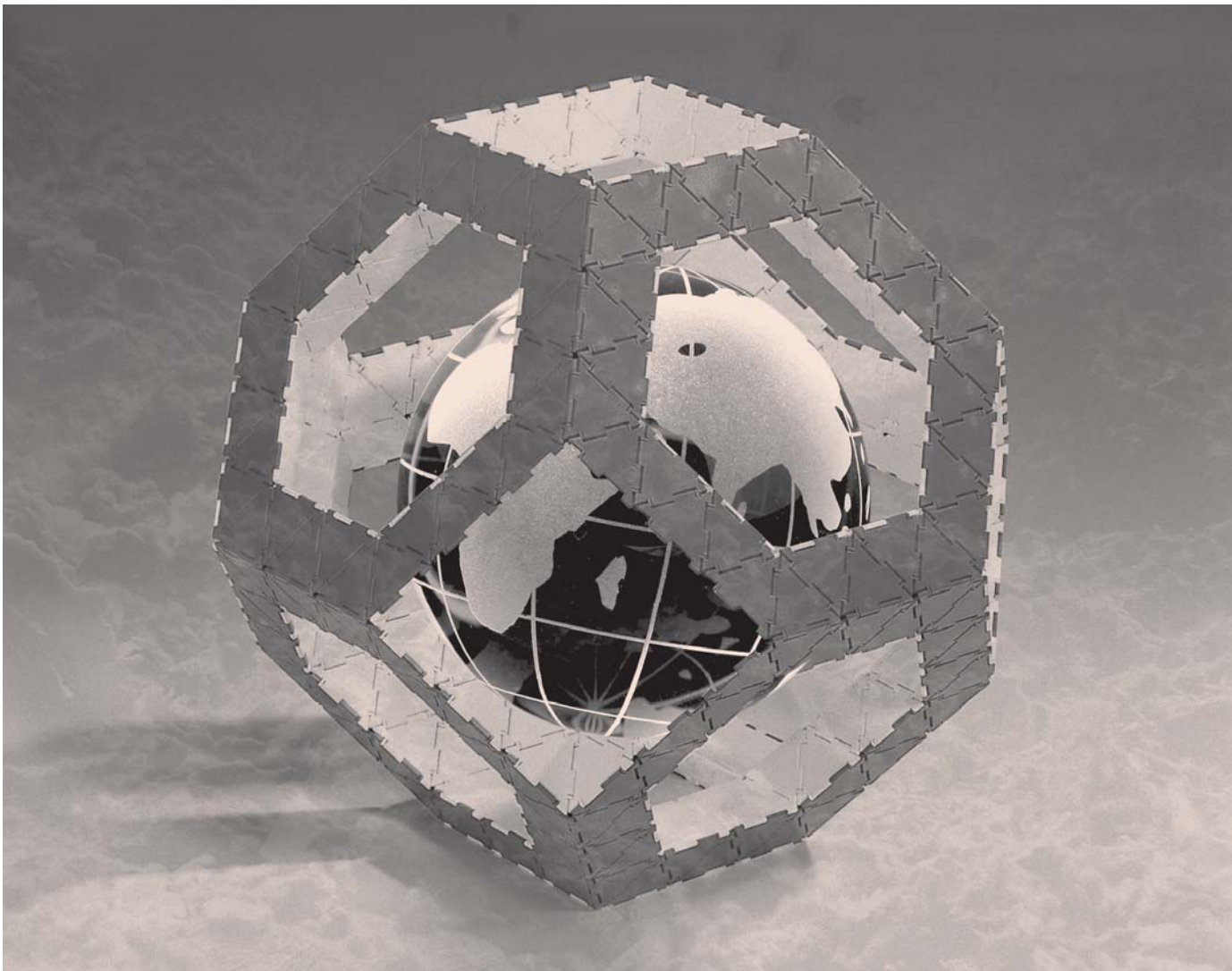


(RE)DEFINING GEOSPATI

TOUTED AS THE MOST SIGNIFICANT ACQUISITION EVER IN GEOSPATIAL DOMAIN, THE HEXAGON-INTERGRAPH DEAL IS RAISING AN INTERESTING DEBATE OVER THE FUTURE OF THE INDUSTRY. **SANJAY KUMAR**, CEO, GIS DEVELOPMENT GIVES AN EXHAUSTIVE ANALYSIS...



