Effective Land Administration – Law, Regulation, Institutions and Technology Challenges

LITHUANIA EXPERIENCE

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Technical Deep Dive: Information Technologies for Improving Land Administration Services
November 13-17, 2017 Tokyo and Kobe
World Bank Tokyo Development Learning Center (TDLC)
Land Thematic Group and Geospatial Community of Practice (CoP)
**The Republic of Lithuania**

Area – 65,300 km²
Population – 2.85 mil.

The density of population is 44 inhabitants per 1 sq. km. 70% live in urban areas and 30% in rural areas.

Counties – 10
Municipalities – 60

**Historical Background**

- First land reform
- Second land reform
- Systematic land cadastre
- Land ownership restitution and rehabilitation
- Development of real property cadastre and register
- Land nationalisation
- Cadastre for state-owned land
- Return of landed property (estates' land)
- Reinstating of individual farming
- Independent Lithuanian state
- Middle of 30s century
- Restoration of independence
- Annexation of self-age
- Soviet occupation
STATE ENTERPRISE CENTRE OF REGISTERS

MANAGER OF BASE STATE REGISTERS

1997

REAL PROPERTY REGISTER

2004

REGISTER OF LEGAL ENTITIES

2004

ADDRESS REGISTER

2014

POPULATION REGISTER
“Conceptual framework of the national information society development of Lithuania”

(Approved by resolution No. 229 of 28 February 2001 of the Government of the Republic of Lithuania)

In order to modernize the management of the state:

1. to design an integral system of state registers
2. to harmonize the legal basis for the formation ...
3. to design modern IT tools to assist the Government ...
4. to design a joint information system ...

........
Registers and IS belonging to The State Enterprise Centre of Register

- Real Property Register
- Real Property Cadastre (NLS)
- Register of Legal Entities
- Address Register
- Population Register
- Mortgage Register
- Register of Property Seizure Acts
- Register of Wills
- Register of Legally Incapable Persons
- Register of Marriage Settlements
- Register of Contracts
- Register of Powers of Attorney
- Certification Centre
- IS of Licences
- IS of Legal Entities Participants
- IS of Licences
- IS of Consumer Rights
- IS of Cash Restrictions
- IS of CMC Registration Services
- IS of Electronic Document Archive
- IS e-health (MoH)
- IS e-invoice (MoF)

Ministry of Justice

- State Consumer Rights Protection Authority
  - IS of Consumer Rights
- Register of Design
- Register of Trademarks
- Patent Register
- Register of Topographies
- The State Patent Bureau
- The State Data Protection Inspectorate
- The State-guaranteed Legal Aid Service
- IS "Pagalba"
- IS KADIS
  - IS KADIS 1
- Forensic Science Centre of Lithuania
- The Law Institute of Lithuania
- The European Law Department
- IS of the Lists of Political Parties Members
DATA AND SERVICES

- Public property auctions
- Public infrastructure
- Agriculture
- Recreation & tourism
- State Forests Data
- Heritage
- Polution & Hazards
- Resident reports
- Zoning
- Construction Permits
- Waste management
- Market value
- Taxable value
- Addresses
- Businesses
- Public transportation
- Communications
- Utilities
SECR Electronic Services

Electronic Services 523

- The Real Property Register and Cadastre
- Register of Legal Entities
- Register of Addresses
- Market transactions
- Surveyors
- Register of Population
- Registers of rights

2001: 8158
2003: 708
2005: 770
2007: 561
2009: 708
2011: 3304
2013: 9826
2015: 16667
2017: 27004
2019: 33774
2021: 38886
2023: 57601
SMART SERVICES

Ecosystem of developing Smart Public Services

Public sector

Science

Business

Process & Management Platform

Data Analytics

Cyber security & identity

Integrated data

Integrated HUB

Data Warehouse

ERP systems

Data modeling

Operational Reporting

Integration HUB

Data cleaning

Sensors, devices, gateways

State main registers

Municipal data

Government agencies data

Business utility companies data

Drone

Orthophoto

Smart services & applications

Smart Health

Integrated Shopping

Education

Waste Management

Traffic Management

Smart Environment

Smart Parking

Electric Vehicle Charging

Visualization

Smart services & applications

Framing the Ecosystem of developing Smart Public Services

REGRISTRA CENTRAS
Real property cadastre and register
Public electronic service for real property transactions
Surveyor and Geo-Surveyor
Electronic documents archive
Energy certification
Real property mass and individual valuation
Real property market data analysis
Real property values maps
Development of Land Administration in Lithuania

**1990-1996**

- **Paper files (BTI)**
  - Topographical map
  - Separate formation and registration of land and constructions
  - Analogue survey equipment
  - Limited public data

