Educational Landscape

Many institutes for geomatics education experienced hard times around the turn of the millennium. In particular, the influx of new students was often dramatically low. Delft University of Technology in the Netherlands, for example, in September 2000 welcomed no more than ten novice geodesy students: seven boys and three girls, all fresh from high school.

As a teacher tasked with introducing new students into the geodesy arena, I observed at the time, â€œOver the past quarter of a century, the number of new students welcomed into my department at the start of the academic year has never been so low. The number is no more than 25% of our top years.â€ I could not then foresee that influx numbers would drop even further over coming years; falling so far that the university board decided to dump land surveying and geodesy from its list of educational programmes. We are gradually recovering from this defeat and the university board has allowed us to start a Master of Science Geomatics degree programme by 2005.

So the first few years of the new millennium have been roaring years in the palace of education. And many must have gone through the same experience. That is point number one. Number two is that, in line with the rapid changes taking place in society and technology, geomatics education too is undergoing continual evolution. Roughly speaking, one can now step into geomatics from three backgrounds. Firstly from the application domain; for example a demographer using GIS and other geomatics technology to analyse the movement of rural dwellers to urbanised areas. The second direction of entry is from an information and communication-technology background. This is the ICT engineer who, being specialised in databases, web-based services, GML and so on, becomes involved in storage, management and dissemination of geo-information. The third background is the data-acquisition side: surveying, photogrammetry, Lidar, remote sensing, navigation, surface reconstruction, and so on; in other words, the surveying and mapping community. A geomatics specialist should be knowledgeable and skilled in all three areas: in-depth in one, and possessing thorough insight regarding the others.

How are the above three backgrounds incorporated in the diverse programmes on offer? Is the influx of students commensurate with a steadily growing need for geo-information for detailed urban and rural planning, monitoring of human-induced and natural processes, disaster management etc? How do universities adapt their programmes to changing societal needs and technologies? How does one make use of the opportunities offered by e-learning? How is geomatics education organised in emerging economies and developing countries? To find answers to these questions I have invited a number of institutes for geomatics education all over the world, chosen quite at random, to contribute to a series of articles on developments in geomatics education. This initiative, enthusiastically embraced by many, begins this month with two contributions to the new series from countries formerly part of the centrally planned economies of Middle and Eastern Europe, countries fast emerging since the turn of the millennium.

Contributors were asked to address the following topics:
- history of geomatics education at university/in country
- main design philosophy behind geomatics programme
- structure of programme and main teaching subjects, aggregated into six freely chosen main topics, accompanied by credit points or ratio to entire programme
- balance between theory and practical tuition/internship
- (organisational) embedding within university
- experiences gained in e-learning
- co-operation/exchange with other (inter)national universities/polytechnics
- competition with other (inter)national universities/polytechnics
- marketing strategy for attracting novice students, including main/unique selling points and background of novices
- incorporation of demands made by professional practice and co-operation with practice
- any additional topic specific to university or country.

Invitees were requested to provide statistics on student numbers, influx per year, numbers annually obtaining a bachelor and/or masterâ€™s degree, number of teachers and total workload, optimal number of students, and annual fee. So that an impression might be formed of the focus of education and research, invitees were also asked to include a list of twelve representative samples of graduation work (BSc and MSc) completed within the last three years, and five representative PhD theses, begun or completed over the same period.

Invitees were advised that they did not have to stick to the order mentioned above but were free to arrange information in their own way; they might also aggregate in a single paragraph information concerning two or more topics. In the case of it being impossible to cover all topics, for example because a programme has only recently begun, respondents will focus on the remaining ones. So authors will use the above outline more as guideline than fixed template. The contributions will thus show up in a wide variety of formats, contributing to the vitality of the series.

Although I have invited geomatics institutes to contribute to the series, this does not imply that everybody else is excluded. If you feel a contribution from your side would be of value to colleagues, please feel free to contact me and discuss your proposal. You are very welcome to participate and share your views and experiences.