despite my earlier references to the current economic climate, there is still investment going on in Spatial Data Infrastructures (SDI) at all levels worldwide. These SDI activities are touching on all manner of application areas, so in the Government vertical there are many more stakeholders being introduced to the power of location and this in turn is growing the technology applications.

In the defence and intelligence vertical (if it can be described accurately in this way) there is a greater and growing need to share data across borders to combat terrorism and enforce security. These same organisations are also heavily involved in emergency and disaster management efforts, so getting access to near real-time, accurate location data is crucial. We have seen an enormous rise in the use of user-generated content or crowd sourced information in this area, notably through organisations like Sahana and Ushahidi making use of free and open source software and data, like OpenStreetMap. This global movement is driving geospatial expansion.

The future

I would ask, whose future? Though many data and service providers are making a move into cloud computing, most adopters are moving cautiously, testing the various advantages over previous provisioning models and looking for assurances regarding licensing and security of data hosted by cloud providers. That said, the major information and communication technology platform vendors are making cloud computing very attractive in terms of easy access to data and services, flexibility, reduced cost and complexity for users, reduced risk from disasters, and scalability. The cloud plays an important role in innovation, because time to market for ideas is much

faster when new companies don't need to invest time and money in providing basic computing infrastructure.

As with any IT community that has elastic computing requirements or requirements to deploy applications at lower costs, the conventional geospatial markets can take advantage of the cloud. In the geospatial world, there are additional drivers for cloud computing, such as modeling, fusion, data mining based on geospatial criteria, data-driven science and indoor/outdoor navigation in a 3d environment, all of which tend to involve requirements for robust processing, fast data access, and massive storage.

OGC Web Services (OWS) standards were developed to make geospatial data and services an integral part of Web-based distributed computing, and so these standards are ready-made for cloud computing. They define the open interfaces and encodings that are needed to successfully host all types of geoprocessing on the cloud. This provides a variety of opportunities for large and small enterprises, government agencies focussed on building spatial data infrastructures, and traditional vendors of geospatial software and data.

Much remains to be done. Science, commerce, government, education and everyday casual users cannot benefit fully from

today's technical information infrastructure until the social, institutional, behavioural and commercial parts of the information infrastructure have matured. The human aspects of the infrastructure will become easier to deploy as solutions and tools become available that implement open interface and encoding standards for service chaining, data licensing, rights management, pricing and ordering, and order fulfillment. If participants in related standards efforts work from a complete set of requirements, and if they coordinate their efforts to avoid standards gaps, redundancies and inconsistencies, the convergence of technologies involved in cloud computing and geospatial data management will likely yield numerous benefits for society.

Sajid Malik
Chairman & MD,
Genesys International

Geospatial market in 2011

I see the market growing faster in the emerging economies that the developed world. The need for GIS has surged more in the economies who are investing in their infrastructure and in land administration and reforms. I believe that there will be a larger recognition of the role of India in the global GIS market and that we could see more Indian companies move up the value chain.

Technology application

I think access to recent higher resolution multi band imagery allows for several more areas of application. Also as more and more data becomes accessible the ability to parley to more areas increases. We are also seeing the advent of many more enabling technologies and hardware (such as tablets etc.) which will allow for ease and ubiquity of use and thereby enhance the spectrum of applications.

The future

In the Indian context, I believe, there will be maturity in terms of price discovery and project delivery. Several government led programs like R-APDRP or NLRMP have started last year. Industry maturity should set in wherein the right eco system may emerge for profitable and correct execution of these projects. The Indian market can potentially be one of the largest markets in the world if the industry were to be represented well and that initial projects are executed wherein customer satisfaction and ROI's are established.
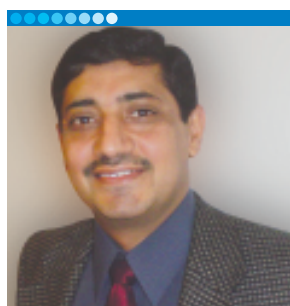
Rajesh Kalra,
Managing Director, RMSI

Geospatial market in 2011

Growth in the geospatial market can broadly be categorised geographically under three heads – the developed markets, developing markets and the least developed markets.

