Interview

Interoperability: Sharing Data under Open Standards

GIM International Interviews Bart Hoogenraad, VP Global Marketing, Intergraph
By Joop W. Blom, Contributing Editor, GIM International

One thing learned from the past is to focus on our strength, says this month's interviewee, Bart Hoogenraad of Intergraph. As a strategic member of the Open GIS Consortium, the company is now helping prepare a community open to everyone wanting to share data under open standards; this will maximise by means of interoperability the usefulness to customers of valuable geospatial data.

Graduating from Technical University Delft in 1988, Bart Hoogenraad began his career with a leading offshore surveying company. Prior to joining Intergraph he worked as management consultant for a major telecommunication company.
As Vice-President Global Marketing he has been responsible for Intergraph Mapping and Geospatial Solutions' global marketing since 2002. He previously spent three years as Intergraph European Marketing Manager.
How did you find your way to this function?

I studied avionics at Delft University, specialising in GPS. After university I worked for an offshore survey company. Within this company I held several different positions, first as a flight engineer, second as a project manager, third as

an operations manager, fourth as a sales manager and finally as marketing and sales manager. After leaving the survey company, I worked as a management consultant for a couple of years before moving to Intergraph. My first position with Intergraph was as marketing programme manager; from there I moved to European marketing manager and then became global marketing director. I became vice-president of global marketing at the beginning of this year.

Could you please explain why you at that time chose Intergraph?

Intergraph is a combination of the three areas that intrigue me most: marketing, high-tech and geography. Intergraph has more than thirty years of market leadership. We maintain a focus on geospatial solutions and helping our customers achieve their business goals.

Could you please outline Intergraph market strategy and current focus?

Intergraph strives to be number one in the markets served. We focus on geospatial solutions that add value to

Mr Bart Hoogenraad at his office in Hoofddorp, The Netherlands

The answer to easy accessibility of data is open interoperability

our customers' organisations. This requires an in-depth understanding of our customers and their markets. Therefore we focus on a limited number of market segments: central, regional and local government, transportation, utilities, communication, commercial remote sensing and photogrammetry, military and intelligence. We deliver the workflows our end users need.

To that end we divide the world into three main geographic areas: North America, Europe and Africa and Asia Pacific.

How does Intergraph see the future?

The emphasis on selling technology is a thing of the past and currently more importance is being placed on data. Organisations want to integrate their valuable data into their business processes, such as infrastructure management, land management, (mobile) workforce management or resource management. It is no longer just about geographic technology and providing the capability to do buffer zones or spatial overlays or a specific functionality. It's about interoperability and what your data can do for you.

The future belongs to the young. How is Intergraph preparing for this with its world-wide educational programme?

I agree; the future does belong to the young. At Intergraph we believe it is our responsibility to help advance future geospatial information professionals. Intergraph's Solutions for Education programmes support the advancement of innovative GIS research and teaching and they ensure the recognition of academic excellence. Intergraph technology is available to teachers, students, schools and universities – at no charge – through many of these programmes: Team GeoMedia Registered Research Laboratories, GeoMedia Classroom starter kit and GeoMedia Education Grants programmes. We sponsor innovative research initiatives with our research grants. We offer opportunities for real-world work experience through our student internship programme. In addition, we are currently working on a Web-based programme to make GIS available to the very young.

What has Intergraph learned from the past?

To focus on the future and our strengths. We are a software solutions provider. If you compare Intergraph to other geospatial vendors you will see that Intergraph sells solutions incorporating software and services while many other vendors sell primarily products. (See the Geographic Information Systems Markets and Opportunities published in 2003 by Daratech [www.daratech.com/gis2003] for a breakdown on hardware, software and services for GIS vendors.)

If you were to subdivide activities and products into hardware and software and services, respectively, what proportions would they bear to one another? What is the trend here?

We are a solutions company – that is reflected in our revenue distribution. Approximately 15 per cent of our revenue comes from hardware, 45 per cent from software and 40 per cent from services.

Is Intergraph growing in a financial respect? If so, how is this growth realised?

