

GO GEO!!

H. Westerbeek MSc

Foundation Labour Market and Geo Information, P.O. Box 9046 , 7300 GH Apeldoorn, The Netherlands, Telephone:+31 (088) 183 3117, hendrik.westerbeek@kadaster.nl

KEY WORDS: education, GEO, job market, students, raising awareness.

ABSTRACT

Organisations in the private and public sector, together with educational organisations and the professional body for geo-experts in The Netherlands have joined hands to start a promotion campaign in secondary schools and universities: Go Geo. In the campaign the magnitude of geo information in modern society is expressed.

The campaign focuses on three kinds of activities. In the first place the Foundation for Labour market and Geo Information has started to make students aware of the importance of geo information and its many possibilities for study and employment. In the second place vital initiatives are being made to improve Geo education at all levels. In the third place the Foundation is taking the lead in organizing contacts and liaising among students, educational institutes and employers.

The campaign aims at sharing knowledge and skills as well as building cooperation in a growing geo information sector in The Netherlands and in Europe. On a yearly basis, employers in The Netherlands need over 300 new employees with accurate knowledge and skills. This includes about 20% real specialists and 80% of staff who are able to implement geo information in all kinds of processes from traffic up to agriculture. There is a huge mismatch between demand and supply. The ratio is out of balance between jobs and the number of students and the quality of education.

The activities of the *Foundation Labour Market and Geo Information* fit within the initiative of the Dutch Government to implement a strategy towards realizing a national spatial infrastructure and also within European activities on promoting cooperation.

1. INTRODUCTION

We are heading for rush hour traffic in geo developments!. Years have passed of relatively steady work on digitalisation. Many geo data have been collected already in a digital way. On uncountable places databases are available with location oriented data. Only Dutch

government agencies already own more than 50.0000 of such databases. More and more energy has gone to connection, standardization and interoperability items. A lot has been achieved. Changes of municipal postal addresses are automatically updated in Kadasters' land registration databases in The Netherlands, as well as changes in the names of companies from the databases of the

Chambers of Commerce. Fiscal databases of the Ministry of Finance are connected to databases of employers and banks. As a taxpayer you only have to check your data, collected from different sources. If necessary you can be traced on location by using your mobile telephone.

2. MAIN BODY

2.1 An Awakening Giant! All these databases should be considered as a whole. An awakening giant! Society kissed him already and he is getting standing up. We don't know exactly what he will do with us. He will bring prosperity for sure. High qualified jobs and efficient processes. But he will also bring risks, like consequences for privacy. Possibilities of geo information supply will be discovered we never thought of before. And the giant is already well dressed. GIS technology has been developed in such a way already that technology will be the enabler of all kinds of explorations and findings. If you look around many innovative geo information services are originating. Look at the traffic and navigation industry. In a short while navigation products have become a commodity. Nokia is giving navigation possibilities for free on its mobile phones. New cars standard have navigation equipment on board. Even available for your bike! Look at the agricultural industry. Precision agriculture has started. Modern tractors use gps equipment for efficient seeding and harvesting based on clear digital maps of the properties. Look at the safety industry. In all kinds of emergency centres modern GIS technology has been installed to be sure that fire fighters, ambulance personnel and police are sent as quick as possible to the right place in cases of emergency. Look at the environment industry. More and more we are successful in detecting and solving environmental issues by using GIS technology. The INSPIRE initiative in

Europe was initiated from an environmental perspective.

2.2 Complete Redesign of GEO Processes . Collection of geo data will change spectacularly the next decade. Now we already face a new phenomenon like crowd sourcing. In the two-years congress of the professional body GIN (Geo Information Netherlands) in December 2009 I was able to chair the session of developments in collection of data. I was impressed by the fast developments. Precise deformation survey using satellite images. Pictometry 3d datamodelling by using low flying airplanes equipped with all kinds of modern camera technologies and also collection of data from a car, driving more than 80 km an hour, collecting all local data with also superior camera technologies. The land surveyor of the future will be a geo data collector with a still extending toolbox of available technologies.

Also the evolution of data capture is going on and will be more demand driven. People connect from all kinds of working places on every hour of the day. Questions will be brought forward from all kinds of (e-government) portals. Geo it professionals will have to deal with these developments. Data capture will have to meet the demands of fast developing data supply.

2.3 Accelerating Developments. The geo information infrastructure is facing its first level of completion. This development means a lot for the professions in the geo environment. They will not only have to deal with the redesign of the processes. Long time existing relationships change. For instance within government. In the Netherlands the idea of basic or key registrations have been worked out. One time collection, multiple use. The discussion about the prices of geo information products is at stage. Governmental tasks are reallocated.