In developed markets like North America there are tentative signs of economic recovery. It is expected that the traditional/conventional GIS users who have been holding back new investments into this area will revive their GIS initiatives and spending.

In developing countries like India where there is an increased focus on infrastructure reforms to meet the challenge of rapid urbanisation, spending on GIS is bound to increase significantly. The government in India is already implementing the use of GIS in several large-scale reform programmes in various sectors – utilities, infrastructure, power, roads and transportation.

The growing realisation of the benefits of integrating GIS right from the early planning stages of infrastructure projects will fuel further growth for the industry. It will also ensure continued adoption of GIS through the entire project life cycle.

In the least developed countries like Africa, it is expected that there will be new and interesting opportunities for GIS. The global demand for energy and food has increased the focus on African countries for their large pool of natural resources like arable land and mineral resources. Africa today has become a prime destination for mineral exploration and agriculture development organisations and this is one area where there is going to be a significant adoption of GIS technology to help organisations maximise their return on investment.

Technology application

Technology applications are for sure expanding across verticals. First, there is an increased usage of mobile technology especially in the utilities space and also an increased use of hand-held devices for conducting field survey activities such as consumer indexing and asset mapping. This trend is likely to endure as the business scope and scale of activities is increasing.

Technologies such as mobile mapping and LIDAR are also likely to witness an increased adoption in Indian markets as soon as the regulatory framework becomes more favourable. Further innovative crowd sourcing applications enabled by GIS compatible mobile phones/devices are increasing the awareness

about GIS in the public. Also, initiatives like the National Spatial Data Infrastructure (NSDI) and Infrastructure for Spatial Information in the European Community (INSPIRE) are clearly the need of the hour.

The future

There is no doubt that cloud-based computing will play a prominent role in the coming future. However, traditional deployment architecture will still continue to hold relevance especially in areas where there are concerns of data security and criticality of application that make it necessary to have complete control on an applications' deployment and usage.

Cloud-based deployment will make it easy for consumers as well as small and medium enterprises to access and use GIS application in a more cost-effective manner. Therefore, the adoption and usage of cloud computing is expected to increase.

S Sridhar
President and COO, ESRI India

Geospatial market in 2011

The next few years are expected to be exciting times for the Indian Geospatial Industry. The momentum and the groundswell created by large

programmes like APDRP, is creating not only awareness but also a large pool of GIS savvy professionals. With multiple programmes on the anvil, we expect the momentum to continue and the market growing at least around 20-25 per cent per year in terms of both software and services business.

Technology application

The large programmes have brought GIS and IT closer, and many of the large Indian IT players, have started getting into integrated programmes which involves GIS and IT. This is likely to take the geospatial applications to an entirely new space and make them more widespread. All these make a perfect base for a much wider adaption of GIS in the country.

Challenges

There are some challenges which are yet to be overcome, especially around the availability of trained GIS professionals. The industry is working very closely with the various education and training schools to create a pool of professionals and we are confident that, just like IT education became popular, GIS technology will also become universal.

Manideep Saha,
Head, AEC & Geospatial, Autodesk India & SAARC

Geospatial market in 2011

Matured markets that will continue to be a large source of revenue will be utilities, telecom and government infrastructure. Development of infrastructure for the international events like Commonwealth Games and other such events will spur large investments in these segments. An emerging high growth area that we clearly see for the infrastructure design and geospatial industry is Sustainable Design in urban cities. Autodesk AEC business unit has taken a substantial step in this regard in helping the city of Salzburg, Austria in creating a Digital City Model. The basic idea is to create 3D digital city infrastructure design on a high precision geospatial platform. These are just some of the new growth areas for infrastructure mapping technology, and I think these may be good paths for India to adopt and move forward. Other areas where there is substantial potential are mobile computing and sales force automation. Last but not least, the power & telecom sectors continue to be big growth drivers that are very effectively leveraging infrastructure mapping data for significantly improving customer service levels and their ability to offer a lot of value-added services that helps them stand apart from competition for sectors that have been privatised or corporatised.

