

## STRATEGIC INFORMATION SYSTEMS IN REGIONAL PLANNING OF SLOVAK REPUBLIC

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### Abstract

*The aim of this paper is to present the reader with a basic insight to strategic intelligence utilization in regional planning. The paper analyzes basic definitions in the field of strategic intelligence, shows the intensity of utilization of various strategic intelligence methods in selected European Union countries and compares it to the utilization in Slovak republic and identifies some examples of strategic intelligence activities in Slovak republic. The paper also includes a description of the attitude of regional governments towards strategic intelligence application in Slovak republic. After taking all facts into account, the paper finally proposes a basic layout and activities needed for the establishment of a strategic information system in Slovak republic.*

**Keywords:** *foresight, planning, region, regional strategic information systems, strategic intelligence.*

**JEL:***R58 – Regional development planning and policy, R59 – Other.*

### 1 INTRODUCTION

Strategic intelligence is a discipline originally coming from the environment of military forces and counterintelligence. Nowadays this term is more and more often applied in areas beyond the original use, national and regional planning and development not excluding. Regions in their efforts to sustainably increase their competitiveness need more of new sophisticated methods in order to be able to gain competitive advantages over other regions, which ultimately are aimed on achieving sustainable economic growth. Methods of strategic intelligence are used to better understand the historical development paths of a region and to propose possibilities for the future direction of the region.

Application of strategic intelligence in the case of regional strategic planning means the utilization of various strategic intelligence tools by regional and local government bodies in order to improve their decision-making processes. These tools

represent a new methodological approach that allows the decision makers to be able to understand and take into account the specificities of each region such as the nature and degree of regional innovation systems, the learning process and willingness to experiment, as well as the structure of governance system. Using strategic intelligence tools can help to achieve political consensus on the direction of the region and promote reduction of regional disparities.

The search for innovations and their implementation are very often associated with a very complicated and time consuming collection and processing of extensive statistical data and the implementation of such data into a set of elaborate statistical and other methods. The decision making process is very often realized without any direct awareness or knowledge, but using methods that can be associated with the process of strategic intelligence. At regional level, individual steps of the innovation process are carried out at different levels of management, under the supervision of various departments, etc. It is therefore necessary in terms of regional planning to implement integrated regional strategic information systems that will fully involve each of the steps of the innovation process and help to efficiently manage the process as a whole.

Regional strategic information systems (RSIS) represent a clear benefit for regional planning. They help to identify regional restrictions and opportunities and while respecting the features of each region allow preparing development policies tailored to the needs and visions of each particular region. RSIS help to identify areas in which a region should invest time, effort and resources, help to focus on the strengths of the region, establish and implement effective forms of support for innovations and to create new or enhance the existing development policies in the region. The competitive advantage of regions is closely linked to the ability to manage regional resources and their effective allocation defined within an accurately prepared regional planning process.

This paper is therefore aimed at a simple presentation of the basis for strategic intelligence, its application in various parts of the EU in comparison to Slovak republic and deals with the application of strategic information systems and particular strategic intelligence tools in the conditions of Slovak republic. At the end, the paper tries to propose a system of priorities, measures and particular actions that should be taken in order to establish an effective regional strategic information system in Slovak republic.

## **2 REGIONAL STRATEGIC INFORMATION SYSTEMS**

Strategic intelligence in national and regional planning is becoming increasingly important especially in Europe and North America. However, the area lacks basic definitions and clear and generally accepted agreements on the use of the term “strategic intelligence”. Strategic intelligence in relation to policy development in general is a set of methods and procedures aimed at collecting, processing, analysis and dissemination of information necessary for preparation of policies, strategic plans and documents for international, national or regional (local) level. One of key aspects of strategic intelligence is that it is a special form of analysis required by decision makers

for the formulation of policies and plans for agency, corporate, national (regional) and international level (McDowell 2009).