Kadaster in The Netherlands for about 175 year was responsible for tasks in the field of land registration and cadastre. In the meantime these tasks have been extended with tasks in the fields of topographical mapping, cables and pipelines, public restrictions, physical planning and energy labels. All the collected data for these tasks offer interesting possibilities for cross selling. For government or market sector? Relations between government and market sector are changing. New agreements have to be prepared of public/private partnerships in data use, product development and distribution. In the period 1995-2001 the employment in the geo sector in The Netherlands increased from 18.000 full time equivalents (fte) to 46.000 fte in 2001. This means a yearly growth of about 17 %. Even in 2009 in time of recession the growth was about 8 %. The total turnaround of the sector increased in the same period from €0.85 billion in 1995 tot €2.77 billion in 2001. This corresponds with a yearly growth of 22%. The bureau of employment of the United States predict that the geo information sector, together wit nano –and biotechnology, will be one of the three important growing sectors for employment in this century.

2.4 Education is Behind.

The professionals who achieved the digitalization are getting at age. The average age of staff of Kadaster and of the professional body GIN is above 50 years. Another decade to go and a whole generation of geo specialists will be retired. This generation did a tough job. In the Netherlands now we have to be worried about their successors. Digitalization was coupled with a decrease of jobs for many years and therefore with too less attention for education. At the same time the sector now is growing because of geo information possibilities. Business is missing opportunities because of vacancies and a backlog of knowledge and skills.

Considering the situation on the labour market in the Netherlands nowadays we meet a clear mismatch between demand and supply:

Education	Demand per year (in Thousands)	Supply per year (in Thousands)
Middle	100-150	< 30
High	90-140	± 20
Scientific	60-100	± 30

Table 1: Labour Market in The Netherlands

At the same time we see that life long learning is necessary to keep staff up with developments. New models of studying and working need to be developed.

2.5 National Policy on Knowledge, Innovation and Education. The Dutch Government developed a strategy to improve cooperation in the fields of knowledge, innovation and education. This strategy focuses on three steps:

1. The Netherlands belong to the world top five countries in 2011 looking at the development of knowledge, innovation and education in the sector of geo information.
2. The labour competencies for the development, the maintenance and the use of the national geo information infrastructure are embedded in the curricula of all levels of education.
3. Geo information will be used in an optimal way in the total education chain.

The activities of the *Foundation Labour Market and Geo Information* (see www.arbeidsmarktgeo.nl) fit within this initiative of the Dutch Government to implement a strategy towards realizing a national spatial infrastructure and also within European activities on promoting cooperation.

2.6 Foundation Labour Market and GEO Information. In 2009 the geo employers in the private sector,

represented by Geo Business Netherlands, the employers in the public sector, represented by Kadaster and the geo professionals, represented by the professional body Geo Information Netherlands, started the Foundation Labour Market and Geo Information. In the board of the foundation also took place representatives of all three levels of professional education (MBO (mid level professional education) Council, the HBO (high level professional education) Council and WO (Scientific Education)).

The first action of the foundation was to launch the GOGEO awareness campaign (see www.gogeo.nl). This campaign aims at promotion of Geo education to realize a higher intake of students at all levels. Several promotion activities took place, like development of a website, development of all kinds of promotion materials, organisation of awareness discussions in class and presentations on open days of institutions and career days.

The second action was to initiate improvements in education. At the mid level professional education cooperation was organized between several institutes to define a new curriculum. In cooperation with employers and students the examination requirements for land surveying were renewed. At high level professional education new initiatives were accompanied for starting bachelor programmes. For the moment it is expected that in 2012 in four universities for applied sciences bachelor programmes for geodesy, geo-ict, geomedia and design will be available. For the master level as well as for the bachelor level geo minors are developed for cooperative use. With employers and education institutes discussions have started for life long learning curricula and in company training possibilities.

3. CONCLUSIONS

The next step is to organise best practices of cooperation between all involved and interested parties in order to stimulate innovation initiatives. Plans have been made to select a part of the country of the Netherlands in which geo companies, government organisations, education institutes at all levels, recruitment agencies and other can form innovation platforms and teams. To find out the best way of learning, teaching and working for the next future.

4. REFERENCES.

GIDEON, 2008-2011, Vision and strategy on a basis infrastructure for geo information in the Netherlands.