**1997-2004**

- **Integrated digital data of Cadastre, GIS, Register**
  - Data of Cadastre and Register from the CDB have legal power.
  - Digital survey equipment
  - Public access to data and services

**2005-2017**

- **Registers and cadastral data merged with municipal data to create context for new services and solutions (REGIA)**
- Digital notarized property transaction (NETSVEP)
- Drones about to be deployed for greater surveying speed and accuracy
- New land parcels are formed online on live cadastral map (Geo-surveyor application of CoR)
- Open data

**1990-1996**

- **Main functionalities of Surveyor**
  - Open data

**1990-1996**

- **CADASTRAL DATA PUBLICATION ON THE INTERNET**
  - Open data
DATA CONTENTS OF THE REAL PROPERTY CADASTRE AND REGISTER

Cadastral data about real property object
- Data identifying a property object;
- Qualitative and quantitative characteristics of property object;
- Main objective purpose of use;
- First and family name of a physical person;
- Name of a legal entity, its code;
- Sale-purchase contract;
- Contract on exchange;
- Contract of gift;
- Contract of lease;
- Contract of enjoyment;
- Contract of rent;
- Mortgage;
- Lien;
- Property administration;
- Other legal facts.

Attributive cadastral data
- Personal code;
- Name of a legal entity, its code;

Graphical cadastral data
- Register entry No., Property address, Dates of registering Names of property Property ID
- Ownership right;
- Right of trust;
- Right of possession;
- Servitude;
- Usufruct;
- Right to build-up;
- Long-term lease;
- Other.

Real rights in Real property objects and data about the holders of these rights
- Sale-purchase contract;
- Contract on exchange;
- Contract of gift;
- Contract of lease;
- Contract of enjoyment;
- Contract of rent;
- Mortgage;
- Lien;
- Property administration;
- Other legal facts.

Legal facts related to real property objects, 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;
- Mortgage;
- Lien;
- Property administration;
- Other legal facts.
INSTITUTIONS INVOLVED IN REAL PROPERTY ADMINISTRATION
SERVICES OF THE REAL PROPERTY REGISTER

PUBLIC SECTOR
- State institutions
- Law institution
- Counties
- Municipalities

MARKET PARTICIPANTS
- Notaries
- Banks
- Leasing companies
- Real property companies
- Property valuers
- Insurance companies
- Lawyers
- Bailiffs
- Other

CDB OF THE CENTRE OF REGISTERS
- Land
- Owners
- Mortgage
- Restrictions, obligations
- Buildings
- Rights
- Addresses
- GIS information
- Premises, flats
- Market value
- Legal entities
- Cadastral data

Market participants include:
- Population Register
- Mortgage Register
- Register of Property Seizure Acts
- Register of Territorial Planning Documents
- Forestry Cadastre
- State Cadastre of Protected Territories
- Register of Immovable Cultural Properties
- Other registers and cadastres
MAIN PRINCIPLES FOR IMPLEMENTING SMART CONVEYANCING

Only digital data have legal power

Full integration with the base state cadastres and registers

No paper documents

Full integration of graphical, attribute and visual data

Preparation and provision of e-documents
GEOINFORMATION SYSTEM OF REAL PROPERTY CADASTRE
SYSTEM „GEOSURVEYOR“. OPERATIONAL PROCESS

1. **OWNER**
   - Owner’s files
   - Order of surveying works

2. **SURVEYOR**
   - Information system GEOSURVEYOR
   - ELECTRONIC FILE
   - Formation of electronic documents

3. **NATIONAL LAND SERVICE**
   - Decision to form a real property object
   - Checking of electronic documents

4. **CADASTRE MANAGER**
   - Checking of e-file and registration
MAIN AIMS FOR THE CREATION OF “GEOSURVEYOR”
MAIN AIMS FOR THE CREATION OF “GEOSURVEYOR” AND “E SURVEYOR”

- Web-based software for processing digital cadastral data, with access to as many as possible online data needed for surveying;
- Optimisation of the processes for preparation of digital cadastral data file;
- Submit the prepared cadastral data electronic file for revision and registration;
- Optimisation of the processes for revising cadastral file and registering;
- Partly automate revision of cadastral data file and registration processes;
- Increased quality of preparing cadastral data file;
- Standardization of digital cadastral data.
Information system of public e-service for real property transactions (NETSVEP)
CONCLUSION OF CONTRACT FOR REAL PROPERTY TRANSACTION AND REGISTRATION

PARTIES OF TRANSACTION
- Application
- Contract
- Excerpt from CDB

NOTARY
- Central databank
- Digital archive
- Data from the Registers
- Notification on registration in the CDB of the Register
- Excerpt from the CDB of the Real Property Register

CENTRE OF REGISTERS
- Order for revision of the Register data
- Digital transaction data with electronic signature

Excerpt from the CDB
GOSIGN - esignature

- Signing documents with qualified electronic signature
  - stationary and mobile
  - Time stamping

- Verification of validity of digital signature

**Additional features:**
- Invite one or more people to sign a document
- Monitor subscription process
- Send a reminder to sign the document
- Store signed documents and share them
STATISTICS OF NETSVEP

On 15 July 2009, the first real property transaction agreement was prepared and signed electronically.

