THE APPLICATION OF GIS FOR THE
EVALUATION OF THE IMOVABLE PROPERTY
Sergiu Popescul

Abstract: *The application of GIS for immovable property evaluation in Moldova Republic is enough important for the country economy, in the context of radical modification occurred last years in the economy of the country. It is related to the knowledge of realest value of the immovable property especially within built-up area of the localities.*

In the given work it was tried to present succinct information in order to select a spacious information and numerical alfa about immovable objects and at same time to carry out the necessity of the implementation of the GIS in the given domain.

Key words: *GIS, numerical alfa, description.*

Rezumat: *Aplicarea GIS – ului în evaluarea bunurilor imobile în Republica Moldova este destul de importantă pentru economia ţării, în contextul schimbărilor radicale ce au loc în ultimii ani în economia ţării. Este legată de cunoaşterea valorii cât mai reale a bunurilor imobiliare, în special în intravilanul localităţilor.*

În lucrarea dată sa încercat să se prezinte o informaţie succintă în vederea selectării informaţiei spaţiale şi alfa numerice despre obiectele imobiliare şi totodată să reflecte necesitatea implementării GIS - ului în domeniul dat.

Cuvinte cheie: *SIG, alfa numerice, descriere.*

Except usual utilization of GIS such as: cartography, relief study, cadastre of imovables, management of editorial networks, the monitoring of some natural processes (the lots degradation), GIS may also play an important role in the process of imovables evaluation made by authorized persons. GIS must have the same weight in the evaluation of the imovables as in the cadastral works, the representation on the maps of the information and the description in the registers of a specific information.

The GIS application in the evaluation of the immovable property is rather important for the country economy in the context of the radical modifications that had taken place for the last years in the economy of the country. It is connected with the knowledge of the realest value of the movable properties especially within the built-up area of the localities with the following goals: the establishment of the sale prices and purchase, of the taxable quotation as well as for imovables respective utilization in the social activities with maximum efficiency. Concerning the evaluation of unconstructible or constructible lots, the value will depend on the capacity of satisfying of the society requirements. For determination of the lots value the following factors have an active contribution: longevity, unicity, emplacement, offer, etc. The nearest value to the reale one of the lot is the value of circulation of these ones that is established in the market conditions. In the case of the lots within the built-up area of the localities, the criteria of evaluation are different of the criteria of the lots evaluation out of the built-up area. The value of the real estate will be actualized with a coefficient of adjustment, depending on the inflation indexes in the period in which the evaluation is performed. Due to its unitary character the land can not be evaluated separately of the constructions on it, estimating the market value having as a result the highest value of the evaluated goods.

In this context there are necessary data and information being very diversely taxed mainly by the legislation in force and that may be quantified by a knots system. These information are:

a) *the informations concerning the localities:*
- the category of locality (district, city/town, village);
- the emplacement of the lot;
- the economical functions and social characteristics of the locality (agricultural, industrial, etc.);
- the juridical situation of the property.

b) *data concerning previous realized sales and their afferent prices;*

c) *the informations referring to the constructive elements of the construction:* the occupied surface, the destination, the levels number, the number of subsoils, the resistance structure, the building materials,

the nature of the walls, the roof, the type of property, the mode of administration, the number of rooms and annexes.

d) *the informations referring to the position of the imovables according with:*

• the transport nets;

• the specific endowment to the urban environment (railway stations, bus terminals, parkings, etc.);

• edilitary nets.

e) *the informations referring to the existence and distance according to the economical and social institutions (trade centers, markets, workshops, banks, post office, establishments of education, etc.);*

f) *the geometrical characteristics of the lot;*

g) *the restrictions of the lot utilization under certain government reglementations of the general urbanistical plan;*

h) *the ecological informations concerning the environment;*

i) *the criminality state of the district, etc.*

While at the basis of the lots evaluation out of built-up area it was taking into account the soils fertility class and their efficacious productivity that have mainly in mind the natural properties of the soil, the climate conditions, the relief, the hydrology as well as the arrangement of land improvements that were effectuated on then.

In this case the reference value depending on the inflation indexes and individualizing coefficients (the adjustment) of the plots, that takes into account of: the lot form, sizes, orientation, slope, the category of utilization, the degree of degradation, etc.

Taking into account the presented cases above we consider that only with GIS it may realize the sorting and stocking of the data, traditionally presented-basis data including the technical and economical characteristics of the real estate as well as geographical one-emplacement, neighborhoods, the traffic level, etc., and also by various multimedia methods. By overlapping and processing of the information on the thematic stratums, it may obtain interesting crossing and necessary informations both for establishing of certain scores, that would facilitate the establishment as possible as correct of the value of the real estate-to which the reference is done being able to effectuate utilizations and analysis that would serve among other things to the zoning of the locality in different classes of urban behavior or to constitute sources of decisional information for the interested factors. In the case of GIS application one of the component of the special information being totally different from the others even if we would have taken into account only the sources and modalities after which it is verified, administrated and then exploited. The spatial informations and numerical alfa attributed in the process of evaluation are reflected in (Table 1).

The investigations of the properties and their evaluation are also facilitated by the capacities of the special analysis by maintaining together the informations about the real estate.

The investigations of the properties and their evaluation are also facilitated by the capacities of the special analysis by maintaining together the informations about the real estate.

Table 1

The systematization of the spatial information and numerical alfa about immovable object.

Conditions of evaluation and interested criteria	Sources of informations or sources of data
1. Access to the net of roads or connections (communications)	1. The road map of the residential zone
2. The traffic intensity	2. The map of the street net, informations of traffic and tests

3. Access to the edilitary nets	3. The map of the edilitary nets
4. Social costs: duties, taxations, etc.	4. Registers of duties and taxations of authorities
5. Convenient emplacement (picturesque situation, the distance related to the economic, social and administrative establishments, the meteo conditions, etc.)	5.Topographical, touristic, meteo maps, photogrammetric products at the scale 1:5 000, 1:10 000 (photogram), etc.

The investigations of the properties and their evaluation are also facilitated by the capacities of the special analysis by maintaining together the informations about the real estate.

Except the special analysis a GIS offers also the management possibility, the bases in the respective process of reasonable data allowing to the evaluators to do access efficiently and in a real time all the informations concerning the tables and diagrams. In the result of those ones exposed above it must mention the following principal elements:

1) the achievement of the statistics concerning the lots prices evolution for a certain time period.

2) the forecast of the prices evolution of the real estates.

3) the obtaining of the much more veridically of the sale-(purchasing prices), etc.

4) the GIS will be an ideal solution for the raising of the evaluators activity level.

R E F E R E N C E S

1. P e t e r A. B u r r o u g h, R a c h a e l A. M c D o n n e l l., *Principles of Geographical Information Systems.* Oxford University, Claredon Press, 2004.

2. G u ţ u V., *Cadastru bunurilor imobile. Evaluarea bunurilor imobile. Vol. V.* Agenţia de Stat Relaţii Funciare şi Cadastru, Chişinău, 2003.

3. P o p o v i c i N., B i a l y G., *Sisteme geoinformaţionale.* Ed. Gh. Asachi, Iaşi, 2000.

4. *Updating systems, data and knowledge in GIS. Oriental Pediment Geographical Information 97. From Research to Application through Cooperation.* Edited by S. H o d g s o n, M. R u m o r, J. J. H a r t s. Vienna, Austria, 1997.

5. B u r r o u g h P., *Principles of Geographical Information Systems for Land Resources Assessment.* Claredon Press, Oxford, 1986.

6. S ă v u l e s c u C., ş.a. *Fundamente GIS.* Ed. HGA, Bucureşti, 2000.