Technology application

The sectors that are largely served by the geospatial industry are utilities, government and Transportation. Organisations that are adopting infrastructure mapping /geospatial applications have to clearly look at converging these applications with their mainstream business IT applications, their design and IT operations, to extract maximum benefit. We are engaging with large user organisations, consultants, universities and colleges. Our intention is to help them develop and harness Autodesk skill sets so that they will be able to effectively and efficiently use all our products and services and realise true benefits. Similarly, we also intend to work with different design organisations and help them implement high quality design standards and create a closed loop between infrastructure mapping and 3D infrastructure design using our software.

The future

Infrastructure mapping technology is surely one of the key upcoming trends. This technology has the potential to become as ubiquitous and as popular as office automation software, ERP or CRM. In fact, vis-à-vis the revolution that we saw the IT industry go through over the last 10-15 years back, this industry may be poised for a similar revolution over the next three to five years. For this to happen, there needs to

be a tight convergence with mainstream IT so that users can optimise and leverage the huge investments that they have been making, both on GIS and IT.

Dr DVS Ravi Kumar
Head Business Development, IIC Technologies Pvt Ltd.

Geospatial market in 2011

Web enabled and cloud computing aspects will become prominent but will demand high interoperability of data. With Lidar and Radar technologies constantly improving and becoming cost-effective, new applications and automatic extraction tools are likely to emerge.

A huge market awaits the creation of base data. It will require the government willingness and intervention for the market to open up. It is expected that in near future a centralised base data will be setup which can be used by all the agencies thus doing away with redundancy and duplication.

China, India, and Brazil continue to invest in infrastructure for power distribution, water, wastewater management and telecommunications. GIS sales to these regions will increase as the local

utilities adopt GIS to improve their infrastructure management processes. With environmental concerns on the rise and accent on sustainable living, geospatial technology and data will be an integral part of any large development project. Utilities are likely to take up the major share.

Technology application

New initiatives by the government in sectors such as urban planning, power, land records, agriculture and forests will see geospatial industry substantially grow in the coming years. Pan India projects such as R-APDRP in the power sector, AgRIS in agriculture, JnNURM in urban renewal area and NLRMP concerning the updating and maintenance of land records and validation of titles will boost growth. Priority will also be given to disaster management and environmental monitoring sector followed by initiatives in the health, education and security sectors.

The future

The demand for GIS products is expected to grow substantially in the urban planning segment. The natural resources segment which includes agriculture, forestry, marine, petroleum and water resources is also slated for growth. The rural sector will see greater use of GIS services and products as emphasis is on greater integration and connectivity. At a global scale, monitoring and analysis of carbon footprint may be the new

application area.

Automatic extraction tools that extract information from data are on the rise. The ability to generate different data products from raw imagery will be of interest to many. There will be a trend to produce diverse data which the users can fine-tune or customise for their requirements. The value of the products will be proportional to the specialised data that can be derived. Open Source software is going to be strong influence to meet the needs of the competitive market.

With the demand for specialised data on the rise, the ability to deliver real-time information to feed sophisticated programs that react to data inputs without human intervention will be a big leap forward. Web-enabled applications will greatly benefit from such automation.

