REGISTER SYSTEM AND GENERAL PRINCIPLES OF REGISTER INTEROPERABILITY

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Received 1 December, 2010; accepted 23 December, 2010.

Abstract. Information technologies that could be potentially used for the development of register system are currently highly advanced, but their practical adaptation in terms of register management is limited due to the void in the legal regulation. Therefore this article particularly focuses on analysis of legal regulation applied for the register system, by highlighting gaps, limitations in the legal acts regulating this area and offering resolutions of the problems. Author of the article reveals content of the category “system” and provides various definitions for the term “system”. This article also includes various classification criteria for registers and revealing limitations of register classification. In addition underlining register system elements as well as general features of all the registers. The article lists register system as a complex, open, managable and purposeful system. Author concludes by stressing the importance of the register system interoperability and emphasizing that without it registers would be a “collection” of registers rather than a system.

Keywords: registers system, clasification of registers, registers interoperability, public administration.
Introduction

By seeking to provide high standards of living, high-quality public administration and industrial competitiveness, public and economic entities utilize data, which is vital for their operation and which is provided for public registration following the policy of State administration. State register is a topical subject while developing an information society and both State administration and provision of information service to society and business is hardly imaginable without it. Once the data of objects is registered agreeably to the established order it obtains legal effect and becomes an objective for a management of the State’s legal matters. Therefore there is a demand for establishment of the registers where data of the registered objects is collected and provided to the participants of the legal relations. Since register as a separate legal matter cannot exercise all of the functions required by the State administration and reveal its advantages, thus there is a need for registers to interoperate among each other, to supplement, integrate, develop, particularize and ensure each other’s efficiency. It must be ensured by the regulation of the register system that the existing links between objects in the real life would be implemented at the level of the register system. Functionality of the register system essentially and thoroughly requires interoperability. However, it is obvious that the problem lies behind the lack of implementation of an active interoperability in the register systems by actualizing data of related registers rather than exercising data transfer on demand. Consequently one the most fundamental tasks for Lithuania in the short run is to develop a system of registers interoperating among each other. The studies\(^1\) show that in order to apply legal regulation to the register system and interoperability a lot of attention has to be given to the information and communication technology as it provides the most advanced way to implement register system and interoperability.

Information technology appears to be a problem area as its fast development allows implementing new opportunities and improving register system and interoperability. The efficiency of register system for the most part depends on the utilization of information technology, which helps to provide information to the interested parties\(^2\). Register management process would be much more efficient by engaging information technology. This would allow saving time, decreasing workload of the personnel as well as minimizing the size of the medium for information storage\(^3\). Yet unlike information technology, legal regulation lags behind in this area. Such response to the technological challenges generates considerable differences in legislative procedures by violating the principle of the legal relationship regulation.

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The topicality of this issue is governed by the fact that the evolution of data management organized within State administration and its legal regulation till the appearance of information technology and after its implementation is much slower than the progress of information technology itself.

To achieve the aim there are formulated a few tasks:
– to describe the conception of the register system
– to analyse the problems of legal regulation of register system
– to explore the peculiarities of register system interoperability

The object of the article is registers system and register system interoperability in Lithuania.

The methods used in the article are:
– document analyse method was used to study the legal acts of register system;
– comparative method was used to compare different registers in Lithuania;
– summarize method was used to make any conclusions of the analysis of legal acts regulate register system in Lithuania.

Therefore one has to agree with A. Gasilionis and R. Kasperavičius claiming that “till there is no legislation based upon customary, traditional or any other laws regulating right and obligations related to ownership, we will not be able to define what we have”. Legal system must form conceptions and established legal tools to identify matter indicated in the conceptions. Electronic data management oriented legal regulation has not only to standardize data management for registered objects, but also to increase efficiency and improvement of this activity according to the technological potential.

1. Conception of the Register System

One of the priorities of the long-term economic development strategy of Lithuania until 2015 is development of the information society, importance of new opportunities for economy and society by engaging modern technologies. If State register system is inactive, fast and effective change in terms of provision of information service to society and business is hardly achievable.

