Developing and Implementing Mass Appraisal System in Lithuania

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Key words: mass valuation, Lithuania, property taxation.

SUMMARY

In comparison with other Baltic States - Latvia and Estonia where market value-based land taxes were introduced earlier along with mass valuation of land, Lithuania only is getting ready for these transformations. Regardless of that, a modern system of real property cadastre and register exists in our country, as well as an exhaustive land and building attribute database also covering sales evidences. The above mentioned information and technologies are concentrated in one institution - State Land Cadastre and Register (SLCR), which is one of the most important institutions in the real property tax system.

The State Land Cadastre and Register has exceptional circumstances to create a comprehensive and extensive databank of real property transactions since it keeps the cadastre (description of real property according to a certain system - by giving certain typical indicators as the area, number of rooms, purpose of use, wall material, productivity point of farming lands, etc.) and the register (description of all rights in real property, first of all ownership right). Data collected into one database allows avoid the duplication of data and allows create a powerful system able to satisfy different needs, including those of market researches and mass valuation.

At working out and implementing the new real property tax system, a problem arises how to rationally employ the available informational and institutional potential and how to achieve, that real property tax administration was effective and entailed small costs.

In 2002, on the assignment of the Ministry of Finance, the SLCR was implementing the pilot project of property mass valuation. The main objective of the project was to carry out mass valuation of all real property (land and buildings), and to present the results of mass valuation to the Governmental and other interested state institutions.

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1. REAL PROPERTY TAXES

The Lithuanian *tax system* is composed of traditional taxes: similar tax codes or combinations are established in other countries. Taxes on property currently include two items: the 1.5% *land tax* is applied to the value of both urban and rural private land and the 1.0% *real property tax* is applied to the value of real estate (excluding land) owned by legal entities. In addition Lithuania imposes a rent tax on state owned land.
Law on Land Tax, No I-2675, 25 June 1992 and Law on the Tax of the Immovable Property

Revenue from land and real property taxes

Year	1995	1996	1997	1998	1999	2000	2001
Revenue from property tax paid by companies and organisations (OOO' Lt)	70667	109993	149068	170103	178801	192081	211826
Revenue from land tax(OOO' Lt.*)	15544	11546	14693	14938	18800	20840	22403
Municipal budgets (OOO' Lt.)	1792161	2045401	2016504	2810442	2935489	2882935	2885062
Part of property tax within municipal budgets (per cent)	3,94	5,38	7,39	6,05	6,09	6,06	7,34
Part of land tax within municipal budgets (per cent.)	0,87	0,56	0,73	0,53	0,64	0,72	0,78
National budget (OOO' Lt.)	5673761	6644073	8148051	9250035	8825901	8663660	9229740
Part of real property tax within the national budget (per cent)	1,25	1,66	1,83	1,84	2,03	2,22	2,30
Part of land tax within the national budget (per cent)	0,27	0,17	0,18	0,16	0,21	0,24	0,24

* Current exchange rate 3,2 Lt – 1 USD
Source: Ministry of Finance of the Republic of Lithuania