A broader definition of strategic analysis shows that this is a political and planning tool for governments and NGOs, but also for business and individual users. Key issues concerning the very concept and definition of strategic intelligence are the depth of studies within this specific area, the development of futuristic and holistic explanations and projections and the efficient use of analytical results as a basis for proactive planning for the future (McDowell, 2009). Regional strategic information systems represent, due to links to strategic intelligence, a tool for regional governance that should assist regional policy makers in decision-making process and in preparing policies at regional level through the use of a combination of modern information and communication technologies and methods of strategic intelligence.

But, the application of modern complex methods and tools based on strategic intelligence principles in long-term regional planning is not easy. In many cases are such long-term forecasting methods and activities in regional development considered by decision makers to be superfluous and unnecessary. Sophisticated strategic intelligence methods are considered to be highly specialized methods that place greater demands on technology, staff training and education and additional funding. These additional aspects are in the opinion of regional governments not adequate to possible additional gains and do not present significant positive effects. As will also be described later in this paper, regional level practitioners and decision makers share a general opinion, that application of strategic intelligence in regional planning solves only problems which have no direct application in the daily operational needs of the region. Therefore, the regional governance level in Slovakia shows a hesitating approach in the application of strategic intelligence methods, as well as in the establishment and application of complex regional strategic information systems.

Taking into account the previously mentioned facts, a strategic information system is then an information system based on the use of procedures and instruments of strategic intelligence. When considering regional application, its aim is to provide information in regional decision-making process enabling to take into account the historical development and current state of each specific region in order to better identify development priorities and use them to more effectively design development policies and regional strategic plans. Regional strategic information systems can be viewed in a broader and more complex sense as a problem solving process using the gathering, analysis and interpretation of regional statistical data and assessment of possible future developments, threats, risks in the estimation of regional opportunities based on the data analysis. Regional strategic intelligence can therefore be seen as a specific form of research that addresses any problem that analyzes the risks and opportunities of a region in a way that helps develop programs and policies of regional planning.

For a better idea on how regional strategic information systems are perceived in the environment of European Union<sup>1</sup>, we can look at the definition stated by the European Association of Development Agencies (EURADA). EURADA<sup>2</sup> does not work directly with the concept of regional information systems, but uses primarily the term "regional intelligence". In this view regional intelligence is understood as a system that serves the same purpose as regional strategic information systems. According to EURADA, regional intelligence should take place between mid-term planning and long-term forecasting studies. Its aim should be to continuously enhance various elements of regional strategic planning, use regional statistical data to influence the performance of forecasting activities. Regional intelligence is focused on the effective and continuous re-allocation of tangible and intangible available regional resources based on historical developments of the region and by accounting for specific regional characteristics. The effective re-allocation is primarily based on optimal utilization of social, industrial and technological information and their impacts on future regional development. With regard to specific regional characteristics regional intelligence is able to pay more attention to increasing the attractiveness of a region and so attract talented people, help in the better integration of imported skilled workers, contribute to building loyalty of local companies, promote innovation activities and support overall economic and social regional development. A different document prepared by EURADA<sup>3</sup> defines regional intelligence as the capacity of a region to anticipate socio-economic changes and manage knowledge resulting from these changes for the purposes of new strategic policy development, know-how and innovation. All of these aspects will eventually enable the regions to become a competence center or a key contributor to the competitiveness of the existing regional companies, and thus contribute to the enhancement of the overall regional competitiveness. In other words, regional intelligence is according to EURADA a regional equivalent of private sector's benefits gained from the application of economic information systems, intelligence and surveillance methods, technology transfer, innovation and research.

So, why is it important to implement and effectively utilize regional strategic information systems and what are the benefits of such systems for regions and regional planning? The importance and reasons for development of regional strategic information systems can be summarized up into several key points:

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<sup>1</sup> The intention is to understand primarily the environment of the EU because the aim of the article is to analyze possibilities for implementation of regional strategic information systems in Slovak republic, which is a part of the EU.