The conception of system and systematic comprehension of knowledge of World have firstly emerged in philosophy more than hundred years before it was applied in other sciences and practically. Conception of a system is one of the most common conceptions in philosophy described as connection between objects by excluding them from the environment as an independent and solid derivative. The word system is of an Ancient Greek origin and means an integrated whole formed from components (from Greek

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5 Long-term economic developments strategy of Lithuania until 2015.
Dictionary of international words provides several meanings for the word “system”: methodical, correct arrangement, normalization, organization; [...] whole of parts linked by common function; [...] social order; whole of production units and institutions connected in an organizational way [...] Modern Lithuanian dictionary provides the following meaning for the word “system”: positioning, order, whole: [...] positioning order, principle of composition [...] derivative (by purpose, destination, operation, analysis approach, etc.) [...] order, adjustment [...] whole of production units and institutions connected in an organizational way [...] There is a big variety of systems and their descriptions, therefore systems have to be classified and grouped in order to distinguish their characteristics and attributes.

Theoretically we can conditionally analyze conceptions of register system and integral register system. We will analyze register system as a positioning of uniform objects and whole of elements considering linguistic meaning of the word “system” (positioning, order, and whole). Integral register system will be analyzed as a whole of units connected in an organizational way given the linguistic meaning “derivative (by purpose, destination, operation, etc.)”.

All of the elements comprising a register system have the following common attributes:

- Purpose – registration of objects;
- Destination – collection and providing register data to the users, exchanging data with other registers and information systems;
- Legal aspects – registers are established and function following the legal acts;
- Information aspects – registers are managed with information tools;
- Organizational aspects – registers are managed after the established organizational structure.

In essence each system is designed for connecting elements and their groups to uniform whole by using connections of the same nature. When grouped elements are combined with the help of such connections, a structure of the system is formed. The description of the structure is obviously identical to the description of the system. Therefore the main system’s aspect is analysis of the system structure. There is no point of doing the analysis if the structure and other parameters (such as processes) are unknown.

According to the elements comprising register system, characteristics of the registers and subject-matter of the register connections, register system is both information (technological and technical), legal and organizational system with its typical common hierarchical structure.

One of the subsystems of the register system is a juridical system of registers, which includes legal systems of the registers (principles of register establishment and operation, principles of register interoperability, legal acts regulating the principles of the

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9 Ibid.

establishment and operation of register system as a whole and legal acts regulating the establishment of individual registers), law enforcement institutions (courts) and institutions for pre-trial disputes and other elements of this system. Registers are exclusive information system as it has more regulated establishment, data generation, data provision and other procedures for register functioning. For instance, the establishment and functioning of the state register are determined by laws, state register regulations are usually approved by the Government and establishment procedure for information system is determined by Approval of Regulations for Establishment and Legalization of State Information Systems\textsuperscript{11} and regulations are approved by the institution, which demands to develop the information system. Data collection and other procedures are not regulated by the information system regulations. “Information system regulations are a document, which provides basic information about information system and showing necessity of information system”\textsuperscript{12}.

Register system is a complex system and as mentioned before it can be information (technical and technological), legal and organizational (social) system, wherefore it is necessary to apply different scientific methods and to have knowledge in different areas. Register system is a dynamic system rather than static and its context is constantly changing – registers are reorganized, integrated, liquidated, new registers are established and new connections emerge among registers.

Register system is open and related with other information systems since registers exchange information with internal and external information systems. Following Article 4 Article of Law on State Registers, the data of the registers is practicable within the information infrastructure of the Republic of Lithuania as well as in international registers. “Real connections among registered objects are expressed through integration of registers, information exchange among registers and between registers and information systems functioning in public authorities. Thus a common information system is developed that includes registers and information systems\textsuperscript{13}.

