

GIM INTERVIEWS HUUG HAASNOOT, FUGRO-INPARK AND MARC HOOGERWERF, WAGENINGEN UR

Offshoring Geomatics Work

Enabled mainly by rapid developments in telecommunications and internet, there is growing relocation of office labour from Western countries to emerging ones such as India, Pakistan and China. The attraction of these countries is their combination of a highly skilled workforce and low wages. Offshoring is becoming regular business practice not only in programming, IT and back-office services, but also in the field of geo-information. In this double interview the interviewees share their geomatics offshoring experience in Pakistan (Haasnoot) and India (Hoogerwerf).

In what type of activities are you mainly involved?

Haasnoot - Within Fugro's Aerial Acquisition division we perform helicopter-based laser-altimetry surveys using our own FLI-MAP systems. Simultaneously, digital aerial photographs are taken during the survey. We execute projects such as road and dyke surveys for government bodies, and electricity-wire surveys for private energy companies.

Hoogerwerf - In a consortium with Oranjewoud and Rolta, Alterra is running a crop-registration project for the Ministry of Agriculture in The Netherlands. All farmers here are supplied with custom-made 1:5,000 topographic maps printed on A3 paper, showing their parcels. When farmers have indicated their crops and annotated additional parcel boundaries these maps are processed within a GIS environment for purposes of subsidies and compulsory parcel registration.

What are the essentials of your workflow?

Haasnoot - Our datasets are very large. We acquire millions of points per km and cleaning this data is very labour-intensive. One of our products is a digital surface model, so all hits from shrubs, trees, poles, cars, etc. must be removed. Our own software is well capable of filtering out more than 99% of unwanted points, but the remaining 1% still requires time-consuming manual editing. Another, even more labour-intensive, process is the charting of this data. Because of our resolution, we might be charting more than a million objects in any large survey campaign. Finally, the aerial images have to be orthorectified. Because of our low flight altitudes of about 100m, correcting these images also requires a lot of work.

Hoogerwerf - We are processing about 200,000 maps annually. From these maps we have to digitise geometric aspects like temporal crop boundaries, and we also have to process administrative information about parcels as indicated manually by farmers. We do this with custom GIS software developed by ourselves specifically to facilitate these tasks.

How is your workflow organised?

Haasnoot - For processing and charting we send the data to a Fugro daughter-company in Pakistan. Once in land surveying, this company now acts as the processing centre for the FLI-MAP data. Thirty to thirty-five people work in the centre. We send 200-400GB hard-drives via couriers, which takes two to three days, or send the data via an FTP server to Pakistan.

Hoogerwerf - Before the Oranjewoud/Rolta/Alterra (ORA) consortium was involved in this project all paper maps were sent to Pakistan weekly for scanning and digitising. This caused quite some problems with Customs, because of the large piles of paper. Later the paper maps were scanned in The Netherlands and then sent on harddrive to Turkey for further processing. At that stage we were involved in the project in an advisory role. Currently, we are directly involved in the project. We have now set up a more modern infrastructure wherein everything is digitised in The Netherlands and inserted in a geodatabase hosted in The Netherlands. A team of about seventy employees in India is working directly on this database within a Citrix environment via a dedicated internet connection between India and The Netherlands. So nothing is sent by ordinary mail anymore. Quality issues are also registered in this database, which makes it the operational communication mechanism. All communication is encrypted and sent within a secured environment, and we have set up audit trails to ensure integrity and monitor this communication process.

Why did you choose to offshore parts of your workflow?

Haasnoot - First of all, it is a matter of capacity. The organisation needs to be very flexible because sometimes we need within days to triple the processing team for a specific job, which would be impossible in The Netherlands. Because the Pakistan branch also works for other countries their workload is better spread. There is also the issue of cost. In fact, offshore construction has meant a whole new market

with new products has emerged for this kind of survey.

Hoogerwerf â€œ The initiative was taken by Rolta, our partner in India. Rolta has a sales office in the Benelux. They established contact and proposed a consortium. Partnership with Rolta is a matter of cost-effectiveness for the ORA consortium. The people are working within a labour-intensive but very well defined process, aspects that enable this type of work division. Further, the greatest bottleneck in this process is the managing of peak work pressures just before submission deadlines. With our partner in India we are better able to handle these workload variations.

How much effort was needed to establish collaboration?

Haasnoot - Key personnel from Pakistan came to The Netherlands for about one month. They already have the right education and qualities but had to learn about the local situation. For instance, what is the toe-line of a dyke? The training proved vitally important. Today we send people to Pakistan for education, because there they can directly reach a wider audience. We now try to let them do the project management as well, which is something we used to leave to expats.

Hoogerwerf â€œ A number of personnel from India visited The Netherlands to learn to understand the geometry of crop parcels and regional variations, and we visit our partner in India regularly to line up the project, work together on software development and resolve issues.

What is the opinion of your client regarding offshoring parts of your workflow?

Haasnoot - Most of our clients have no problem with this because we are very open about it. Our clients realise that the work cannot be done for the same price in The Netherlands. We also explain our quality control system to our clients. Depending on the project, we spend around 7.5% to 12.5% of processing time on quality control in The Netherlands, so we are responsible for the quality. Some, but not all, government bodies do not want their data processed in Pakistan. This seems to me a choice based upon principle, not one induced by quality considerations. Processing offshore is no option for our Fugro FLI-MAP division in the US because of homeland security restrictions.

Hoogerwerf â€œ As part of the tender procedure we had to demonstrate to our clients that working conditions, working hours and office space in India are of good quality. This was not very difficult as the production facilities in Mumbai maintain high standards in equipment and working conditions.

Are there any interesting cross-cultural aspects?

Haasnoot - Sometimes it is difficult to find out if there are any problems, especially via email or telephone. But we do send our key personnel on cultural training courses to overcome these cultural problems. Because we are very internationally orientated this was nothing new for us.

Hoogerwerf â€œ Working together in close collaboration with the mutual commitment to learn from each other proved to be one of the key success factors in this project.