Our profitability has improved continuously over the past year. We achieve that by stringent cost control, a highly effective organisation and the best team imaginable.

It is not allowed to spread information that might affect the mood of the market but for each listed company updated graphs may be found on the Internet; for Intergraph please see graph from: www.quicken.com/investments/charts/?p=ingr&tag=1.

Are there any new products coming up or are you concentrating more on new functions in existing product families? Could you lift a corner of the veil on developments?

We will continue to add functionality where it makes the most sense. A main focus of our product development is open systems that enable interoperability between Intergraph product families and other business systems. Interoperability makes it possible to maximise the usefulness of our customers' valuable geospatial data.

GPS-applications are becoming more and more significant. How is Intergraph capitalising upon this?

Intergraph's IntelliWhere division is focused on location-based services and provides numerous solutions that capitalise on GPS technology. A recent business partner-ship with Trimble allows Intergraph to offer hardware and software solutions that take advantage of GPS technology. For instance, the Trimble GeoExplorer CE de-vices are packaged with IntelliWhere OnDemand software to provide mobile workers with GPS-based field access to view and update both spatial and asset data.

IntelliWhere platform technology, such as IntelliWhere LocationServer and IntelliWhere TrackForce, supports standard industry positioning technologies including GPS and network-based mobile positioning systems. IntelliWhere TrackForce involves tracking the real-time location of mobile assets and field crews and then using this information to support operational activities, customer call-outs and emergency response.

Is GeoMedia a product for the millions or is there a more easily affordable product with just basic functionality?

There are two things to consider when answering this question. Though GIS is being used more widely, we don't expect GIS to become as common as, for example, word processors. We do see geospatial information becoming more and more integrated into business practices. Most of the time this will happen though very complex geospatial processing, without the user ever realising that the needed information is available. Many people today are using the benefits of Intergraph's GeoMedia-based Web solutions, much of the time without even realising they are using geospatial technology.

Data is like the blood in our veins; to keep us alive it needs to circulate freely. How does Intergraph contribute to the removal of obstacles, accessibility and standardisation of data?

Intergraph believes that the answer to this is open interoperability. We are actively engaged in several initiatives to move forward with this goal.

Intergraph is the only GIS vendor that is a Strategic member – the highest possible level - of the Open GIS Consortium. Intergraph participates in many of the OGC initiatives, such as open Web services, lob, critical infrastructure protection and more.

Applications are welcomed for Intergraph's Open Interoperability Grant programme from any organisation that wants to research open Web services and make their data available in an open format.

We support GML in our products and believe it to be the next open exchange format.

The Intergraph OGC WMS Viewer is available at: www.wmsviewer.com and acts as a thin client, simplifying the communication process when a user is accessing OGC-compliant WMS servers. We are preparing to launch Geospatial.Net, a community open to everyone wanting to share data in an open standard.

Bart Hoogenraad, V.P. Global Marketing, Intergraph, The Netherlands. For more information: www.intergraph.com/gis0503

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Article

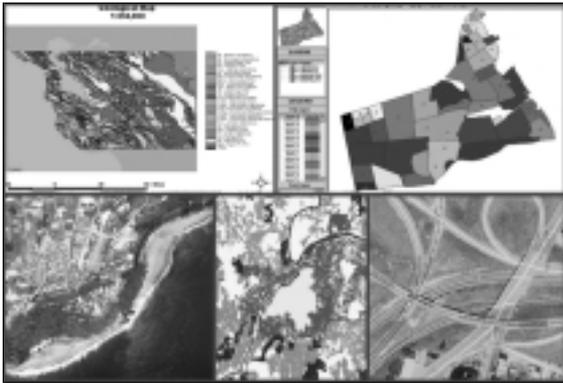## Aspects of Spatial Information Outsourcing
The Case of RMSI in India
By Jacques Sipkes, Contributing Editor, GIM International

On 25th February 2003 an interesting message appeared on the Internet GISList. The message stated, "US states may ban outsourcing". It went on: "Several US states are considering joining New Jersey in introducing laws that would ban the outsourcing of public-sector contracts to low-cost offshore processing centres such as India. New Jersey's legislation is close to being enacted, while Massachusetts is among the states reported to be considering similar action. The moves have sparked concern in India's fast-expanding offshore technology industry, which has hired Hill & Knowlton, a US public relations firm, to lobby against the move". To gain insight into the high-quality, fast expanding and cost-effective spatial outsourcing industry in India, GIM International visited a major player in this field – RMSI, located on the outskirts of India's capital city, New Delhi.