Register system is a manageable and purposeful system. Register system has a hierarchic organizational structure – institutions: Information Society Development Committee under the Government of the Republic of Lithuania where the development of the register system is being coordinated, high-level register management institutions coordinating and controlling development and operation of registers for their operating area meanwhile the register management institutions are linked with vertical connections. In addition, horizontal connections also exist among individual register management institutions (data exchange, data revision and other connections). Register system is a social system; therefore it could not function without purposeful human activity.

\begin{itemize}
\item \textit{Ibid.}
\item Meeting protocol the Government’s Strategic Planning Committee of the Republic of Lithuania, 09/04/2001.
\end{itemize}
2. Problems of Legal Regulation of Register System

Integral State register system is defined under the 3 part of the Article 2 of the Law on the State Registers. Integral State register system (hereinafter referred to as the register system) is known as a whole of the State registers, which are related to each other. Consequently we have three system components within this law definition: 1) system elements – registers; 2) relations among elements – links among state registers; 3) whole. The purpose(s) of register system for which it is developed is not defined within the Law on State Registers; meanwhile the purpose is indicated for individual registers only. Therefore register system functions and develops a complex system with its most important element being the registers.

According to J. Armour and M. J. Whincop there is a big variety of interests registered in the registers, which contain information not only about interest as such, but also about their limits. By analyzing the Law on State Registers of the Republic of Lithuania registers can be classified as comprising the following register system:

1. State registers:
   a) Main registers,
   b) Nominal registers.

2. Departmental registers.

Article 2 of the Law on State Registers has determined the following:

State register (cadaster) (hereinafter referred to as the register) – the whole of legal, organizational and technological tools intended to register objects defined as register objects by the laws, to gather, collect, process, systemize, store and provide natural and legal entities with registered quantitative, qualitative, geographical and other data and documents. Foreign scientists also emphasize the importance to gather, collect, systemize and store data, such as data of legal entities.

Departmental register – a whole of legal, organizational and technological tool intended to register objects determined by the State or Municipality institution or establishment and manage registration data for register object.

Hence, each register in the state register system is independent system containing several components: 1) elements – legal, organizational and technological tools; 2) the whole of these tools; 3) purposes with a system developed for them; 4) relations among system elements.

By analyzing the Strategy on Developing Integral System for State Registers include the following types of registers, which comprise a register system:

- Primary registers – registers where objects are registered for the first time; providing unique identification code; collecting registration data and transferring it together to the registers and information systems.

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15 Ibid.
Secondary registers – registers where additional data is registered by supplementing data collected in the primary register\textsuperscript{17}.

Such division is logically not correct as one of the principles of integral register system is registering data in the register only once and transferring data to the other registers through interoperability among registers (“interoperability – utilization of primary registered object data within other registers\textsuperscript{18}”), i.e., register is in all cases considered as the primary register if data is registered within it.

The aforesaid strategy also includes the following two register groups\textsuperscript{19}:

- **Main registers** – registers determined in the Law on State Registers of the Republic of Lithuania, where fundamental objects within the country are registered.

  It should be noted that list of fundamental objects was not defined in the strategy on developing integral system for registers.

- **Fundamental register** – registers, data of which are used in most of the registers, information systems and which constitute the basis of integral system for state registers.

In author’s opinion, both of these register groups are similar pursuant to their content. In the new edition of Law on State Registers adopted in 2004 there are conceptions of fundamental, primary and secondary registers given and main register conception is established. In the Article 2 of Law on State Registers the main registers are defined as registers the data of which is utilized in the other registers. With reference to the reciprocity law, other registers the data of which is not used in other registers should be considered as nominal registers. However, such conception is provided in the Law on State Registers and conception of “related registers” is given meaning “registers, which use their own data and data from other registers in order to define an object”\textsuperscript{20}. Nominal registers are related to the main registers since they use the data from these registers.

General systems theory also distinguishes two dual classes for systems: 1) systems with a core and 2) systems without core. Such classification has derived from the science of biology, yet some authors (such as L. Bertalanffy) also apply the classification to other complex systems (such as social systems, etc.)\textsuperscript{21}. Author of this article also believes that such classification can be also applied to the register system.

It is indicated in the Clause 33.8.1 of the Strategy on Developing Integral System for State Register that fundamental registers comprise the core of the register system and by their content fundamental registers are equal to the main registers.