In May 2013, notaries, using NETSVEP IS, submitted a millionth request for transaction data processing, registration of legal facts, ownership and other real rights.

Using NETSVEP, the notaries prepare and attest 1500-2000 (≈90-95%) agreements and submit about 1200 legal facts for registration on the concluded transactions per day in the country.
According to Doing Business 2017 report, Lithuania is the second (2) among 190 countries in the category of efficiency of property registration.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Eastern Europe and Central Asia countries, in average</th>
<th>Lithuania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of procedures</td>
<td>5.4</td>
<td>3</td>
</tr>
<tr>
<td>Time (days)</td>
<td>22</td>
<td>2.5</td>
</tr>
<tr>
<td>Expenses (% property value)</td>
<td>2.6</td>
<td>0.8</td>
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</table>
Information system of the real property market analysis and property valuation
MAIN PRINCIPLES OF THE LITHUANIAN APPROACH TO MASS VALUATION

- Mass valuation system is built on the integrated digital data of real property cadastre and register and other main state registers.
- Mass valuation process is fully automated.
- Mass valuation results are public and published on the Internet.
- Mass valuation results are easily applicable for decision making on different issues.
- Lithuanian mass valuation system was presented in different international events, articles, international projects (China, Russia, Azerbaijan, Egypt, EU countries, etc.)
GROUPS OF LAND

Agricultural, land of gardeners associations
Commercial, industrial
Residential
GROUPS OF CONSTRUCTIONS

Residential: Dormitories, Apartments, Detached houses

Administrative and health care Commercial and services
Recreation and sports Culture, education and science
Garden buildings Auxiliary Garages

Industrial, warehouses, transport and engineering
**MODEL SPECIFICATION: CORRELATION MATRIX**

Correlation matrix used for determination of qualitative and quantitative factors which show how important is the relation between statistically interrelated factors.

<table>
<thead>
<tr>
<th></th>
<th>Price</th>
<th>m2_price</th>
<th>Year_constr</th>
<th>Total number of floors</th>
<th>Floor</th>
<th>Floors without first and last floors</th>
<th>Zone</th>
<th>Walls</th>
<th>Type of object</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price</td>
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<td>0.500634</td>
<td>0.355828</td>
<td>0.229186</td>
<td>0.186679</td>
<td>0.265887</td>
<td>0.437425</td>
<td>0.105204</td>
<td>0.066759</td>
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<tr>
<td>m2_price</td>
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<td>0.170319</td>
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<td>0.084201</td>
</tr>
<tr>
<td>Total number of floors</td>
<td>0.229186</td>
<td>0.228583</td>
<td>-0.00234</td>
<td>1</td>
<td>0.236633</td>
<td>0.807229</td>
<td>0.271447</td>
<td>0.25406</td>
<td>0.098062</td>
</tr>
<tr>
<td>Floor</td>
<td>0.186679</td>
<td>0.204958</td>
<td>0.082343</td>
<td>0.236633</td>
<td>1</td>
<td>0.762646</td>
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<td>0.022118</td>
</tr>
<tr>
<td>Floors without first and last floors</td>
<td>0.265887</td>
<td>0.276777</td>
<td>0.048958</td>
<td>0.807229</td>
<td>0.762646</td>
<td>1</td>
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<tr>
<td>Zone</td>
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<td>0.319315</td>
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<td>0.1712</td>
<td>0.075817</td>
</tr>
<tr>
<td>Walls</td>
<td>0.105204</td>
<td>0.1612</td>
<td>-0.05794</td>
<td>0.25406</td>
<td>0.091507</td>
<td>0.223767</td>
<td>0.1712</td>
<td>1</td>
<td>-0.02407</td>
</tr>
<tr>
<td>Type of object</td>
<td>0.066759</td>
<td>0.065246</td>
<td>0.084201</td>
<td>0.098062</td>
<td>0.022118</td>
<td>0.081054</td>
<td>0.075817</td>
<td>-0.02407</td>
<td>1</td>
</tr>
</tbody>
</table>

The outcome of specification: factors and zones (territories) are specified which may be important for estimating the average market value of real property.
GIS IN MASS APPRAISAL

- Distribution of sales and sale prices
- Analysis of cadastral data
- Distribution of price influence factors
ANALYSIS OF CADAstral DATA OF LAND PARCELS USING ARCMAP

Soil productivity score (Šakiai district)

Sales of land parcels 2010.01.01-2015.08.01

Land structure according to the purpose of use (Utena city)
VERIFICATION OF RESULTS

Comparison of mass valuation values and sales prices of residential buildings with land in Vilnius city

There are two primary aspects of assessment performance: level and uniformity.
- Assessment level relates to how close overall assessments are to market value.
- Uniformity relates to the consistency or equity of assessed values.