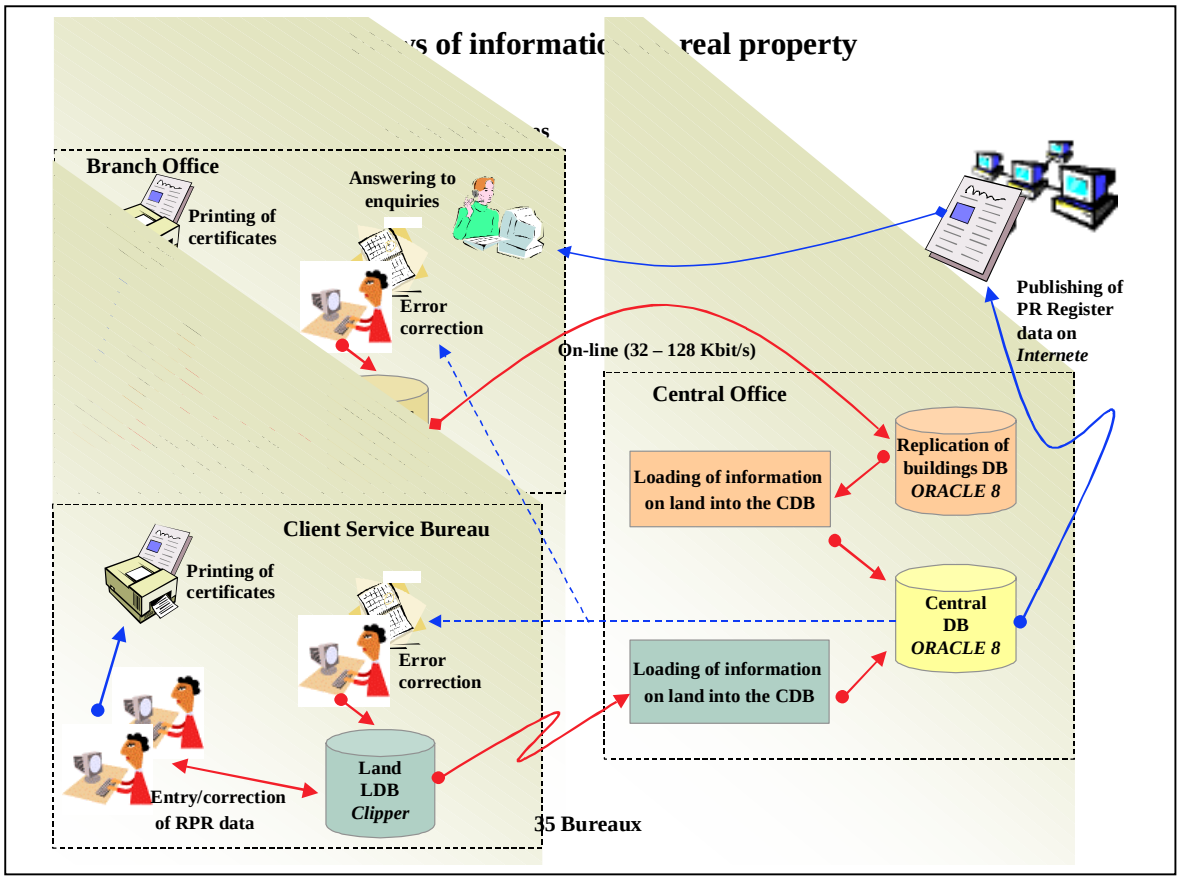
of Enterprises and Organizations, No I-565, 20 July 1994 are the main legal acts for property taxes. Both taxes are national taxes, but the revenues are returned to the 60 municipalities.

SLCR by 2003 determined taxable values of both land and real estate through application of various coefficients that adjust base value. The base value of land depended on its productivity point and was adjusted by coefficents based on various factors including nearness to city or settlement, evaluation of the parcel in terms of urban-ecological conditions, availability of engineering facilities, etc.
In case of real property, the taxable value is equal to the replacement cost (construction cost less physical depreciation) adjusted by locality coefficient.