Maj Gen (Dr) B Nagarajan
Addl S G, Indian Institute of Surveying and Mapping

Capacity building in 2011

With the Government of India intending to switch over from E-governance to 'G' governance, it is imperative that capacity building in geospatial sector

has to be multiplied several folds to meet the requirement. Indian Institute of Surveying and Mapping, the training arm of Survey of India, has taken up the challenge in big way. Under National Land Record Modernisation Project (NLRMP) of Government of India, three-tier level courses are being run to impart training in geospatial data collection, computation and archiving and use in preparation of modernised land data records. So far more than 1,000 State Government Land records personnel including revenue department have been trained. Similarly under National Urban Information System (NUIS) project, under Ministry of Urban Development, Government of India, series of training programmes are being arranged.

It is now clear that the understanding of the importance of geospatial data has caught up the imagination of political top brass, administrative set-up in the country and also the common man in a greater way.

The requirement of large-scale topographical databases on 1:10K both by defence and civilian authorities has brought in the urgent need for scaling up the work force in the field of geospatial technology and correspondingly on the capacity building in geospatial sector. 2011 is going to be the YEAR of Geospatial Sector growth.

Surveying and mapping issues and trends in 2011

The work study group set up by Government of India under Chairmanship of Dr Shailesh Nayak, Secretary, Ministry of Earth Sciences, Government of India has clearly recommended that with the availability of high-resolution satellite imageries like Stereo Cartosat I, world view I and Geoeye should assist in immediately bringing out 1:10K thematic maps with limited topographic features. There are more than 1,00,000 maps to be produced. In addition, Ministry of Environment and Forest also has embarked upon developing an Integrated Coastal Zone Mapping on Scale 1:1000. These do not encompass the initiative taken by National Disaster Management Agency as well as several other Cadastral and Urban mapping on large scale being initiated by several State Governments and Urban Ministry, Government of India. In its part, Ministry of Defence also initiated setting up its own digital topographic data bases for strategic areas. Looking into all the above initiatives, it seems that the Surveying and Mapping issues which were mainly confined to security aspects have now moved to Developmental Sector. The introduction of New Mapping Policy 2005 with clear acceptance of Geocentric Coordinate System WGS84 as the Geodetic Datum, has brought in the commonness of the requirement of geospatial data both for national development and its security.

With this, Surveying and Mapping issues will now mainly deal with: scale of mapping, technology to be adopted, outsourcing of jobs to private geospatial industry etc.

Rakesh Verma
Managing Director, MapmyIndia

Geospatial market in 2011

The geospatial market is set to boom in 2011 fuelled by demand from both consumer and enterprise segments. India's aspiring consumers and burgeoning middle class are traveling far more, expect convenience to save them time, and are ready to adopt the latest technologies. They expect maps and navigation devices to be included their phones and cars. Governments are looking to build a strong infrastructural foundation of which GIS is a core component, besides the security needs which require highly detailed, accurate maps. Enterprises looking to enter, expand and compete in the hyper-competitive Indian marketplace have an ever-growing appetite for the extra business intelligence that GIS solutions can provide. There has never been a better time to offer best-in-class geospatial solutions to consumers and enterprises in the Indian market.

Technology application

The technology applications of geospatial solutions have pervaded across all segments of consumer devices and services – be it over the PC Internet, mobile phones, in the car, or the new class of tablet devices – as well as across all verticals of the private sector (retail, FMCG, telecom, automotive, logistics, distribution, banking) as well as public sector (transport, security & defence and development).

The future

Major upcoming trends of the geospatial market in 2011 will include navigation, as many car models across various segments are coming up with in-built navigation devices, and increasing use of location-based services by the telecom operators. Governments at national and local levels will implement many more GIS-based projects to ensure efficiency and transparency in the policy implementation and administration.

Ross Smith
Member, PA Consulting Group

Geospatial market in 2011

IT spend will once again start to increase in line with the recovery of the global economy, and geospatial technology will be at the forefront of this investment as CIOs seek to invest specifically in cloud and mobile geospatial technology to help rebuilt (or secure) their customer base, solidify their market positions and ensure they are complying with regulatory requirements.