<sup>2</sup> EURADA: Regional intelligence. Available online:  
[http://www.eurada.org/site/files/RDA/Regional%20intelligence\\_E.pdf](http://www.eurada.org/site/files/RDA/Regional%20intelligence_E.pdf)

<sup>3</sup> EURADA: Regional Intelligence and Competitiveness. Available online:  
[http://www.eurada.org/site/files/RDA/Regional%20intelligence%20and%20competitiveness\\_E.pdf](http://www.eurada.org/site/files/RDA/Regional%20intelligence%20and%20competitiveness_E.pdf)

- The need for development of data and information base on the factors and results of regional development,
- Increasing demand for spatial research, which has become a necessity for strategic planning and operational decision-making,
- The need for the application of interdisciplinary approaches to regional development - the outputs of the development process affects various sectors (economic, social, scientific and technical sectors),
- Development of information technologies that allow to shorten the analysis realization time, but also allow the use of a wide range of methods by which analysis can be realized,
- Complexity of processes determining regional growth and development - the development process involves a high number of various participants with their individual and social interests that have to be taken into account,
- The process of regional development is long-term, effects of decisions and factor changes will show in long-term usually after several years or decades,
- Changes in government and socio-political systems emerge with elections to the parliament, regional parliaments and municipalities - with changes of government usually come changes in attitudes and management of the development process at the national and regional level,
- Future development is not possible to plan in full detail, but it is necessary to determine basic tendencies for a longer period of time, which are most likely to occur and which will be promoted in particular regions. (Urbančíková; Černáková; Šoltés, 2011)

### **3 OVERVIEW OF PREVIOUS EFFORTS IN THE FIELD OF STRATEGIC INTELLIGENCE IN SLOVAK REPUBLIC**

This part of the paper is not dedicated solely to complex regional strategic information systems in Slovak republic. The reason for this is, that there are no present and were no such historical systems. Slovak republic is a country with a relatively short history compared to Western European countries, where strategic intelligence is a well-established category in regional planning and development processes. In terms of Slovak republic we will analyze efforts in strategic planning activities that used more advanced methods, i.e. foresight, forecasting, Delphi methods, scenarios, etc. We will analyze whether any such activities were realized and whether these activities used any advanced methods or were based only on simple statistical prediction methods.

To realize the above mentioned we will analyze the Global Foresight Outlook 2007 (Popper, 2007). This report was a part of activities carried out by the European Foresight Monitoring Network (EFMN). EFMN is a European Commission funded initiative aimed at exchanging and better understanding of foresight related activities all over the world. According to the Global Foresight Outlook Slovakia is in the

application of foresight activities in strategic regional planning in the last places within the European Union. Activity in the use of foresight methods in strategic planning indicates that Slovak republic is only followed by Cyprus, Latvia and Lithuania. Even among the region of The Visegrad Four Countries<sup>4</sup> is Slovak republic in the last place. Hungary, however, is ahead of Slovak republic only by one tenth of the activity rate measurement, which in practice may mean only a minimum number of projects or activities. In contrast, the Czech Republic and Poland are in foresight activities evaluated significantly higher than Slovak republic. We will analyze the position of Slovak republic in comparison with other selected countries of the European Union in more detail, namely by tracking the number of implemented foresight projects and by analyzing methods that were used in the implementation of these projects.

The following table (Table 1) shows numbers of foresight projects according to various levels of project applications. The countries chosen for the comparison to Slovak republic were selected based upon data availability and their relevancy from the view of EU environment.

**Table 1: Number of foresight projects in selected countries**

Country	Number of projects				
	national	cross-border	regional	international	European
<b>Austria</b>	6	2	1	0	1
<b>Belgium</b>	7	2	5	2	1
<b>Finland</b>	25	2	4	2	2
<b>France</b>	32	1	5	4	2
<b>Germany</b>	10	6	19	2	2
<b>Czech rep.</b>	3	2	-	-	-
<b>Hungary</b>	1	1	-	-	-
<b>Poland</b>	2	1	1	-	-
<b>Slovak rep.</b>	2	-	-	-	-

Source: (Urbančíková; Černáková; Šoltés, 2011)

As we can see from the above table, when comparing the countries of Western Europe with the countries of the Visegrad Four Countries (V4) we can see a clearly better position in the number of projects in developed Western countries compared to the V4 countries. Another difference is the level of project application. The V4 countries focus mostly on national foresight activities, whereas Western European countries are in this area oriented more on cooperation with other countries and on regional foresight projects.