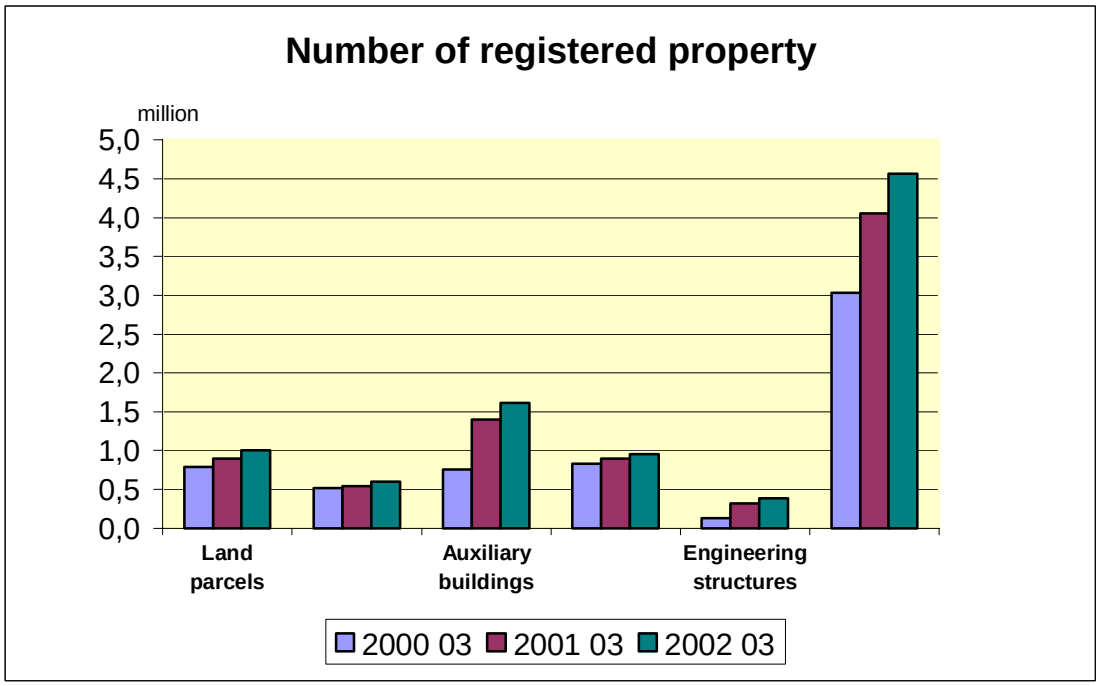
Last few years the SLCR was technically and methodically preparing for the introduction of the market value-based tax, in order to be able to pass to the new property valuation system after the change of the legal base.
Since 1998 the SLCR is collecting real property sales information. At the same time market data research is carried out, computerized data processing technologies are developed and improved, property mass valuation system is formed.
In 2002 year by order of the Ministry of Finance the SLCR started property mass valuation. The results of this work will be one of the basic preconditions for the real property tax reform.

2. LAND AND OTHER REAL PROPERTY INFORMATION

The development of computer based real property data register started ten years ago. In 1992 the Temporary Register of land cadastre data was established and the computer based land parcels registration system was developed and implemented. It covered the whole territory of Lithuania, was fully computerized, based on personal computers and managed by Land Management Boards of Municipalities. On Central level – all data was copied to the Central data bank, which was administered by the State Land Cadastre Enterprise. Up to 1997 cadastre and registration of buildings was separate from land parcels and was managed by the State Inventory Bureau in a manual way.
In 1997 – Law on Real Property Register was adopted and State Land Cadastre and Register was founded. Next year fully computerized Real Property Registration System was developed and implemented that linked land parcels and buildings – cadastre and register data into one unified system.
Since 1999 the computer network was developed. It covered the whole country and linked local data banks in counties and districts with the Central data bank. Data service for end users via the Internet was implemented alongside with the final data storage on building and dwellings, flats and apartments to the Central data bank. Recently a system for ordering cadastre and registering jobs via the Internet was introduced and full cost recovery was achieved.



Planning amount of the records in the central data bank will reach 6.0 million items, including 2.3 million land parcels and 3.7 million buildings and premises of different type.



Real Property Register comprises of following chapters:

Immovable items:
- land plots;
- constructions;
- flats in multi-flat houses;
- premises.