Following the Law on State Registers there are two bases for the register system. According to the description provided in the Article 4 of the Law on State Registers the basis of register system is comprised of the following: main registers the data of which is used in related registers (Part 1 of the Article 4.), in the Part 2 of the Article 4 it is indica-


\textsuperscript{18} Ibid.

\textsuperscript{19} Ibid.


ted that the “basis of the register system is register interoperability” and in the Part 3 of the same article it is indicated how this interoperability is supported “by the regulations of related registers and following the order and conditions determined in data provision agreement to transfer, update or exchange by encoding data of the related register engaging unique identification codes for the objects as provided by the register”.

The main register is determined in the Article 3 of the Law on State Registers as follows:

1) Register for registration of legal entities;
2) Register for registration of natural entities;
3) Register for registration of real estate and its ownership;
4) Register for registration of addresses of objects with unchanging geographic location;
5) Registers for registration of legal acts;
6) Register for registration of asset and property rights mortgaging.

Law on State Registers distinguishes two bases of the register system – main registers and interoperability among registers. By systematically analyzing articles of the Law on State Registers one can draw a conclusion that the core of the integral register system must include main registers, but following the regulation of the law, registers can use data from other registers and thus they are also interoperating not only with main registers, but with any of them. Therefore, following the regulations of Articles 2 and 4 of the Law on State Registers, elements of integral state register system are the main ones and relate to the main registers at same time. By systematically analyzing description provided in the articles (2 and 4) of the Law on State Registers we can draw a conclusion that integral state register system is a whole of a main and other state registers, which are interdependent. However, following articles 2 and 3 of the Law on State Registers which provide description of integral State register system it not clear whether the departmental registers, which fall into different group of registers within the law are referable to the integral state register system or not? On the one part departmental registers usually use data from the main registers and thus relate to them and Article 3 of the Law on State Registers defines register interoperability as the basis of register system.

It should be noted that the conception of departmental register came into existence since the year 2006 only along with the new edition of Law on State Registers. The only difference between conceptions of the State and Departmental registers is the form of legal act which determines an obligation to register objects. If it is a law then it is necessary to develop state register and if register was established under the decision of State or Municipal institution (e.g., under order of a minister) it will be considered as departmental register. Such definition for state register does reflect the how important the State register is for State’s economy and social life and thus a register being defined by such only attribute and having a status of State register usually raises doubts.

For instance, register of persons seeking judicial promotion is of a limited departmental format, it is used by specific group of people and its data is not used in any other register, therefore this register could hardly be defined as a State register, but an obligation to register persons seeking judicial promotion is provided by the law of the Republic
of Lithuania, thus according to the Part 19 of the Article 2 of the Law on State Register this register should be considered as a State register. As A. Vaišvila has noted “definitive rules of law define conceptions of the law – reveal their essential attributes [...] Standard definition [...] of legal conception is obligatory in both developing and applying legal acts when this conceptions is utilized”\textsuperscript{22}. So, uncertainty of State register and departmental register conceptions can lead to their distinct interpretation while developing and applying legal acts, which define the establishment and operation of legal acts.

On 13\textsuperscript{th} of December 2007 National Audit Office stated in a report “Administration of State Registers”\textsuperscript{23}, that conception of the register is not defined in the Law on State Registers and recommended to improve legal regulation by clearly defining the conceptions for State and departmental registers as well as defining main register development principles (criteria) according to the number of registered objects, economic and social importance and other important circumstances.

Auditors have determined that one attribute (form of legal act) is not sufficient to define the conception of a register, which conditions State decision regarding the establishment of State or Departmental register. Institutions are obliged to develop registers under the law and failing to evaluate the number of registered objects as determined by the law, social importance and other important circumstances might lead to unexpected results:

1. Some institutions consider establishment of a register as an inexpedient and do not develop registers in order to save their resources due to the following reasons:
   - There are cases when individual register is not developed as its data is a part of other information system, thus its separation from the functioning system would require additional resources. For instance, Ministry of Agriculture points out that fishing fleet register should not be developed as it is a part of European Community fishing fleet.
   - Institutions make a decision to not develop registers determined by the laws due to the particularity of the registered objects and low number of the objects. Among such registers we can mention such as Semiconductor topographies register, register of persons seeking judicial promotion, Client’s performed money operation and transaction register, etc.