**RATIO STUDY**
Providing Mass Valuation Results through the Internet

www.registrucentras.lt (Open for Public)

Textual data
- Search for the average market value by unique number;
- Search for the taxable (base) value of the building by unique number;
- Search for value zones by municipalities, residential areas, streets;
- Mass valuation documents, materials of public discussions.

Graphical data
- Value maps of the territory of municipalities and Lithuania;
- Graphical search for value zones (through the Address Register).
<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment of taxable values of land and buildings</td>
</tr>
<tr>
<td>Calculation of inherited or gifted property taxable value</td>
</tr>
<tr>
<td>Providing of social support for low income citizens</td>
</tr>
<tr>
<td>Providing of state guaranteed legal assistance</td>
</tr>
<tr>
<td>Estimation of initial sales or rental value of state-owned land</td>
</tr>
<tr>
<td>Estimation of rent of state-owned fixed assets (constructions)</td>
</tr>
<tr>
<td>Estimation of statistical indexes</td>
</tr>
</tbody>
</table>
### USE OF REAL PROPERTY MASS VALUATION

**DATA AND VALUES**

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calculation of fees for registration of real property and rights thereto</td>
</tr>
<tr>
<td>Calculation of notaries fees</td>
</tr>
<tr>
<td>Activities of insurance companies</td>
</tr>
<tr>
<td>Activities of bailiffs for estimation of initial action price</td>
</tr>
<tr>
<td>Banks activities</td>
</tr>
<tr>
<td>Providing market data to real estate professionals</td>
</tr>
<tr>
<td>For other state economic needs (estimation of losses, compensation, etc.)</td>
</tr>
</tbody>
</table>
REAL PROPERTY MARKET DATA AND ANALYSIS

Provision of real property market data by the Internet

- Provision of real property transaction data
- Calculation of housing price index
- Dynamics of real property transaction prices
- Value calculators
- Dynamics of real property sales
- Individual enquiries and analyses
- Administration of real property analytical applications

✓ DB of the Centre of Registers contains data about more than 2 million transactions which can be used for calculating values;

✓ The goal is to provide these data as quicker as possible and in the most appropriate form to the public institutions (Bank of Lithuania, Ministry of Finances, Statistics) and other specialists (banks, analysts, valuers, etc.).
• REGIA is a powerful and handy tool specifically developed for local authorities: their people, civil servants and therein operating businesses.
• Purpose of REGIA is to create favourable conditions for geography-based decision-making and to facilitate the exchange of information.
CLOUD PRINCIPLE

- All information created by a user, data recorded, uploaded documents are accumulated and stored in the REGIA servers and are accessible from any computer.
  - Easy to use. It is enough to have a computer with Internet connection.
    - All services are managed through the web browser.
REGIA OPERATIONAL SCHEME

Working in the service environment, the REGIA users can:

- create and manage their own data layers
- store and manage information or documents
- decide whether his data layer is publicly visible & who is entitled to use it
- services in the review mode are publicly accessible
BASIC DATA PLATFORM & OTHER INSTITUTIONS DATA

OTHER STATE REGISTERS AND MINISTRIES

National Land Service at the Ministry of Agriculture
Department of Cultural Heritage under the Ministry of Culture
State Service For Protected areas under the Ministry of Environment
State Forest Cadastre of the Republic of Lithuania
Ministry of Education and Science of the Republic of Lithuania
Fire and Rescure Department under the Ministry of Interior of the Republic of Lithuania

ELECTRICAL POWER & GAS DISTRIBUTION

MUNICIPALITIES
Within its managed data layer, the administrator can store and manage own data, information or documents, create and provide services based on geo-referenced data.
PUBLIC REGIA

- It is up to the user to decide whether his data layer is publicly visible and who is entitled to use it.
- REGIA services in the review mode are publicly accessible.
MOBILE MAPING E-SERVICES

- Services are intended to notify of problem
RECEIVING NOTIFICATION IN REGIA ENVIROMENT

• Location is displayed in REGIA map
• Notification contains: data on messenger
• problem description & photos
• date, time and place of sending
• Administrating of notifications
INTEGRATION OF VIRTUAL ADDRESS SERVICE AND REGIA

- REGIA map allows selecting an area and addresses therein
- Messages and electronic documents may be sent to the addresses selected
Thank you for your attention!

www.registrucentras.lt

www.regia.lt