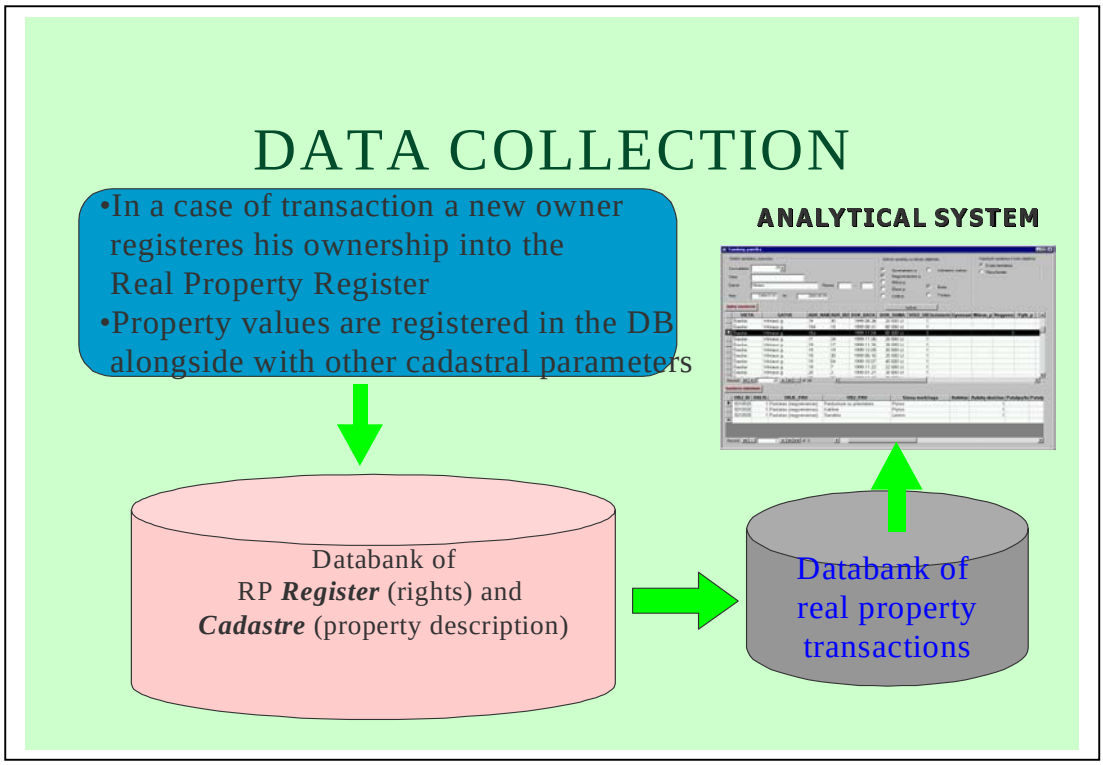
Cadastral data about immovable item
Map of the Real Property Register
Data identifying a property object;
Qualitative and quantitative characteristics of property object;
Main object purpose of use;
Other.
Graphical data about the boundaries of a registered immovable item, its location and position in the national co-ordinate system

Real rights in immovable items and data about the holders of these rights
Ownership right;
Right of entrust;
Right of possession;
Servitude;
Usufruct;
Right to build-up;
Long-term lease;
Mortgage;
First and family name of a physical person;
Personal code;
Name of a legal entity, its code;
Address;

Legal facts related to immovable items, real rights in them and restrictions on these rights
Sale-purchase contract;
Contract on exchange;
Contract of gift;
Contract of lease;
Contract of enjoyment;
Contract of rent;
Other legal facts.

3. COLLECTION AND USE OF TRANSACTION DATA

The State Land Cadastre and Register has exceptional circumstances to create a comprehensive and extensive databank of real property transactions. Data collected into one database allows avoid the duplication of data and allows create a powerful system able to satisfy different needs, including those of market researches and mass valuation.