<sup>4</sup> Czech republic, Hungary, Poland, Slovak republic.

The number of projects gives an insight on the quantitative side of the analyzed strategic activities. The qualitative side can be to some extent analyzed by exploring the structure of methods used in the realization of these foresight activities. The next table (Table 2) shows the structure of methods used in foresight activities in selected countries and in Slovak republic.

**Table 2: Overview of methods used in the realization of foresight projects in selected countries**

Country	Used methods (number of applications)						
	Delphi method	Expert panels	Workshops	Literature review	Scenarios	Brainstorming	SWOT analysis
Austria	6	6	6	6	5	3	3
Belgium	5	7	8	11	7	5	4
Finland	7	23	15	17	10	4	4
France		13	7	21	24	8	
Germany	12	13	8	20	14	9	
Czech rep.	1	4		3	3	3	4
Hungary	2	1	1	2	2	2	1
Poland	1	2		4	2	2	4
Slovak rep.				1			
	Environmental scanning	Interviews/ Surveys	Key technologies	Citizen panels	Trend extrapolation	Megatrend analysis	Essays
Austria	2	2					
Belgium	7	4					
Finland		3	2				
France		5	5		12	8	
Germany		6		4	6		
Czech rep.	1		2	1			
Hungary	1			1			
Poland	1		1	1			
Slovak rep.						1	1

Source: (Urbančíková; Černáková; Šoltés, 2011)

Western European countries use more sophisticated and complex methods, which are often based on detailed primary research (e.g., Delphi method, scenarios, etc.) or involve experts in the preparation and implementation of strategic activities (e.g. expert panels). On the other hand, the Visegrad Four (V4) countries focus in their activities in the field of strategic planning on simpler methods applied by using secondary data (e.g. literature review, workshops, essays). Slovakia shows an unflattering image in the field of strategic intelligence methods implementation. Only 2 projects of strategic intelligence were realized exclusively at the national level with no projects implemented at lower levels of government, which is in terms of overall development

and reduction of regional disparities a negative feature. Another downside of the situation is the composition of the methods used. Slovakia applied only the simplest methods that can be used in the foresight activities. The two projects were realized by using in one case the essay method, which was applied only in the case of Slovakia, and in the second case a simple extrapolation method - megatrend analysis.

The previous text analyzed strategic intelligence application in Slovak republic from the view of individual methods of strategic intelligence. Now, we will analyze the application of strategic intelligence from the viewpoint of complex strategic information systems. Research in this area shows, that there were no implemented comprehensive strategic information systems in Slovak republic. Lack of complex systems is justified by the fact that in Slovak republic strategic intelligence is a new discipline within which it is more possible to identify some pilot efforts and initiatives than a specific long-term implemented program. One of the factors that cause the described situation and the slow development of the analyzed area is the interdisciplinary nature of regional strategic information systems. This calls for the need for combination of experts from various fields of economic and social life, which also have substantial experience in the field of strategic intelligence and information systems. This is especially difficult in Slovak republic. At national level the following initiatives were realized, which were aimed in the direction of strategic intelligence systems:

- March 2002 - Slovak Academy of Science elaborated a Prognosis of Development of Slovakia until 2010 and proposed three possible scenarios. The organization elaborated also a version of “no integration” with three possible scenarios.
- In October 2004, the Forecasting Institute of the Slovak Academy of Science prepared several forecasts of the development and utilization of science and technology by the year 2015, which were applied to different areas within the tasks of State Research and Development Program,
- A team lead by Š. Zajac from the Forecasting Institute of the Slovak Academy of Science has dealt with technology foresight, developed scenarios for the development and utilization of science and technology in Slovakia and in the European research environment and prepared two scenarios – an optimistic and a pessimistic euro strategy.
- The Institute for Public Affairs (IPA) defined main problems at national level that are necessary to be tackled and subsequently elaborated forecasts for these problems. A most likely to occur, a risky and a desirable development scenario for all the defined areas – the economy, labor market and regional development, was prepared. IPA released two publications in 2003 - The Development Vision of the Slovak Republic in 2020 and Slovakia on the Road into the Unknown.