AL ECOSYSTEM

As geospatial industry entered a phase of consolidation and expansion, there have been several acquisitions and mergers over the past five years. Apart from a few 'core GIS companies', rest of the industry has been busy finding ways and means to expand their product portfolio and integrate their offerings to the geospatial user base. Several innovative approaches by companies towards business development have led to increasing the utility and relevance of geospatial industry.

A substantial credit goes to the entry of new business entities, which cut through legacies and opened up newer market opportunities. One event which had a significant impact on geospatial industry is the entry of Hexagon in 2005. Hexagon, which was in the business of meteorology instrumentations, had adequate knowledge and understanding of scientific instrumentation business and leveraging the same, decided to enter geospatial industry. And it did so with a bang, acquiring Leica Geosystems, a 180-year-old company which's into the business of surveying and mapping solutions. Having done its homework for growth within the geospatial industry, Hexagon began acquiring more geospatial companies offering quite complementary and supportive technologies to existing market base of Leica Geosystems and supported software components to Leica Geosystems' offerings in photogrammetry, scanning, surveying, machine control and imaging business. In parallel, Hexagon also continued its stride to acquire/invest in many of its existing partner companies with an objective to build a strong local presence and capacity especially in emerging markets like China, India and South America.

Within five years of its existence in geospatial industry, Hexagon acquired a complete range of geospatial technologies marching its way to fulfill its vision of (re)defining geospatial industry and its mission of being the largest geospatial company in the world. And today, that dream seems to have fructified with the successful acquisition of Intergraph. This move makes Hexagon not only the largest but the most comprehensive geospatial solutions company in the world. This is undoubtedly the

Mother of all deals

Deal Stats

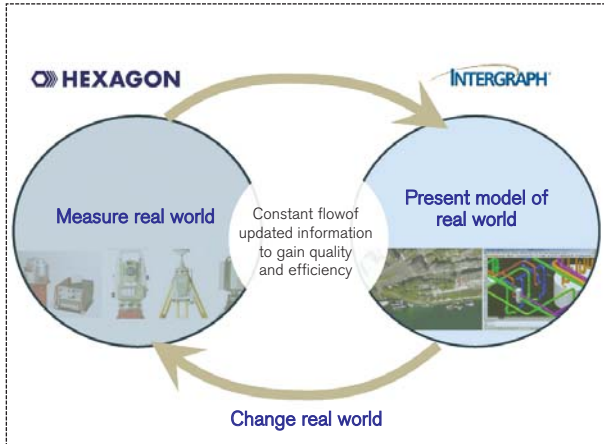
- Hexagon acquires Intergraph, a provider of enterprise engineering and geospatial software
- Cash purchase price of USD 2125 million on a cash and debt free basis
- The acquisition is fully financed via bank facilities. Hexagon intends to pursue a rights issue corresponding to USD 850 million as soon as practically possible following completion of the acquisition



With the acquisition of Intergraph, we are able to seamlessly connect the real world with maps or drawings. By adding Intergraph's technologies to our product offering, Hexagon will be able to create new exciting solutions that will change the way our customers operate in several industries across the world. We are indeed excited about the future for our Group

- **Ola Rollén**, President and CEO, Hexagon AB





The deal brings complementing technologies of Hexagon and Intergraph together

most significant event for geospatial industry and can be considered to be one of the major, if not the largest acquisition within the geospatial ecosystem. Earlier major acquisitions of Tele Atlas and Navteq were by players from outside the geospatial industry. Though some may claim the same about Hexagon, it is very much a geospatial player since its acquisition of Leica Geosystems. Though the direction this event provides to the geospatial industry remains to be seen, let us discuss a few intelligent conclusions one can draw.