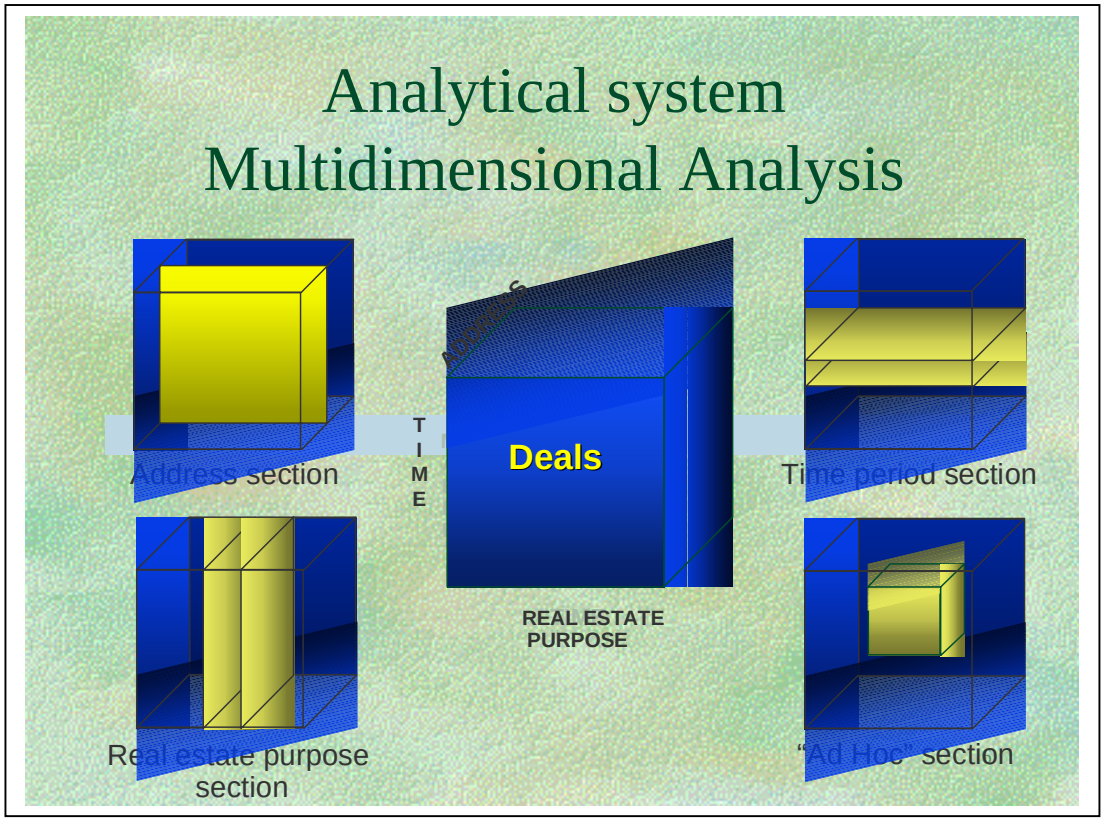
When a new real property unit is formed, it is inventoried and described in the Real Property Cadastre and all right subject to this property are registered in the Real Property Register.
After the conclusion of a transaction, a new owner registers the ownership in the Real Property Register, but the data in the Cadastre are not changed and remain the same. When the transaction is registered the sale price indicated in the purchase-selling agreement is recorded into the database. In such a way the price is kept in the central DB is supplemented by descriptive (cadastral) attributes and is taken to the local Database of Real Property Sales (Sales DB).

Sales database includes transaction data (sales prices) and descriptive property indicators.

Common indicators
Address
Name (type) of the real property and its purpose of use
Transaction date and sum
Year of construction
Wall material
Number of floors
Utilities: gas, heating, sewage, basement, etc.

For supplementary premises:
Floor number
Room number Total area and living area

Additionally for buildings
Number of premises (flats)
Foundation, partitions, roof
Water supply
Total, living, use and supplementary area
Reconstruction value.



4. FORMATION OF MASS APPRAISAL SYSTEM

Mass valuation model, developed in Lithuania, is based on three basic valuation aspects - *efficiency* (when more precise values are set with less efforts, expenditure and in a shorter time), greater *objectivity* while setting the values, increasing their acceptability and *equality* of values of similar property items. The aspect of equality is especially important for property valuation for taxation purposes. The before-mentioned aspects are deciding when many objects should be evaluated at a time during valuation process (mass valuation). Mass valuation is described by standard procedures and quality control of calculated values. A fair number of enterprise employees take part in this process (about 50 certified property valuers work according to the territorial principle) therefore their decisions have to be coordinated. In order to achieve the above mentioned aspects, models derived according to the formula should be concretized, and at the same time they should reflect market dynamics according to the appropriate value interpretation. Quality control is basically ensured by comparison of sales costs and appropriate values, which are calculated applying the model.
Realizing that mass valuation is the collection, sorting and processing of information flows, the State Land Cadastre and Register uses computer-analytical system developed on the basis

of real property register, which allows computerization of the greater part of valuation process. Application of GIS especially facilitates valuation process and connection of the achieved results and specific objects under valuation. Taking into consideration that the results of mass valuation should be clearly and reasonably presented to the taxpayers, use of GIS maps is also very important.
For property mass valuation the SLCR has been preparing for several years. Real property information in digital and graphical form, collected during five years, prepared data analyses and mass valuation and zoning technologies make the basis for the development and implementation of property mass valuation system. These parameters describe the preparation of the SCLR for mass valuation:

