

GIM INTERNATIONAL INTERVIEWS EWOUT KORPERSHOEK, DIRECTOR MARKETING & SALES, TOPCON EUROPE

Positioning Becoming a Commodity

"Welcome to the future!" This was how Topcon greeted Intergeo visitors to their stand. It was impossible to overlook. So what is so special about that future? And how is Topcon preparing for it? An alumnus from Delft University of Technology, Ewout Korpershoek in July this year became Director Marketing & Sales, Topcon Europe Positioning BV. Freshly in post, he gives an inspiring view on a surveying world in continual flux and a survey market broadening by the day.

Welcome to the future! With this catch phrase you invite Intergeo participants to Topcon City, the capital of Intergeo. What is so special about this future, that you want to offer us a prior glimpse at it?

In the past the dominant manufacturer perspective was to make a surveying instrument and find as many markets as possible. Today we share the vision that our future lies in providing a position, not a total station, GPS receiver, laser instrument or whatever other surveying instrument you may think of. Indeed, positioning has become a commodity. This reversal in approach to surveying forces us to look at positioning in a completely open and fresh way; we provide solutions to the market, a market which is broadening by the day, and construction as become a very important part of that. To be successful we therefore have to look at the application and provide the right technological and packaged solution for it. For the survey market, the focus is on innovation through applying and integrating new technologies that offer huge benefits for data capturing and measuring applications. Our MMGPS, for example, offers increased accuracy to GPS users by combining it with a specially designed 'zone-laser'. Another example is our imaging technology, which is incorporated in our total stations, offering the user a way to capture reality in all its dimensions, forms and textures. In the emerging markets a construction contractor, for example, does not actually want a total station; he wants positions. No contractor will be happy with a total station that is too complicated to operate. Offering a system that provides the required information in an easier and more durable way of operating ten hours or more daily is the right solution for that application. This is the future we are presenting here at Intergeo.

The consequence of the paradigm change you sketch is that you need to incorporate a variety of techniques into your solutions. How do you acquire the knowledge of these technologies, by take-overs, partnerships or in-house developments?

A combination of all those. Topcon has significant R&D resources in many disciplines and the ones we do not have we must acquire and integrate. Optics is our core technology, the one in which we have been specialised since the start of the company in 1932. In the early eighties it became clear that the construction market, by then about 50% of our business, did not always want x, y, z positions, but in many applications simply an elevation reference. For that type of information laser technology presented itself as a very viable and interesting option. So we got faced with a decision as to how to incorporate laser-technology into our company: should we buy a laser company, go into a joint venture, or develop the technology ourselves. We decided to develop laser technology ourselves. Construction is about bringing changes to the environment. It is also a production process like any other, and our technology brings automation to this process. Controlling and guiding machines automatically requires that positioning equipment be closely integrated with hydraulics and so on. In order to cope with this development we in 1994 purchased AGTEK, an US-based company specialised in automation of construction machines such as bulldozers, excavators and motor-graders. We purchased this company to offer a full product solution to the construction industry, not only total stations and not just lasers; but the whole spectrum of products needed to provide a positioning solution.

How did Topcon acquire knowledge on rapidly developing GPS technology and on imaging technology?

When I was studying at the Delft University of Technology in the late eighties, size, price and operation of GPS receivers were such that it did not enter the mind of the [land surveyor](#) to take one into the field. However, as we all know, soon the receivers became more compact and affordable, making GPS technology very viable, not only for surveyors but also for construction contractors. GPS was increasingly used for applications that had traditionally been also covered by our total stations and machine-control systems. Then the question arose how to acquire knowledge of GPS technology. We did that by in 2000 purchasing a GPS company. We also have extensive co-operation with scientific research institutes. Our imaging software, for example, comes from joint development with Tokyo Geodetic University. This software is used for processing images captured with the hand-held GMS-2; a GPS receiver with integrated electronic compass and digital camera. The imaging facility offers functionality to make offset measurements of the object by taking stereo images.

What type of background do your Research and Development (R&D) engineers have?

Our Research and Development (R&D) facilities in Japan, the US, and Russia are rather large. Over the last five years the number of engineers has tripled, both in the US and in Russia. We now have more than 170 engineers with us in Moscow. Their background covers a wide range of engineering disciplines; as GPS our products incorporate many technological disciplines, from board, chip, software to radio design and much more.

You have made it very enticing for visitors here at Intergeo to visit your city-like stand; I have even spotted names such as Galileo Street, Glonass Allee and GPS Street. Why this huge exposure?

At this trade-fair we are presenting new and hitherto unseen technologies to the market. Our overall position on the European market is a distant number three, which is not in line with our overall global position. Comparing our product portfolio with that of our competitors, we are in many cases one or more steps ahead. Of course, it is great when you are able to offer world's-first developments, but it is also very important to bring that message to the market. Therefore we have taken the step to choose a presentation that suits our products, a presentation which focuses the attention on our world's-first products...

...World's first?

Take GPS technology: all our competitors offer only GPS, the use of only dual-frequency GPS signals from the US satellites. Today there are many other satellites in the sky. We are the only one offering the use of all currently available signals. At Intergeo we have taken it a step further by bringing compatibility to the planned satellite signals of Galileo. That is a very powerful message. When a receiver is available which is able to receive all present and future signals, why should one choose one limited to receiving just a few...?

...Perhaps price?

There is no price issue. It is all about the benefits; what is the added value of being able to work more hours a day, faster and with higher accuracy? That is the main issue.

You call your system appropriately enough G3: capable of tracking all signals from all three, present and planned, satellite positioning systems - GPS, Glonass and Galileo. When will the new system be available to users, which users do you have in mind and what are the advantages of the system compared to the present technology?

The G3 technology is available on board now. We are currently finalising the packaging of the entire product, so we expect to release G3 in early 2006. The targeted users are all current GPS users. Today all users have to live with the limitations of GPS. Sufficient satellites and sky visibility are required and that hinders many applications in the daily life of the surveyor, contractor, farmer and other users. The result is idling, lack of productivity and loss of money. Because our receivers offer the ability to receive all satellite signals available today and planned for the future, it will be possible to make measurements in places that are impossible today; less time will be lost and higher accuracy achieved than with any other GPS-only system.

Will potential G3 customers not say: GPS is fine, Glonass is fine, but the coming into operation of the third of the three Gs, Galileo, will take another five to seven years; why should I invest already in this technology?

You are right. GPS technology is chip technology. Our new chip in which the G3 technology is incorporated is, compared to the chip we introduced five years ago, ten times more powerful and seven times smaller. Such a powerful chip will be capable of supporting our receiver development many years into the future. Typical user advancements in GPS equipment relate to size and weight (portability), power consumption and integration. That's why our first available G3 product will not be a field rover, but a network reference receiver. Setting up a network is a significant long-term investment where neither portability nor power consumption is an issue. Especially for network use, the functionality of the product incorporated is the decisive factor. Being able to purchase a receiver that offers the use of all currently existing and planned signals is the best guarantee a user could get, and that is what everybody is looking for when making an investment.

I would like to finish this interview where we started: the future. How will it look?

We live in a dynamic environment, the world continually changing, opportunities increasing on a daily basis; new worlds of possibilities come into sight. We are at a crucial point in time in our business. To provide the right solutions to the problems our customers face, so that they can do their work more efficiently, more productively and with higher quality, that is one of the messages we want to broadcast at Intergeo. Topcon wants to be a true innovator by combining different technologies into new solutions. Our future does not lie in making pieces of hardware, it lies in the integration of unique technologies which significantly improve the quality and productivity of the work performed by users in our markets.