Commenting on the proposed legislation, Kiran Karnik, president of NASSCOM, India's main IT industry association described the concern caused by the 'signal' sent out by such legislative moves. The US accounts for about two-thirds of India's export of software services, forecast to grow 29 per cent this year. Wall Street companies have led the way in transferring business tasks to India, where the lower cost of graduate labour and higher productivity

RMSI – A one-stop GIS solution provider

have made the country a leading offshore technology service provider. The digital spatial information offshore industry in India is no exception. The outsourcing requirements and spending of the private sector are much greater than those of the public sector. As a result, large blue-chip companies across the world are transferring their spatial data and information needs to Indian outsourcing companies like RMSI.

RMSI Evolution

RMSI has become global IT services company, providing Geographic Information Systems (GIS), spatial solutions and application software services to customers worldwide. The company has domain knowledge in the spatial, engineering, insurance, media and telecom industries and offers a wide range of solutions. It has a customer list that boasts Fortune 100 companies. It has over seven hundred software and data specialists spread across its Noida (a suburb of New Delhi) headquarters and a development centre in Hyderabad (India). The RMSI Hyderabad operations are ISO 9001: 2000-certified and the software division is SEI CMM Level 3-assessed.

World-class facilities

Modest Beginning

The beginning was modest. Conceived in Silicon Valley in 1991 by three Indian Stanford University graduate students, Ajay Lavakare, Hemant Shah and Premal Mehta, RMSI was founded a year later in a basement in India's capital, New Delhi, as a joint venture with California-based Risk Management Software, Inc. (RMS). The plan was to create GIS and software solutions for risk analysis and risk management for insurance companies in the US. The set-up in India used a vast resource of highly qualified professionals offering significant cost advantage in the delivery of high-quality services to customers in the US. The revenues grew and the company expanded its operations. The first major order came in 1994 from GE Capital; it was worth over US$ 3 million. In 1999 RMSI moved into its own state-of-the-art office premises at Noida. In the same year it entered into a partnership with Landmark Information Group, UK, to provide GIS products and services to the UK market. Impressed by the RMSI track record, DMG Information, the business information division of the Daily Mail and General Trust plc in the United Kingdom, in 2002 acquired RMSI from its portfolio company, Risk Management Solutions, Inc.

RMSI Strategy

It was realised from the beginning that large-scale digitising, data capture and other bulk services would never bring in the flow of funds required for faster and robust growth of the company. To move up the value chain, RMSI focused on improving its core business, GIS services, and exploring more niche business areas, such as software development for catastrophe risk management. In the execution of GIS software services the need arose for application programmers to develop customised modules as an addition to the existing GIS software. Some applications even had to be programmed from scratch to tailor them to customer requirements. These opportunities brought to light the lack of resources in other disciplines of GIS and image interpretation. Scientists and domain specialists such as hydrologists, geologists and geophysicists were hired to supplement the existing expertise. The RMSI core business of building spatial databases and other related GIS activities for risk management created over a period of time a professionally high-level environment conducive to the evolution of other innovations.

Steady Rise in Capacity

Innovations improved capacity at a steady pace. The figures speak for themselves: a monthly ability to process one hundred satellite images, capture 100,000 linear miles of street data, 5,000 sq. km. of 25cm digital imagery and 40,000 man hours of digitising; 10,000 man hours of software programming per month, 40,000 hours per month for database upgrade and the geo-coding of one million points. As the market potential of Indian domestic spatial information needs trail RMSI capabilities, it is only logical that expansion in the

near future lies in fulfilling the outsourcing needs of large companies and organisations in North America, Europe and Japan. Though RMSI has major competitors in India and the West, more than 70 per cent of its work is repeat business from long-term partners. The advancement of communication technology offering open channels via satellite and glass fibre optical cable links with customers world-wide offers new and exciting opportunities and makes the physical location of a customer an issue no longer of significance in relation to the delivery of software services. A case in point is the RMSI alliance with Landmark/Infoterra, UK.