- Organizational structure (3 level structure, covering all the area of Lithuania)
- Human resources (over 50 property valuers)
- Information resources (central data bank, sales data bank, asked prices, etc.)
- New technologies for market research and valuation
- Interinstitutional cooperation (Ministry of Finance, Tax authorities, municipalities, etc)

The efficient assistance from foreign countries had great influence on preparation for mass valuation. These were the main know-how resources:

- Lincoln Institute of Land Policy (USA)
- OECD courses
- Swedesurvey project (over)
- Finish National Land Survey project (continuing)
- International Association of Assessing Officers (IAAO)

Institute of Rates, Revenue and Valuation (On 2002, on the assignment of the Ministry of Finance, the SLCR was implementing the pilot project of property mass valuation. The main objective of the project was to carry out mass valuation of all real property (land and buildings), and to present the results of mass valuation to the Ministry of Finance and other interested state institutions.

Additional objectives:

- to finish the formation of property mass valuation system, i.e.
- to introduce data analysis and mass valuation technologies into practice;
- to prepare property mass valuation methodology, corresponding to Lithuanian conditions;
- to train specialists to carry out mass valuation;
- to prepare proposals regarding the improvement of real property information base and its adaptation for the purpose of mass valuation;
- to analyze possibilities of introducing CAMA (Computer Assisted Mass Appraisal System) in Lithuania;
- to prepare proposals regarding ad valorem property taxes administration and relevant institutional infrastructure development.

40 property valuers from the central office and branch offices are directly involved in this work, intensive training is carried out with the help of specialists of the enterprise and experts

from abroad. Alongside with the specialists' training and practical introduction of mass valuation system, earlier prepared mass valuation methods are being improved.
As it was mentioned before, the market of almost all types of property is formed in Lithuania, and this market is rather active and dynamic. Therefore the developed mass valuation model is based on the analysis and comparison of sales costs. But for the engineering and special purpose buildings, as for objects not widespread in the market, a replacement value method is going to be applied.
The State Land Cadastre and Register, having in its disposition exhaustive and detailed information about real property and modern data collecting and processing technologies, has potential possibilities to develop and implement computerised property mass valuation system in a short time. In foreign experts opinion, in Lithuania the SLCR functions are as those of the surveying and mapping agency, the title registry and the part of property administration, and its activities cover all territory of Lithuania (see the scheme below).
- IRRV)
- The European Group of Valuers Associations (TEGOVA)
- International valuation Standards Committee (IVSC)
- 3 Baltic Countries cooperation