2. Other institutions seek to not violate the Law on State Registers as well as register development order set by the Government and do the following:
   - Initiate amendment of the law which determines registration, amendment of the object and does not develop the register when there is legal basis for it. [...] 
   - Initiates an establishment of the State register, although data is already processed within information system.”\textsuperscript{24}

\textsuperscript{22} Vaišvila, A. \textit{Teisės teorija} [Theory of Law]. Vilnius, 2000, p. 231.
\textsuperscript{23} State Audit Report No. VA-40-3P-16, 13/12/2007.
\textsuperscript{24} State Audit Report No. VA-40-3P-16, 13/12/2007.
3. Peculiarities of Register System Interoperability

While discussing about register system it is also necessary to analyze register interoperability issues. As mentioned before, the essence of register system is connecting elements and their groups (subsystems) in to a uniform whole by using connections of the same nature. “In order to reflect real connections among different categories by engaging information tools, the connection firstly has to be rendered through respective register interoperability. Register interoperability is implemented by utilizing uniform object identification, determining standards of provision and coding of the fundamental data, developing data provision and updating flows among the registers, determining error reports about notices registration errors and their order. Thus by performing their respective functions individual registers are connected into uniform system, which becomes the only source of unbiased information about country’s national wealth, its status and dynamics”

Therefore interoperability is a vital attribute for a register system since without it registers would be a “collection” of individual registers rather than a system. Hereafter register network should spread not only within Lithuania, but all across European Union, containing information about companies and other bodies within EU.

Article 2 of the Law on State Registers defines that “related registers are registers intended to describe object and also using data from other registers“. Strategy on developing integral system for registers provides definition that „related registers – interoperability between two primary registers or between primary and secondary registers, when data from one register is used on the other register“. There is no definition for register interoperability in the Law on State Registers and in Strategy on developing integral system for registers it is defined as usage of the primary object registration data in other registers.

One can ask what is the difference between categories “related registers“, “link among registers“ and “register interoperability“?

Interoperability among registers (connections among registers) is one of the essential attributes of a register system. Without this attribute registers would be a “collection” of individual registers rather than a system.

Modern Lithuanian Dictionary describes the word “link” as follows: “1) connection between individual elements, phenomenon and things. 2) In engineering – connection,”

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binding 3) binding, obligation. Duty, binding (J.Jablonskis) "28. Lithuanian Dictionary describes the word "interoperability" as a "both-way working".29

The word “interoperate” – „1) interact: each system is open and interacts with the environment; 2) to collaborate”29. Meanings for words “related” is not provided in Lithuanian dictionaries, yet Lithuanian Dictionary provides a meaning of the word “to relate“: 1) to bind (for cereals) 2) to bind, to connect, to merge, to integrate; 3) to make something common, to combine to a unity”.31

In authors’ opinion the words “link”, “interoperability” and “to relate” belong to the same process according to their content and linguistic meaning and are synonyms meaning connection of elements to a uniform whole.

Connections among registers can be implemented as follows: 1) automatically – through automatic interoperability and 2) providing data on a paper. For instance, in the case of Register of real estate and Property seizure acts according to the regulations of Property seizure acts data about seized property are transferred to the Real estate register on a paper. Thus in practice automatic register interoperability is implemented through automatic link among registers.

According to the general system theory connection among systems or system elements can be as follows:

- Basic (one-way).
- Combined (two-way with feedback).

Hence connections among registers (register link, interoperability) are always combined with feedback even in the case; when registers do not exchange the data and one of the registers provide data to the other register. According to the Part 6 of the Article 4 of the Law on State registers “once the institution, which manages a register notices errors in the data of related register, has to immediately inform the register management institution, which had provided the data [...]”.32

Summarizing up the aforementioned information and following the general system theory a definition of a register system can be formulated as follows: register system – a whole of State and departmental registers, related with technical, legal and organizational connections, which is based on main registers and is intended for registration of different objects, accounting and data exchange internally in the system and externally as well as information provision to the interested parties. The essence of the register system is connecting elements and its groups into a uniform whole by using connections of the same nature, so that individual registers could interoperate by performing their respective functions.

