Theo Peters – GIS as a virtual Front Office for Municipalities in the Netherlands

The main purpose of this thesis is to set up a procedure for the implementation of a virtual GIS front office as an information source for the department of Building and Living. This virtual front office must also be able to serve as a municipality-wide GIS for the whole organisation. The starting point for reaching this goal is the research question: 'How far can the use of GIS offer a basis for setting up a virtual front office specifically targeted at the department of Building and Living and the internal organization, and to what extent is this already implemented within municipalities in the Netherlands'.

From the questionnaire held for this thesis it appears that Dutch municipalities cannot work without GIS any more, and that the use of digital geographical information is generally accepted. From all municipalities, 90.2% use GIS in the form of CAD, management systems or as GIS. A further 8% said that they intended to do this within five years. The use of GIS has therefore considerably increased compared with earlier research in 1996 and 2000, when in the first case 21.4% and in the second 39.1% of municipalities used GIS. In 64.4% of the municipalities a specialized department or individual is responsible for setting up, implementation and maintenance of the GIS applications. In this context a GIS manager, a co-ordinator of Geo-information or a Geo-information specialist might be considered. From analysis of the questionnaire, it appears that 78.7% of municipalities have a department for 'Building and Living', 74.1% has one for 'Care and Welfare' and 98% has a department of 'Citizens' Matters'. The single-office concept is apparently less used in integrated service provision and the linking of information. It is recommended to use GIS for this linkage because most information has a geographical component or is connected to a particular place in the municipality.

The introduction of GIS into an organization demands a phased planning. After the necessary first experience is done with the application of GIS to registration, management or design, a beginning can be made with the application of GIS as the basic information system. In this context it is recommended to begin by showing the topographic map and cadastral data, possibly accompanied by digital air photos. By also linking an address table here, a simple information system is available, with search entry via the map and via the address.

From this basis, other sources can be added as modules. By this work method the needs of the organization can be incorporated, and the sequence of availability of digital information. On the basis of the results of the questionnaire and the publications consulted, the 14 most-wanted information sources for a municipality-wide GIS are:

1. Topographic map
2. Cadastral data
3. Air photos
4. Town planning
5. Sewer management
6. Environment (e.g. soil pollution)
7. Road management
8. Parks and green areas
9. Council tax
10. Buildings
11. Monuments
12. Building permits
13. Public legal restraints
14. Land matters, parcels

To start on the application of GIS as a virtual front office, a number of conditions have to be satisfied within the municipality:

1. There must b a clearly responsible central co-ordination point, in the form of a department or specialist for Geo-information;
2. The municipality must possess a digital topographic map and a cadastral map;
3. There must be more than two years' experience of GIS in a general sense;
4. There must be more than five applications of GIS for registration, administration and/or design;
5. There must be at least one application of GIS for management, research or linkage.

The existence of a central file with the features of addresses or buildings is not a condition for setting up a municipality-wide GIS. In various publications it has been written that municipalities must urgently start on these two registrations, but it appears that this is not happening. The implementation of municipality-wide GIS is nevertheless going on. A municipality-wide GIS can certainly be a stimulus for setting up these central registrations. It can also serve as a basis for the future registration of public legal restraints.

In 30% of the municipalities GIS is already used to make municipality-wide spatial information available, and a further 54% claim to be busy setting up such a system. From the questionnaire it appears that most municipalities expect that more than 25% of all employees will make use of a municipality-wide GIS. From these figures it can be concluded that GIS is seen as a basic information system and that GIS will in reality be used as a virtual front-office.