PROVIDE NEW DIMENSIONS TO WORLD GEOSPATIAL INDUSTRY

Hexagon's acquisition of Intergraph is certainly a significant event in the geospatial market and gives it a clear edge as having perhaps the largest assembly of products and solutions of any company in this space. It will be a force to be reckoned with for sure. Intergraph was probably 'the real acquisition' on the software solution side that made sense for a company like Hexagon. We can expect a changing supply chain of related software and hardware to follow.

An industry stakeholder opined that Hexagon's acquisition of Intergraph is a clear signal of the ever-increasing strength of the geospatial industry and that Intergraph's investors got an excellent return on their investment. Since all boats rise with the tide, the entire industry benefits from such transactions. The acquisition also reflects the importance, in today's geospatial marketplace, of combining content and distribution to give customers a one stop shop of geospatial solutions.

Another interesting note came in as, "With large players like Microsoft and Google now in the market, this move allows Hexagon to shore up a substantial portion of commercial geospatial technology into one conglomerate. Hexagon prides itself in being among the top players in any market they choose to play a role in.....so competitors beware!" Appreciating the acquisition, a geospatial enthusiast said, "I generally favour this acquisition. The geospatial industry (in almost all sectors including hardware and software supply, service providers) remains sub-scale and fragmented. There are very few truly global players, with Leica Geosystems, Trimble, ESRI being exceptions (I don't really count Google as being in geospatial but perhaps they are). On the service provision side, there is no really large global player (Fugro is large and global payer, but more involved in geophysics than geospatial)." He further added, "We love hearing stories of small companies and innovation in our industry, but the reality is we lack companies that truly have the scale to fully capitalise on the benefits of geospatial. Governments are often immature and idealistic in their thinking on geospatial and in many cases are hindering the development of the industry and the roll-out of pragmatic (as opposed to idealistic) solutions for their stakeholders. If we had 'larger' scale service providers, we would have a better voice and argument to work with government on public - private partnerships, influence government strategies etc."

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POSSIBILITY OF NEW ALIGNMENTS AND PARTNERSHIPS WITHIN GEOSPATIAL INDUSTRY, ESPECIALLY FOR HARDWARE AND SOFTWARE COMPANIES

It is widely believed that this event will, for sure, have tremendous impact on the existing alignment and partnership network of the industry. There would be hardly anyone who would not be affected in the geospatial technology business.