- Long-term Vision of Slovak Society Development, under the request from the National Government of Slovak republic, was prepared by the Slovak Academy of Sciences in cooperation with experts from other institutions in 2008, while the horizon for the vision was the year 2030. (Hudec, 2008)

So far, we analyzed examples in the field of strategic intelligence and strategic information systems at the national level. On regional level, the application of strategic intelligence is characterized by some initial efforts in strategic planning using more sophisticated methods. However, these do not represent any comprehensive regional projects aimed at strategic planning, but rather a sort of a necessary part required by various strategic regional innovation initiatives and documents. The priority impact area of these initiatives and documents is the field of innovation, which, however, is only one of the many areas monitored in the process of regional strategic planning. Some examples of regional strategic intelligence activities are:

- Study on regional foresight of the Trenčín Self-government Region,
- Prognosis of investment environment development of the Košice Self-government Region,
- Plan of economic and social development of the town PovažskáBystrica (proposes two possible strategic scenarios for the town economic basis development),
- Plan of economic and social development of the town Krompachy (proposes two scenarios of future development – realistic and desired). (Hudec, 2008)

An initial complex effort to implement a regional strategic intelligence system is the project Strategic Intelligence for Innovation Policy Enhancement (STRIPE) realized by the Faculty of Economics of the Technical University in Košice, Slovakia. The main objective of the project STRIPE was to analyze, elaborate and create environment to implement ways in which innovation policies and governance in the regions of Slovak republic can be enhanced. The main identified tool that could be effectively used in order for this objective to be achieved was strategic intelligence, its individual methods and information systems based on the use of strategic intelligence. Innovation policy preparation and implementation is, nowadays, often improved in many regions of the European Union through the application of strategic intelligence tools, i.e. technology forecast and foresight, technology assessment, policy evaluation exercises, etc. These activities have yielded valuable results and have helped decision makers prepare efficient and tailor made regional policies and strategic documents. That is why these activities were an inspiration for the STRIPE project. The projects' outputs include many studies, publications and dissemination activities (seminars, workshops, conferences, etc.) in the field of regional strategic information systems. But the main output is a web portal of strategic intelligence for regional decision makers. This represents a web page accessible by managers from different levels of regional government in order to easily and online access tools of strategic intelligence and use

them in the process of mid-term and long-term strategic documents preparation. At this time, the web portal is in its testing stage and in the near future will be made available in full access to regional governments.

#### **4 REGIONAL GOVERNMENT ATTITUDE TOWARDS STRATEGIC INTELLIGENCE**

To analyze the application of strategic intelligence tools and strategic planning systems on regional level in Slovak republic, namely the level of self-governing regions, we will look at the questionnaire survey realized under the STRIPE project focused on the area of setting regional strategic goals and preparation of strategic documents and plans. The questionnaire survey was conducted through personal interviews with employees of each self-governing region in Slovak republic chosen to represent the departments of regional planning, strategic operations, innovation, forecasting, etc. The questionnaire included questions on the application of regional strategic information systems and the use of strategic intelligence tools in the preparation of long term strategic regional goals.