Technology application

The use of geospatial technology across verticals will accelerate and be driven in small but measurable ways through the application of mobile and cloud-based geospatial services to non-traditional verticals.

The future

On the technology front, moving into the cloud and leveraging geospatial for mobile business applications will be the most prevalent developments in 2011. A continuing and perhaps accelerating trend will be the need for geospatial vendors and advocates to improve their ability to quantify, justify and prove the value of geospatial technology more effectively as executives continue to demand to know the ROI before committing budget to new geospatial investments.

Michael Jansen
CEO,
Screampoint International

Geospatial market in 2011

We anticipate we'll continue to see growth along the convergence of BIM with GIS, in concert with the rapid advancement of technology in that space. When used in conjunction, BIM and GIS complement and extend the capabilities of one another, yielding systems that harvest information from a variety of data sources and perform well at large geographic scales, while retaining the ability to link back to the source systems when highly detailed information is needed. This is crucial as cities and large developments seek to better monitor and control their built environments, from a city-wide scale down to within each building.

Technology application

Expanding to encompass more of the infrastructure industry seems inevitable, particularly transportation sectors. Current rates of infrastructure development are rapid. But it's a demand for better, smarter buildings, developments and road systems, yielding improvements in manageability, efficiency and user-experience upon what was there before. This is driving the new BIM and GIS convergent technology to become more widely adopted.

The future

We see the 5D movement beginning to come to fruition in 2011. 3D technology changed the way we interact with our world. The emerging 5D movement promises to redefine that relationship yet again, collecting and integrating real-time built environment data across a 3D visual base. The result is a real-time digital world, deployed to address crucial global issues from reducing congestion and carbon emissions, to emergency preparedness and reaping better business decisions. It's an exciting prospect that has the promise to reshape how we live, work and play, through the form of the digital city.
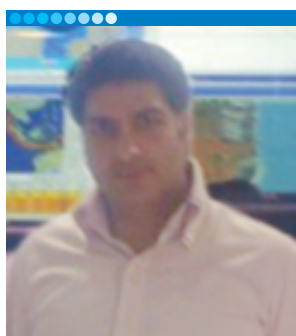
Mohammad Iqbal Butt
Director, Wapmerr India

Geospatial market in 2011

The industry is passing through a very exciting stage. GIS forms the basis for all the developing and planning activities of urban development and infrastructure, security and traffic management, disaster management, environment protection, agri planning etc. In India alone we have 800 major towns and cities and approximately 6,00,000 villages but we do not have enough manpower to completely map these in next five years. So, we need to invest in manpower, training and equipment. We see 2011 as the year of capacity building & innovation in survey product development, as there are many large-scale mapping projects in the pipeline this year.

Technology application

Spatial data is an essential component for planning projects across industry verticals. Projects such as R-APDRP in the power sector, AgRIS in agriculture and NLRMP concerning the updating and maintenance of land records will boost growth. Also, in future government is initiating new development programmes for urban planning, disaster management, homeland security, education etc which would attract more spending in the GIS sector.

The increasing visualisation needs of end users will raise the demand for 2d and 3d GIS. With the security needs in mind, real-time video analytics and video feeds have to be coupled with the base GIS data and shown to the end users.

The application linked with high-end mathematical simulation and risk management tools would provide the spice to the industry when we talk of simulating tsunamis/ landslides/ floods or real time damages due to earthquakes. This would further lead to real-time applications of loss estimation getting linked to the GIS domain.

The future

It has to be automation. We need to map the processes and use best practices and technology effectively to get these mammoth jobs done. With the launch of new GLONASS (GLS) mapping equipment, ground truthing and data collection would be much faster and more accurate. Also, 3D GIS would grow as city administrations are realising the importance of having high quality data. Location Based Services which converge the capabilities of GLONASS, GPS, GSM, CDMA and RFID used for tracking of manpower, equipment, and stores in real time anywhere even when they are under the roof, will be increasingly used. ◙