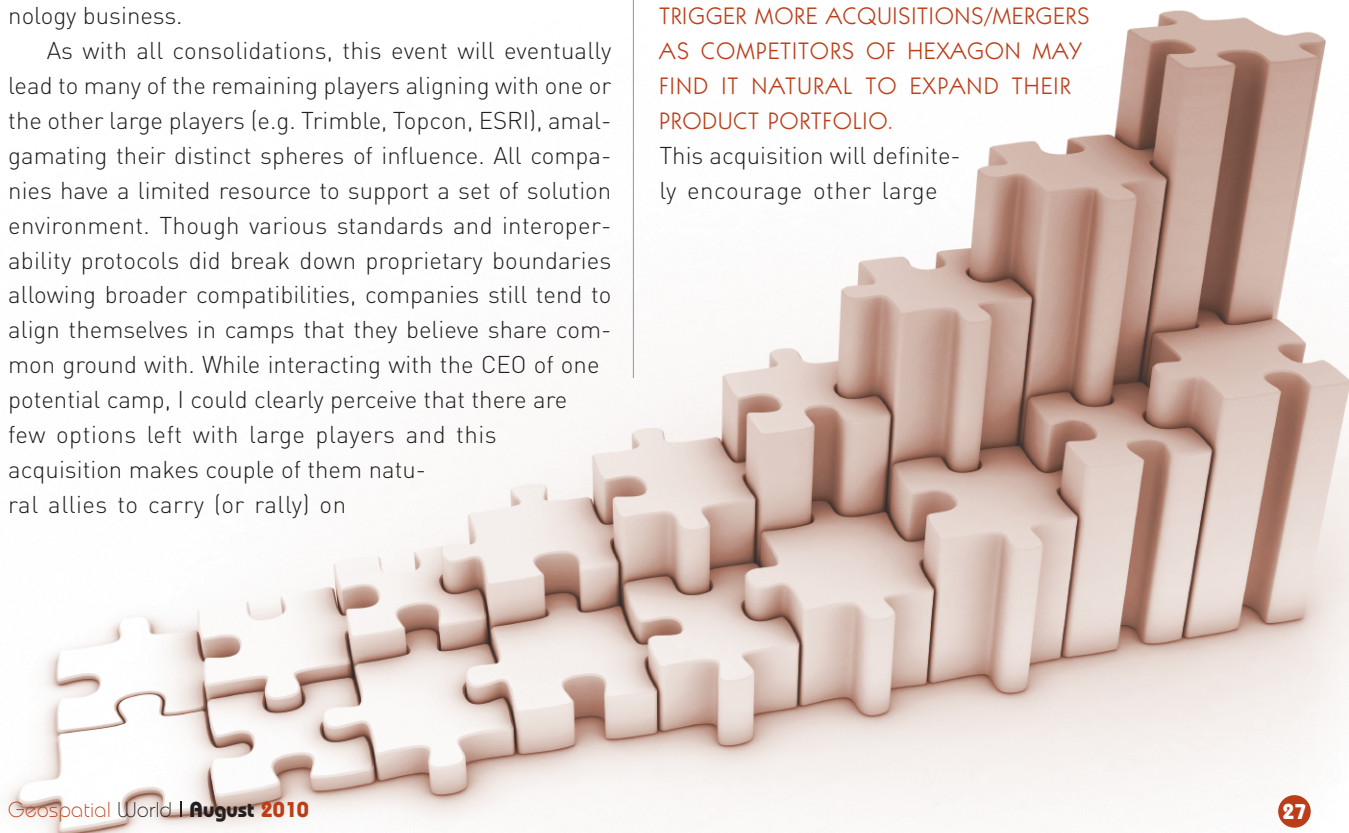
As with all consolidations, this event will eventually lead to many of the remaining players aligning with one or the other large players (e.g. Trimble, Topcon, ESRI), amalgamating their distinct spheres of influence. All companies have a limited resource to support a set of solution environment. Though various standards and interoperability protocols did break down proprietary boundaries allowing broader compatibilities, companies still tend to align themselves in camps that they believe share common ground with. While interacting with the CEO of one potential camp, I could clearly perceive that there are few options left with large players and this acquisition makes couple of them natural allies to carry (or rally) on


business in the market. For instance, it makes a clear case for Trimble or Topcon to get closer to ESRI or Bentley. Many of those companies who were working with Intergraph were traditionally competing with Hexagon portfolio of companies and vice versa, and it is certain that togetherness of Intergraph and Hexagon will make them choose either of the camps. The partner network of these two companies may have to wield caution in taking their next steps.

Such changing tides do not affect large enterprises like Microsoft, Oracle and IBM, as their roles and expertise remain untouched. These companies have been mature enough to initiate and continue working with multiple geospatial partners. While interacting with few of them at the recently held ESRI user meet, I could sense the beauty and benefit of such maturity wherein senior representatives of two such large enterprises were in discussion with me for creating a panel on enterprise GIS in one of our forthcoming conferences and jointly educate the end users about the benefits of enterprise GIS. Such an approach will certainly be beneficial for geospatial industry and I hope emergence of large geospatial companies will create opportunities for joint business development strategies while maintaining their competing positions independently.

TRIGGER MORE ACQUISITIONS/MERGERS AS COMPETITORS OF HEXAGON MAY FIND IT NATURAL TO EXPAND THEIR PRODUCT PORTFOLIO.

This acquisition will definitely encourage other large





With the entry of large enterprises, geospatial industry is moving towards being solution centric rather than product centric and next big acquisition could be a sizeable geospatial solution company

geospatial companies to expand their product portfolio. Now the question is whether a geospatial software company would acquire hardware and scanning capabilities or vice versa. My reading is that it's more likely that a geospatial hardware company may acquire a software company as significant consolidation has already taken place in geospatial hardware and data acquisition technologies whereas pure GIS software companies have kept themselves active in creating and developing more of a niche market for themselves. A senior executive of a company who may be potentially a key decision maker for such a move in the past did sound cautious while accepting the possibility of major acquisitions in the near future.



