SUBSIDIARY KAMPSAX FLOURISHES

COWI Consultation

COWI is a northern European consultancy group headquartered in Lyngby, Denmark, near the capital Copenhagen. Its 3,500 employees are distributed over nearly all continents and provide a variety of services in the fields of engineering, environmental science and economics. In June 2002 COWI acquired mapping company Kampsax and five years on we wondered how Kampsax was faring within the new constellation. To find out we headed for Copenhagen.<P>

Since 1998 it has been possible to reach Copenhagen on the eastern side of the island of Zealand entirely by land, without having to take the ferry across the Great Belt (Storebælt). The Great Belt Link, together with the Oresund Bridge connecting Copenhagen and Sweden, provides a fixed route between western continental Europe and Scandinavia and COWI, in its capacity as consultant, has contributed considerably to the success of this direct link, not least as its designer, construction supervisor and inspector.

Kampsax
Poul Nørgård, head of the Mapping and Geodata Department receives me at company headquarters in Lyngby. He is concerned that I will be meeting only a few members of the personnel, as it is holiday time; in Europe companies work at best at half strength between June and September. Walking me through the various rooms of the mapping department, Poul explains that COWI is a conglomerate of companies operating internationally. One of these is the former Kampsax. This construction company, founded by Kampmann, Kierulff and Saxild in 1917, was traditionally focused on the design and construction of buildings and plants for large Danish companies. The firm carried out its first photogrammetric mapping projects in 1962 to service civil engineering projects.

Take-over
'Through a lot of international mapping projects, Kampsax has left its mark on the map of the world,' says Poul, introducing Carsten Vad, his senior project manager. 'The year 2002 was one of acquisitions for COWI, and Kampsax was the first,' says Carsten. He continues, 'The acquisition enabled us to strengthen expertise in the areas of geographical information and IT and to position the company better in international development planning.' Acquisitions have resulted in COWI employing a current 3,500 people operating in a variety of fields clustered within a conglomerate of companies with one common characteristic: all offer consultancy in the fields of engineering, environment and economics. Poul tells me, 'The company wishes to evolve from being a large parent company with many 'satellites' into a group of mutually committed nodes within a network of several regional and equally ranked consultancy offices.' 'The name Kampsax did not completely disappear after the acquisition," says Poul. 'In 1994 Kampsax India Ltd (KIL) was founded in New Delhi and the firm, now with four hundred employees, is our most important production facility.' In February 2006 COWI increased its shares in this company from 51% to 76%, and since 6th September 2007 KIL has been wholly owned.

Proud Engineering
'Did you come by ferry or cross the Great Belt by the Link,' Poul wants to know. In reply I tell him that in 1994 I had the opportunity to visit the construction complexes, including bore-work on the railway tunnels. 'Of course, I wanted to experience the result, and I have now witnessed the metamorphosis into a haulage ribbon weaving its way tightly and elegantly through the Danish land- and seascape. Especially the suspension bridge is impressive.' Poul explains, 'The two pylons shoring up the 64m-high road deck arise 254 metres above sea level.' He goes on, 'The link has a length of 18km and the 1,664m-long bridge is the world's second longest free span, surpassed only by the Akashi-Kaikyo Bridge in Japan, also completed in 1998 with a length of 1,991m.

Expansion
Kristian Keller, section manager Mapping, joins us and Poul continues, 'COWI bought Kampsax because they recognised the potential of geo-information as a growth market, while mapping fits their business. They are therefore willing to invest heavily. Over the next five years we should double in size through organic growth, but also by acquisition, and we are well on our way. At the time of the take-over we only had one aircraft and two analogue cameras. We attracted new people knowledgeable in cameras and aircraft, bought three Vexcel cameras and a Leica Lidar system and developed in-house two oblique camera systems. Since 2006 we havebought three specialised aircraft. The pride of the fleet is a KingAir turboprop that can carry enough fuel to fly from our flight basis in Roskilde to, for example, Serbia in one operation and can fly up to eleven kilometres high. Data can be captured at a speed of 550km/hour, nearly twice as fast as normal, easing much coverage of an entire country. We have also bought an aircraft that can fly extremely slowly to capture smaller areas in great detail. Particularly the creation of high-density Digital Elevation Models (DEM) from Lidar requires a low-speed, stable aircraft. Last year we created a highly detailed and accurate DEM for the whole of Denmark, that is 43,000km2as standard product. Every two years we capture the whole of Denmark, also by orthophoto, the rural areas at pixels of 40cm and major cities at 10cm pixel size. We also carry out major work for the UK Ordnance Survey; over recent years we have captured over 100,000km2. Capturing large areas is our speciality.'