30 Ibid.
31 Lithuanian Dictionary, supra note 28.
Conclusions

1. Each register, which is a part of State register system, is an independent system that includes several components: 1) elements – legal, organizational and technological tools, 2) the whole of these tools, 3) purpose of the developed system, 4) connections among system elements.

2. Such division of registers to primary and secondary ones logically not correct as one of the principles of integral register system is registering data in the register only once and transferring data to the other registers though interoperability among registers, i.e., register is in all cases considered as the primary register if data is registered within it.

3. By systematically analyzing articles of the Law on State Registers one can draw a conclusion that the core of the integral register system must include main registers, but following the regulation of the law, registers can use data from other registers and thus they are also interoperating not only with main registers, but with any of them.

4. The only difference between conceptions of the State and Departmental registers is the form of legal act which determines an obligation to register objects. Such attribute as a form of legal act is not sufficient to define conception of register, which conditions decisions in relation to establishment of State or departmental registers.

5. By performing their respective functions individual registers are connected into uniform system, which becomes the only source of unbiased information about country’s national wealth, its status and dynamics. Therefore interoperability is a vital attribute for a register system since without it registers would be a “collection” of individual registers rather than as system.

References


Registru sisteMa ir bendr̆ėji registru sąveikos principai

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Santrauka. Dabartiniu metu informacinės technologijos, kurios potencialiai galėtų būti naudojamos registru sistemoje, yra labai pažengusios, tačiau jų praktinę panaudojimą, tvarkant registrus, stabdo teisinio reglamentavimo stygius. Todėl straipsnyje didelis dėmesys skiriamas registru sistemos teisino reguliavimo analizei, išryškinamas šių sritys reguliuojančių teisės aktų spragos, netobulumai bei siūlomai šių problemų sprendimo būdai. Autorius straipsnyje atskleidžia kategorijos "sistema" turinį, pateikia įvairius termino "sistema" apibrėžimus. Taip pat straipsnyje pagal įvairius kriterijus yra klasifikuojami registrai, atskleidžiami registru klasifikavimo trūkumai. Be to, atskirai pateikiami registru sistemos sudarantys elementai bei visiems registrams bendri požymiai. Straipsnyje registru sistemos išvadų kaip sudėtinga, atvira, valdoma ir tikslinga sistema. Darbo pabaigoje pateikiamos išvadas, kad registru sistemos reguliavimas turėtų būti išvirkiamas kaip viešųjų įstatymų sistemos dalis, o kurios būtų turėtų būti ypač pagrindinės registru sistemų principų sritės problemų sprendimo būdams.
t. y. visais atvejais registruojant duomenis registre jie yra pirminiai. Sistemiškai analizuojant Valstybės registru įstatymo straipsnius, galima daryti išvadą, kad integralios registru sistemos branduolį turi sudaryti pagrindiniai registrai, tačiau pagal įstatymo nuostatą registrai gali naudoti ir kitų registru duomenis, taigi jie sąveikauja ir su kitais ne pagrindiniais registrais. Vienintelis požymis, skiriantis valstybės ir žinybinio registro sąvokas, yra teisės akto, kuriuo nustatoma pareiga registruoti objektus, forma. Toks požymis – teisės akto forma – yra nepakankamas, apibrėžiant registro sąvoką, lemiančią sprendimus dėl valstybės arba žinybinio registro įsteigimo. Atskiri registrai, atlikdami jiems nustatytas funkcijas, sujungia mi į vieną sistemą, kuri tampa vieninteliu objektyvios informacijos apie šalies nacionalinį turtą, jo būklę ir dinamiką šaltiniu. Taigi sąveika yra vienas iš registru sistemos požymių, be kurių registrai nebūtų sistema, o tik atskirų registru „rinkinys”.

Reikšminiai žodžiai: registru sistema, registru klasifikacija, registru sąveika, viešasis administravimas.