He did mention that it will be worth watching the progress of Hexagon's implementation plan of integrating its existing product portfolio as Intergraph has few competing products to the existing portfolio of Hexagon in the field of cameras, sensors and photogrammetry.

Providing a different perspective, another executive suggested that "integration should be quite smooth as Leica Geosystems and Intergraph have some good solutions and generally complement each other. Combining their resources would certainly appear to make sense and may help both parties create some solutions."

Adding a new dimension, another stakeholder suggested that the process of acquisitions will also expand to potentially large geospatial solution/service companies, primarily due to the fact that with the entry of large enterprises, geospatial industry is moving towards being solution centric rather than product centric and next big acquisition could be a sizeable geospatial solution company. Possibility of such an acquisition is quite high for those originating and operating in large emerging markets like India, China, Brazil and Russia.

As localisation, while delivering geospatial services, is key to success, it would be strategic to have such large local presence and delivery capacity and capability. Furthermore, these companies may provide requisite support and capacity to offer solutions to large clients worldwide as well.

However, the quest for solution companies to acquire software and hardware products and skills are well known too. Pursuing this path, the Rolta Group acquired a few software development companies like Orion in the recent past and entered into joint venture with Thales. So we foresee a shift in acquisition pattern and may soon find some solution company acquiring software and hardware technology company. And since there is much likelihood of realignment and newer alliances, it may in the process witness few smaller acquisitions to facilitate smooth integration and implementation of Hexagon's consolidation strategy.

Another viewpoint suggested that "in order to enter this market and gain a good market share, the existing suppliers or companies will need to enhance themselves more and do some adjustments, such as improving the product provisions or adjusting the pricing structure, for entering or surviving in the new competitive environment," and this will motivate further alliances and acquisitions.

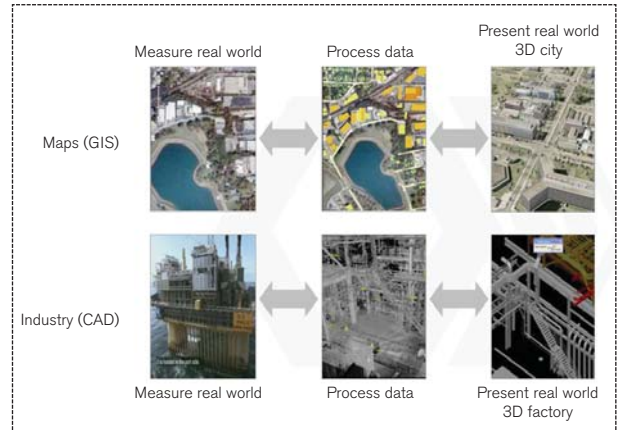


TECHNOLOGICALLY, IT MAY FOSTER MORE INTEGRATION BETWEEN AND AMONGST SURVEYING, SCANNING, IMAGING, PHOTOGRAMMETRY AND GIS.

Geospatial industry is fragmented enabling smaller players to keep their strong presence in niche markets. But the same has eventually led to a situation demarcating segments by technologies and creating strong unconnected compartments within the industry. Such a niche approach was necessary at some stage to nurture technological development, but after a certain stage, it becomes a bottleneck. This was recognised by many in the industry at quite an earlier stage and efforts are on to develop interoperable environment. This effort will gain momentum with this acquisition as 'the two are the most notable market participants to share a 'commitment to thwarting interoperability', according to the CEO of a large GIS software company.

It is a well known fact that the interoperability initiative is limited within and amongst GIS companies and the scope of integration needs to be expanded to more data acquisition and management technologies. Entry of large enterprises has facilitated better interoperability and communication protocols within these segments. Adding Intergraph to its portfolio, Hexagon shall be the first group company to have strong presence in almost all geospatial technology segments. It has systematically acquired a number of capabilities that move them from a limited test and measurements company to a much broader and more capable information acquisition and management and solutions company. Providing a different but relevant viewpoint, a former senior executive of Hexagon says, "Hexagon has always claimed to be a significant force in software, but in reality, with the exception of a handful of smaller dedicated software entities like ERDAS, its software was more a necessity of its sensors. This acquisition changes all of that and gives them a legitimate software/solution presence in the geospatial market. With proper investment, this will become a major force on its own merit and clearly provides opportunities throughout Hexagon for more comprehensive data capture/data use application solutions integrating sensor workflows with real world applications."