##### **4.1 Structure and impulses of regional strategic intelligence**

An interesting outcome of the questionnaire was, that in the case of almost all of the approached self-governing regions in Slovak republic the main initiators for establishing and revision of strategic regional objectives are the Departments of Regional Development. These departments, however, are mostly focused only on intra-regional needs and objectives without involving a large number of external partners and/or consultants. In case of some regions (Košice, Prešov, BanskáBystrica and Nitra Self-governing Regions) are these departments extended by incorporating various advisory boards and committees into the process of setting strategic regional objectives. In these self-governing regions the participation of external partners is at a high level. Cooperation takes the form of working and expert groups formed of both representatives from the regional government, as well as experts from the academic area and external consultants. However, not all the regions show the same level of external partners' participation. Regions, whose answers show a low external partners participation, identify as the main reason for this fact the lack of interest of external partners (mainly from private business sector) to participate in the strategic process justified by low motivation of these experts since there are no real and quantifiable benefits to the experts.

The respondents' answers also show what the main reason to adjust or correct strategic goals of the region is. The main factor is internal and is directly linked to the regions obligation to prepare and implement the regional Plan of Economic and Social Development. This initiative is more of an essential and obligatory part of an overall strategy for development of the self-governing region, rather than a kind of self-identified need of the regional government. Also this fact shows one of the aspects of a low application of strategic intelligence and its tools in Slovak republic. Since the

regional government is, according to the answers of its employees, focused mainly on the fulfillment of its obligatory duties and does not seek for new and innovative ways how to enhance strategic planning, the need for strategic intelligence is not high.

#### **4.2 Methods**

The questionnaire also contained questions aimed to identify the methods used by regional governments in the process of setting regional strategic objectives. The following short overview provides information on the most applied frequent methods:

- Comparative analysis,
- Expert analysis and expert estimations,
- SWOT analysis,
- Trend analysis and trend prognosis into the future.

These are mostly simple statistical methods used to analyze and evaluate past developments and current state, compare this state with other self-governing regions and propose simple projections to determine the direction of the monitoring indicators into the future. Only in the case of Žilina Self-governing Region several more sophisticated methods were mentioned among the methods applied into the strategic planning process. These methods included forecasting methods (foresight, forecast and ex-ante evaluation), impact methods (impact assessment, community assessment and ex-post evaluation) and other methods (Balanced Scorecard method of scenario planning, roadmaps, CAF - Common Assessment Framework).

Implementation of only simple methods can be accounted to the low level of strategic intelligence application and to the above mentioned fact, that regional governments are mainly interested to fulfill their obligatory duties and do not search to implement more sophisticated and complex methods. However, the case of the Žilina Self-governing region shows that such more complex methods can be realized. It would be very interesting to analyze the real impact on regional development after these methods are successfully implemented and finished.

#### **4.3 Barriers of strategic intelligence**

An important area of the primary research conducted under the STRIPE project by the questionnaire survey was the opinion of self-governing regions on the barriers of strategic intelligence application in the strategic planning process at regional level. The findings show the following major barriers:

- *Modern forecasting methods are not needed*

Several respondents' answers indicate that the missing comprehensive strategic information systems and strategic intelligence methods support their redundancy. The self-governing regions are in no way forced to use modern strategic planning methods by any senior government level. But maybe this is only due to ignorance

or inexperience of regions in the area of strategic intelligence. It is therefore important to first carry out awareness activities in this area, but also promote the cases of best practices and their positive impact on the regional level.

- *Training and lifelong learning of strategic intelligence personnel*

Modern and sophisticated methods require trained and experienced personnel. The regional level is missing such personnel and it would be necessary to create this group of workers at the level of self-governing units (by recruiting new staff or retraining the existing). This represents additional financial burden and is time consuming for regions.

- *Missing data*

According to the self-governing regions, the data should be monitored and gathered at one place (institution, department, etc.). Most of the regions identified the need for extensive regional data sets that would be sufficient for analytical purposes. These are the following:

- Data on the level of comparable EU regions,
- Complete set of data on the NUTS III and NUTS IV levels,
- Comparable analysis and data on other self-governing regions.