Landmark/Infoterra, UK

Though some US states apparently feel threatened by the Indian outsourcing capabilities, the opposite is the case with European public organisations such as the National Assembly for Wales. The National Assembly for Wales assumed administration of agricultural subsidy payments under the EU's (European Union) Integrated Administration and Control System (IACS). A consortium of Infoterra, the remote sensing and aerial photography specialists (www. infoterra-global.com), Landmark Information Group Ltd, the leading environmental information company (www.landmarkinfo.co.uk) and RMSI were successful in bidding to automate the production, updating and integration of land holding maps needed for the subsidy payments. RMSI's expertise in data capture and workflow management resulted in a system that allows information from various sources to be assembled in such a way that land holdings can be identified on current maps, checked in the field, and updated as necessary in a seamless process. International co-operation along these lines is likely to be the norm in future for executing such complex projects where physical location is of less importance (because of major development in communication) than the skills that each partner can contribute.

Work Management System

RMSI has developed a real-time Work Management System (WMS) for the centralised distribution, tracking and monitoring of projects and tasks in progress (see Figure 1). WMS can also be implemented at customer sites. For systematic work planning and scheduling, WMS automatically captures and integrates data and tasks, eliminating process flow bottlenecks and manual delays. It maintains accurate metadata for events (and the people associated with them) as they occur and logically estimates work completion schedules on statistical inputs derived from earlier metadata.

Variety Applications

Scrutinising the international blue-chip clientele, it becomes clear that RMSI has diversified and moved up the ladder from the original core business of risk assessment. The list of satisfied customers include companies like Anglo-American, BHP, Ericsson, Nokia Telecommunications, Siemens, Samsung and Lucent Technologies. This
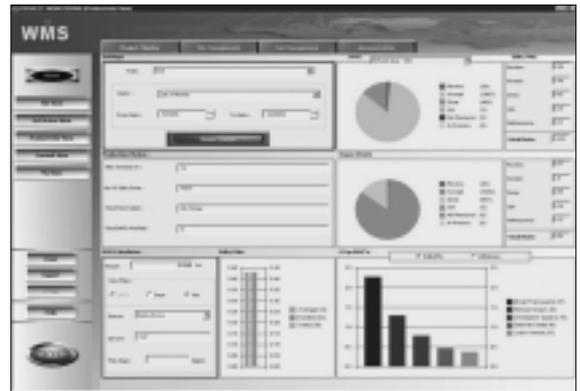

Figure 1, Workflow optimisation tool from RMSI

diversification, both in the geographical sense and in disciplines, is also reflected in the case-studies to be found on the RMSI promotional CD. Examples include Urban GIS in Bhutan, the historical fortress of Antwerp in Belgium, a petrol filling station database in Europe, forest mapping in Andhra Pradesh (India), feature extraction in Britain via satellite image classification for environmental applications in the USA, an a clutter classification project for Alcatel Thailand Ltd.

Concluding Remarks

It would be a mistake to underestimate current developments in the Indian spatial information industry. Companies like RMSI are highly innovative and will increasingly enhance their global market share through high-quality work and their international networks. Legislation in other countries aimed at stopping this development will not change the course of events since it is not the public sector that is calling the shots. India is placed in an excellent position at the moment, with an increasingly internationally-orientated workforce having a good command of English and new technical ideas. The coming decade may, however, find India in increasingly strong competition with the Chinese spatial industry in terms of protecting its global position, since China is now also a member of the World Trade Organisation (WTO).

Further Reading

- GEO: connexion, info@geoconnexion.com, Robert Barr, Director of the Regional Research Laboratory University of Manchester, Past council chairman of Britain's Association for Geographic Information, E-mail r.barr@man.ac.uk
- A CD ROM with general and case study information provided by RMSI
- www.rmsi.com

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