Strengthening the above argument, a professor of geoinformatics says, "The increasing integration of hardware with software is another interesting facet, with sensors of all kinds feeding and fitting quite naturally into processing sequences." He further adds a word of caution by putting



The new-found synergy ensures constant flow of real world data to 3D models and back

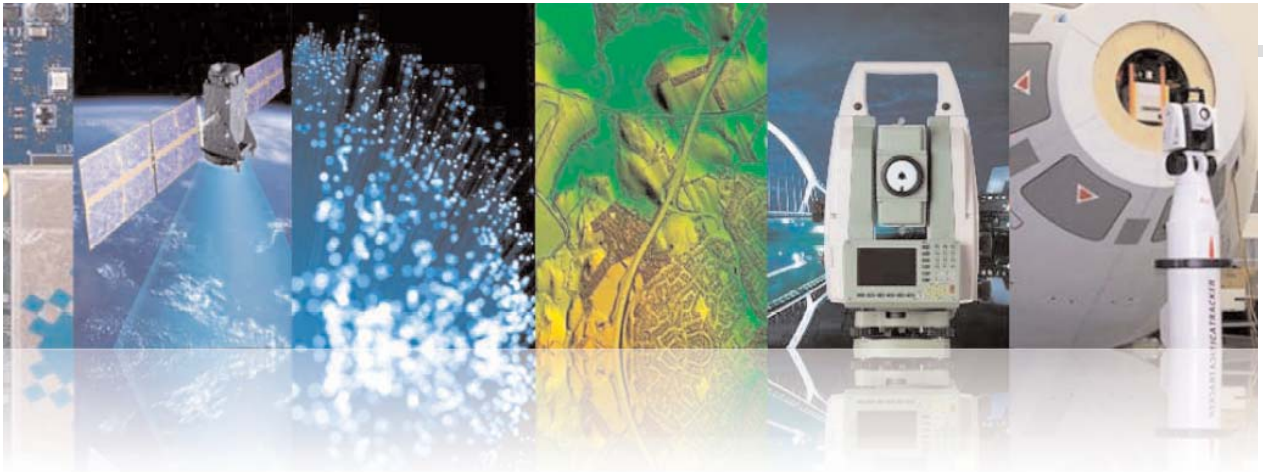
his argument, "So, are all these developments in everyone's best interest? The diversity of offerings is being reduced to precarious levels. Bigger is not always better. Not all acquisitions are driven by market sense and portfolio building. The actual integration of products after acquisitions sometimes shows little progress even after years. Let's see how things will develop in this case!"

MORE COMPREHENSIVE AND INTEGRATED GEOSPATIAL SOLUTIONS TO END USERS, WHILE IT MAY ALSO RESTRICT THEIR OPTIONS OF DEALING WITH MULTIPLE VENDORS

What does this deal have for end users? While going through the history of various initiatives of interoperability and standards, it is clear that end users have been the driving factor always. I do recall my discussions with David Schell about the difficulty in bringing four companies together to a table, leave alone sharing their product architecture. But then, it was the users who recognised the importance of interoperability and almost forced many GIS companies to develop interoperable environments.

I could sense the repeat of same story as large enterprise users have been motivating geospatial and IT companies to get together and integrate their offerings from data acquisition to data management to IT integration and finally delivering valuable solutions.