## **5 PROPOSAL OF STRATEGIC INFORMATION SYSTEM IN REGIONAL PLANNING OF SLOVAK REPUBLIC**

The priority aim of both national and regional government levels must be to create a uniform and for all levels of governance generally applicable system consisting of bodies with competences for the creation, implementation and monitoring of strategic information systems in Slovak republic. This will create appropriate conditions for the implementation of strategic information systems at the level of country as a whole. The reason to not only consider regional level, which is the primary target of this paper, is that it is the implementation of a new approach to strategic planning that is not possible to apply at regional level without the existence of an effective and comprehensive system on the country level. This way it will be possible for the regional level of governance to operate in a suitable environment for application of strategic information systems based on strong recommendations of expert advisory bodies, as well as the consent and recommendations of superior governance levels.

At the national level, a special unit in the area of strategic information systems at central government level should be created. The task of this unit should be the coordination of activities in the field of strategic information systems in the area of the Slovak republic as a whole. It will be the highest authority of the country for the target area, will set priorities for the national level and determine the role of regional bodies in strategic information services, so that a regulated development of strategic information systems in Slovak republic can be achieved. At the regional level, for each

self-governing regions to complement the overall system, a unit in charge of strategic information systems will be created. Overall there will be 8 units of strategic information systems at the level of self-governing regions. Regional departments of strategic information systems will support the main body of strategic planning in the region. Their task will be to prepare and carry out activities in the field of application of strategic planning methods, administration of financial instruments allocated to the area of strategic information systems, educational activities and other activities. The role of regional government should also be to create expert advisory bodies at each of the regional strategic information systems units. Expert advisory bodies, in the form of expert groups, will represent interdisciplinary bodies, whose task will be to present complex interdisciplinary advice for decision making, particularly at the stage of development and implementation of strategic information systems. It is expected to incorporate experts from such areas as statistics, economics, social sciences, engineering disciplines, and others.

Strategic information systems also require a sufficient set of statistical data. It is therefore important to modernize the existing infrastructure for collecting and reporting of statistical data and create opportunities for education and training of human resources in preparation for work in the area of strategic information systems. On one hand, government level must support technological infrastructure necessary for the implementation and development of strategic information systems, and on the other hand has to promote education and training activities to develop skills of human resources involved in strategic information systems. This way the government level can effectively use infrastructure and human resources in the process of creating and implementation of strategic information systems. Activities in this support area will consist mostly of computer technology development, which in return will shorten the time for data processing and production of necessary analytical outputs and will contribute to the capabilities of a wide range of methods and procedures through which statistical data can be used in strategic planning. By implementing appropriate activities also knowledge and skills of human resources must be developed. Especially in the case of personnel directly employed in strategic planning or in the case of people interested in working in this field. This will be very helpful in developing qualified human resources in order to create the necessary critical mass of workers in the field of strategic information systems.

For effective functioning of strategic information systems it is necessary to promote their importance and positive impacts on planning at both national and regional levels. Promotion activities in the area of strategic information systems should be designed to popularize strategic intelligence initiatives and promote them as a priority among executives with decision-making capabilities in public administration, but also popularize the field of strategic intelligence among the general public. A positive perception of strategic information systems and promotion of their impact on developing countries can provide an appropriate basis for possible initiatives in the field of strategic intelligence systems and their application. On strategic information

systems is public, state and regional administration as well as business community in general very poorly informed. Effective dissemination of information on the implementation, promotion, development and results of strategic information systems to all actual and potential stakeholders is a critical factor for the general awareness enhancement on the need of such systems and is important for an effective functioning of regional strategic information systems and for obtaining long-term political support for their implementation and development.

Considering all of the above mentioned facts, it is important to develop and implement pilot strategic information systems at national level and establish rules for the use of strategic intelligence methods at both national and regional level. The challenge is to create a set of legal documents and regulations and propose necessary actions, which will serve as examples of strategic planning in the form required for the development of strategic information systems in the Slovak Republic. The following table shows basic priorities, measures and activities needed for the establishment of an effective and generally applicable system of strategic information systems in Slovak republic.