Worldwide
'From the above you might conclude that we only work in Europe, but we are active worldwide,' Kristian Keller interrupts. 'The volume of the market has significantly increased in recent years and technological developments allow us to do more with less labour. We would not be able to keep six hundred but perhaps only twenty people busy with geo-information were we focused only on the Danish market. Collaboration in China is one alternative. China has three advantages: the salaries are significantly lower than in Europe, the people are

very well educated and highly qualified, and many national projects are fast expanding. The three centres for mapping in China, Beijing, Wuhan and Xi'an, are really buoying us up. In contrast, it is extremely difficult to find good people in Europe. We had to move part of the product management out of Denmark, exactly for that reason. Furthermore, the lack of Scandinavian candidates has led us increasingly to employ people from Eastern Europe in particular.'

Changing Market
In the meantime Poul has opened his laptop. 'With 40% of our consultancy work carried out outside Scandinavia and subsidiaries and project offices in all continents except Australia, COWI is indeed a globally operating company. Our growth strategy is that we want to provide the entire chain of services at local, regional market level while at global level we market selected international specialist services, and we intend to develop this model. The market is changing, not only geographically. The private sector is growing; some years ago we delivered only to the public sector and for these clients accuracy was central, the data complicated and update frequency low. As a result particularly of ICT developments, demand is expanding gradually to "quick and dirty", but with a higher update frequency. And of course we try also to satisfy this segment of the market.'

Local Presence
'I think there is some confusion about globalisation,' Poul remarks. 'Some think it means you operate from a central base and provide distance services all over the world. That is not the way it works. If you want to establish sustainable services suited for growth you need to be present locally. Your people should understand the local market, speak the language and understand the culture. So technological developments make it possible to expand your market geographically, but on the other hand you need to invest in a local presence. We are now in the process of expanding our activities to a number of other countries, where I cannot at the moment disclose. But we will have a local presence while our services are supported by our worldwide network.'

Foundation
'On the other hand we also carry out activities all over the globe simply on an occasional basis,' Kristian adds. 'For example, when we get the opportunity to carry out a project in South Africa, where we don't have local people or offices, we will do that. A project of, say, half a million Euro is a big project for us, but COWI as a whole would consider it a small one.' 'That is the basic philosophy of COWI,' Carsten adds, 'in some markets we provide the full range of services, in others one of our specialities. Our status as a foundation means we are not on the stock market. With a Group turnover of almost Euro 400 million in 2006, nearly 5% increase on 2005, COWI is fortunate to be in the position of being able to finance its ambitions to grow from Scandinavian to international company using its own money. That is very different from other companies. In addition, the feeling that nobody can violently take over the company is very comfortable.'

India
As the creation of vector maps from aerial photographs is for a large part carried out in India, good management is crucial. Many assignments include mapping parts of Europe or the Americas and have to obey high standards. The internet enables minute by minute quality management and instantaneous feedback from the client, so that the need to rerun a production cycle from the beginning belongs to the past. However, most important is that people from another culture understand how houses, roads and lampposts look in aerial photos of, for example, the UK. 'To give the customer what has been commissioned we need to develop guidelines for each project and provide intensive training,' says Kristian. 'Just to give a small example, if lampposts are included in the specifications we have to teach our operators that these things are positioned at regular distances, and they can verify their own work by checking on gaps. In the meantime, our people in India are so well trained that some can map the UK better than can native operators. Of course, developing guidelines and providing training requires huge investments and therefore project size needs to surpass a certain threshold.'

Oblique
Poul now offers me a presentation on his laptop. 'Since the mid-nineties we have been carrying out airborne Lidar surveys. In the beginning we co-operated with TopoSys as subcontractor, using rented equipment. From this we gained a lot of experience, but after a while the time is ripe for doing it all yourself, and therefore we bought the newest Leica Lidar system, which is able to capture 150,000 pulses per second. With our new Lidar system we can now capture up to twenty points per square metre. Here you see the Marble Church in Copenhagen, and look how detailed the point-cloud is!' Apart from orthophotos, DEMs and vector maps, oblique images are also a standard product. 'About ten years ago we started using oblique aerial photos for counting whales along the coast of Greenland,' Poul laughs. 'But gradually it became serious geometric business. We decided to do our own development and when the technology became sufficiently mature we began also to make oblique images of major cities with resolution down to 5cm. Without leaving the office, municipal officials can now register how many floors a building has and determine the shape of roofs and volume of buildings. The photos also give architects and the public a good impression of how a new building fits into the neighbourhood, or the appearance of a town quarter after changing facades. In combination with orthophotos they give fire brigades and sanitation workers information on how to access building blocks through back gardens. Today we have two oblique systems each consisting of five cameras, fully calibrated, so that measures can be taken. I cannot say much about the configuration because it is classified information, but the images are well in demand."

Final Remarks
On my way back, passing the suspension bridge of the Great Belt Link, I wonder how so many people can take for granted the existence of such a terrific piece of engineering work. How can it be that such an ingenious achievement of human cunning and co-operation inspires so very few young people to chose a career in engineering in general and geomatics in particular.