A large enterprise user commented that "this acquisition creates a unique opportunity for geospatial users, particularly those in the utility industries. Traditionally, the marriage of GIS systems, business processes and



raster-based analysis was cumbersome at best. Standard analysis activities often had to pass through several layers of assessment performed in a variety of applications. Google-like referencing of layers - building a view - has become commonplace as decision makers search for tools that bring some of these analysis layers together as one. While this is effective, it introduces potential risks - poor accuracy, misaligned positional reference and lack of attribution to name a few." He further adds, "With Leica Geosystems and Intergraph now playing for the same team, a proven, established, scalable and robust GIS platform will be made available to Leica Geosystems, a forward-thinking technological juggernaut. The result could be the GIS industry's first true 'full-service' GIS platform, affording detailed analysis capability, real-time image accessibility, 3D modelling, and the heavy-lifting compo-

nent to manage volumes of detailed, relational data in a networked environment to users both in the office and in the field."

Providing a user perspective, a leading spatial consultant says, "The logical growth path for Hexagon (and its competitors) is to move from specialised functions like metrology and CAD to broader functions like operations, asset management and logistics. Intergraph brings extensive experience and capabilities for managing large spatial data sets within enterprise processes. Both of Intergraph's divisions, [Power, Process and Marine (PP&M) and Security, Government and Infrastructure (SG&I)] provide software and services for managing large data flows that include spatial elements. Intergraph interfaces with large ERP and asset management systems from vendors like Oracle, IBM and SAP. Hexagon's R&D teams are already working towards sensor fusion capabilities for a number of different applications. I expect that Intergraph developers will quickly integrate Hexagon's extensive metrology capabilities within Intergraph's technologies and then into enterprise IT infrastructure."

He further commented that "Intergraph already has impressive 3D visualisation capabilities. Coupled with Hexagon's metrology, 3D visualisation could become a rich environment for process management as well as design. Intergraph brings deep expertise in a wide range of vertical segments like public safety, public works and intelligence. With Hexagon's sensor platforms, Intergraph may be able to bring together real-time information with infrastructure data to create better situational awareness across different processes and functional areas. For example, Intergraph may integrate public works data with public safety information to enhance information for emergency response."

After four years as a private company, Intergraph is going public again. What does it really mean for GIS practitioners and the users of Intergraph? And what of other players in the industry; will it make any real difference to life in Redlands, California (home to ESRI) and their worldwide user base? These are all interesting questions...



Championing the cause of end users, a professor opines, "Businesses are increasingly 'walking the talk' of being more solution oriented. Instead of isolated technologies, longer, more complete sections of workflows are offered by individual vendors." He further adds, "The landscape of geospatial technologies has certainly changed a lot over just a short period. And chances are that it will keep changing, with landslides and earthquakes shaking up what we took for an already consolidated environment of technologies. Just like open source and open content have increasing impact, some sensors do not necessarily depend on 'big technology', but can be replaced with mass technology or crowd technology. The latter will rather expand the reach of geospatial technologies, though - core themes like maintaining aging infrastructures and developing new infrastructures will certainly benefit from stronger consolidated vendors matching the task."


CONCLUSION

Picking up threads from where we began, i.e., if the Hexagon-Intergraph deal will define/redefine the geospatial ecosystem, I think the answer is 'yes' to a large extent. This is because Hexagon has been investing in not only acquiring the entire range of geospatial technology, which was earlier offered by many companies individually with their own little compartments, but it is investing in deploying the same with customised approach to serve local needs, to begin with, in major emerging markets. Today, within five years of its operations and association with geospatial industry, Hexagon has the largest portfolio of geospatial hardware and software products, and also to add to its technological

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capabilities, it has largest capacity to deliver to the local needs of emerging markets.

Interestingly, Hexagon is also probably the only company which has its largest revenue base from a developing nation like China which contributes 17% to its annual turnover and Europe is a leading regional market with more than 40% of its annual revenue.

Though it seems that Hexagon is redefining the industry ecosystem at this moment, it largely depends on how the company copes up with integration of various technologies and the increasing pressure of shareholders (hungry for ROI). Going by the history of Hexagon, it appears that the company is quite competent to handle such a challenging environment, especially because they do not have a long legacy in geospatial industry. 

Note: The author takes total responsibility for the views expressed in this article. Neither GIS Development nor any other person is directly or indirectly responsible for the same. The author consulted and interacted with a select group of industry leaders and would like to thank them for the same. However, as most of contributors shared their views off the record, their names have been held back.