**Table 4: Set of proposed priorities and activities for the establishment and implementation of a regional strategic information system.**

<b>Priority 1: Establishment of an official structure of strategic information systems implementation and control bodies</b>
Measure 1.1: System of strategic intelligence bodies in Slovak republic Activity 1.1.1: Establishment of a Unit for Strategic Information Systems on national level Activity 1.1.2: Establishment of 8 Units for Strategic Information Systems on regional level (level of self-governing regions)
Measure 1.2: Establishment of strategic information systems advisory boards at each level of governance
<b>Priority 2: Support of infrastructure and human resources in the field of collection, publishing and processing of statistical data</b>
Measure 2.1: Modernization of information and technological capacities of the Statistical Bureau of Slovak republic
Measure 2.2: Support of human resources training in the field of strategic information systems. Activity 2.2.1: Seminar on strategic information systems Activity 2.2.2: Workshop on strategic information systems Activity 2.2.3: Support for exchange programs and internships in the field of strategic information systems
<b>Priority 3: Popularization and promotion of strategic information systems in Slovak</b>

<b>republic</b>
Measure 3.1: Promotion of strategic information systems
Activity 3.1.1: Organizing an annual conference on strategic information systems Activity 3.1.2: Internet and media promotion
<b>Priority 4: Implementation of strategic intelligence methods and strategic information systems</b>
Measure 4.1 Establishment of a pilot strategic intelligence system on the national level in Slovak republic
Measure 4.2 Establishment of a system for the application of strategic intelligence methods on regional level
Activity 4.2.1 Obligatory elaboration of multiple scenarios for strategic goals and future developments in strategic and long-term documents and programs Activity 4.2.2 Obligatory forecasting in regional strategic and long term documents

Source: Own.

## 6 CONCLUSIONS

The aim of the article was to provide the reader with a simple insight into the strategic intelligence application in regional planning through implementation of regional strategic information systems. Strategic intelligence application is supported by efforts of regional and national governments to promote new ways how to continuously increase the competitiveness of a country or a region. Many developed economies are increasingly implementing tools of strategic intelligence (i.e. technology foresight, technology forecasting and assessment of social impacts of technological development, etc.). These methods allow more thorough and effective application of strategic planning on the basis of evaluation and forecasting of the impact of proposed measures. However, research shows that Slovak republic is in the field of strategic intelligence far behind developed Western European countries and strategic planning in Slovak republic is based primarily on simple statistical and mathematical methods. Analysis of the strategic intelligence methods in the form of foresight projects shows only in the case of Slovak republic the utilization of methods such as essays or trend forecasting. Other compared countries show orientation on more sophisticated methods such as Delphi method, Scenario planning, etc. It is therefore very important for Slovak government levels, especially the regional government level represented by self-governing regions, to increase activities in strategic planning by implementing strategic intelligence in the form of complex strategic information systems. This can improve the competitiveness of Slovak regions and help to decrease regional disparities in comparison to Western European regions.

Based on the research of STRIPE project, the article also showed the very important opinion on strategic intelligence systems from the viewpoint of regional

government in Slovak republic. The results show a very low application of more sophisticated planning methods in regional strategic planning, existence of no pilot efforts of complex strategic information systems and identify the most frequent barriers of such systems as stated by regional government employees responsible for strategic planning. But the most important result may be the unpleasant attitude of regional governments towards modern planning methods. The questioned employees stated no sophisticated and complicated planning methods, including strategic intelligence methods, are needed on regional level. The regional level performs only obligatory duties and in most cases tries to copy priorities set on superior levels of governance in order to be compatible and most of all eligible for public funding.

After analyzing the current state and past efforts in the field of strategic intelligence as well as analyzing the strengths, weaknesses, opportunities and threats of Slovak republic environment in relation to strategic intelligence application, the paper proposed main priorities, measures and actions needed to develop a complex strategic information system in Slovak republic. This system was proposed for the Slovak republic as a whole, because it is believed, that regional strategic information systems cannot be applied independently in an environment, where there are no previous experiences with such systems.

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