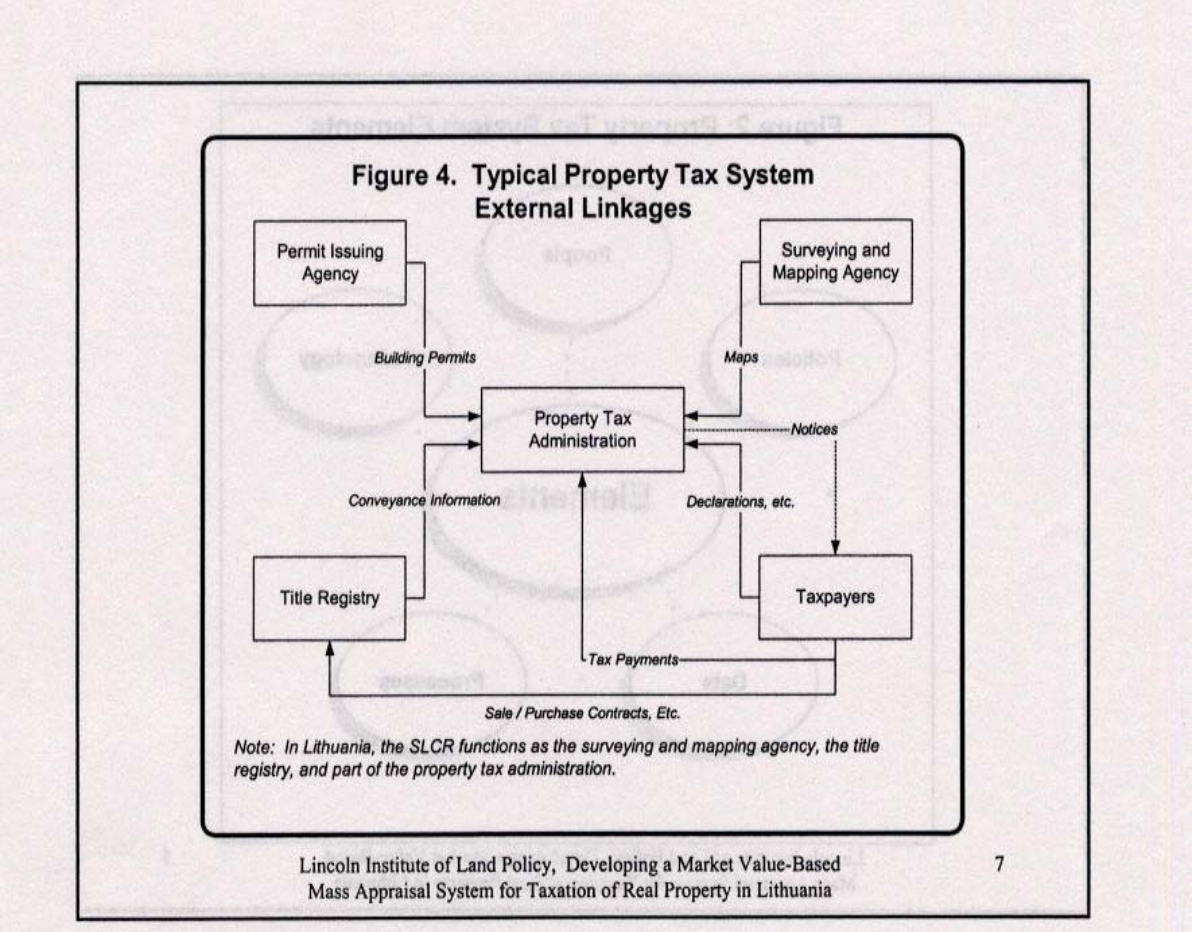
5. CONCLUSIONS

In conclusion the following basic preparatory activities for the real property tax reform and the implementation of mass valuation system could be singled out:

1. To introduce the real property tax, it is necessary to establish a system for valuation of real property for taxation purposes.

2. Methods and approaches for estimation of value based on market principles must be applied for the estimation of real property taxable value. The experience of other countries shows that mass valuation is to be used for real property taxation. Individual property valuation could be applied for special and unique objects (special purpose property), for instance, TV tower, Ignalina Nuclear Plant and etc. The Law on Property and Business Valuation Basics describes the specific property valuation approaches, which are harmonised with the international valuation system.

3. The approach of sales comparison values (analogue of sales prices) could be the basis for estimation of taxable value of administrative offices, land and other marketable objects. Capitalisation and replacement value approach could be applied for valuation of premises generating economic and other income. Seeking to achieve that the replacement value is as close as possible to the market value it is necessary to update the price-lists that are applied for the estimation of replacement value.



Source: Richard Almy. Real Property Assessment Systems, Seminar "Developing a Market Value-Based Mass Appraisal System for Taxation of Real Property in Lithuania" materials, Lincoln Institute of Land Policy, 5-9 February, 2001).

4. Property valuation, especially mass valuation, means the collection, sorting and processing of information about real properties and real property market. Analysis that is necessary for the development of the models derived from formulas, their calibration and quality control include computer operations, which require many data necessary to be processed. The implementation of these tasks requires applying computer-analytical systems, i.e. computer-aided valuation. The simplest forms of computer-assisted valuation are considered to be the information database management systems having the functions of data storage, retrieval, accountability and use, which enable the implementation of simplified models. Real property register system, which is distinct in Lithuania for its universality and comprehensiveness, is widely used in developing this model.
5. To speed up the valuation process by applying computer-based valuation systems it was necessary to use the analytical potential of computer in order to develop more sophisticated models, which helps to estimate property within the market in a more precise way and to evaluate the quality of estimated values.
6. The implementation of mass valuation system can be split into two main parts:

- Supplementation of the existing database model (to supplement the DB model seeking to enter the information necessary for property valuers);
- Development of a model for analytical system:
  - To the develop the relational analytical system model part;
  - To develop a multiple analytical system, i.e. the development of the multiple database and an appropriate application.

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