University of Economics in Bratislava
Faculty of Business Economics with a seat in Košice

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ACTA OECONOMICA CASSOVIENSIA

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THE MARKETING OF HIGHER EDUCATION SCHOOLS – THE PROCESS OF BUILDING RELATIONS WITH STUDENTS

MARKETING VYSOKÝCH ŠKÔL – PROCES BUDOVANIA VZŤAHOV SO ŠTUDENTMI

Andrzej SZROMNIK – Elżbieta WOLANIN-JAROSZ

Abstract
In the following elaboration the process of building positive relations between students and a university was introduced. It is based on a few main elements: trust, quality, satisfaction, building values and commitment. The use of marketing strategy which include the following process, will definitely contribute to strengthening position of a university on the contemporary educational market.

Keywords: the marketing of higher education schools, building of relations, students

Abstrakt
V príspevku je prezentovaný proces budovania pozitívnych vzťahov medzi študentmi a univerzitami. Je založený na niekoľkých hlavných prvkoch: dôvere, kvalite, spokojnosti, hodnotách a záväzku. Využitie marketingovej stratégie, ktorá zahŕňa nasledujúce proces, určite prispeje k posilneniu postavenia univerzity na súčasnom vzdelávacom trhu.

Kľúčové slová: marketing vysokých škôl, budovanie vzťahov, študenti

Introduction

In 1990s, not only was it the crucial moment for our economy but it was also the time of changes on the market of educational services. The changes began when the bill on higher education was established on 12 September 1990. Thanks to this law many private, higher education schools were created. They were also given favourable operating conditions. They started developing very dynamically since 1991. it consequently led to a growing and constantly intensifying competitive struggle among public and private universities. This situation and gradually decreasing number of potential students forced schools to accept the marketing rules, necessary to university management.

Education was seen and judged in the categories of a commercial product service. From that moment a university was not only an educational institution but also it was becoming "a service company", which in order to survive, must take care of its recipients of offered services – the students.

The aim of the following publication is to discuss the process of building proper relations between higher education schools and students. A student is someone who needs to be noticed and the most importantly striven. American economists J. Thomas and R. Gupta claim that a student was in a passive chain of values before and now he or she became an active participant of the value creation process who make prudent choices[1].

1. The arguments for and against of introducing marketing rules in higher education schools.

The adaptation of marketing orientation in the university marketing life caused polemics – either to use the marketing at higher education schools or not?

The opponents of using marketing activities at universities in order to attract potential students, claim that they are not ethical and pose a threat for academic values. Moreover, their apprehensions concern the autonomy of a university, the threat for intellectual freedom and the reduction of the role of a higher education school to producing a popular and easy in consumption educational service.

On the other hand, the followers say that the marketing only plays the role of supporting the realization of the process of the aims specified in its mission. They think, that by using marketing methods and rules of action, a chance for the decrease of alienation is given to a university. It also restricts the danger of its development in an undesirable direction.

It should be emphasized that a student is a very demanding "client" who has defined views and the established system of values. The period of studying is treated by a student as an investment which is expected to bring profits at later professional work. It is not easy to persuade a young man to the fact that "you are right". Before they make their decision concerning the choice of university, they collect information about educational market and then, they thoroughly judge it, mainly by taking their own requirements and expectations into consideration.

Therefore, very crucial is to manifest your own market identity and to show these academic values which are quintessence of teaching and scientific activities given to a university. Meanwhile, they are looked for by potential students. It is also worth mentioning, at this point, about the results of the surveys conducted at higher education schools which concern sticking to the rules and marketing instruments by universities[2]. It turns out that over 90% of

[1] J. Tjhomas, R. Gupta, Marketing Theory and Practice, Evolving Through Turbulent Times, "Global Business Review 2005", No. 1.

[2] Angelika Pabian, *Student jako beneficjent działań promocyjnych szkół wyższych (A student as a beneficiary of school promotional activities),* Marketing and Market 2008, nr 8.

the institutions in which students were questioned, confirmed the importance of the elements from the point of view of market actions of higher education schools. Among the reasons for undertaking marketing activities (especially promotional) the following were the most often mentioned: the competition in the sector, the necessity of informing potential students about educational offer, shaping a proper image of the institution or demographic depression.

2. Student as a client of professional services

One of the basic dilemmas connected to introduction of marketing orientation to the university is the problem of treating students. There are four different concepts which define the position of a student in a higher education school in economic literature: a student as a product, a student as a buyer, a student as a client and a student as a partner of a higher education school[3].

In the beginning, controversy among economists concerned two orientations: on a client and on a product. Nowadays, understanding a student as a product seems to be disappearing in favour of the concept according to which a student should be treated as a partner. The concept "a partner" is understood in two ways: firstly, as a position in a company, in which except "junior partners" there are also "senior partners", defining the hierarchy in a firm, secondly, in the context of marketing, relation as a person participating in a given process- for example in the process of education with other subjects from around the university. The concept "partner" means a person, who is treated equally but does not take part in an educational service[4], mainly because there is a big gap between the knowledge and experience of students and universities- especially lecturers who represent them. Even though, universities and students are equally responsible for the effect of an educational service, schools bear bigger responsibility. Their tasks are to bring up and educate (providing proper education and conditions to assimilate it). If a student undergoes this process it depends only from him or her personally.

In turn M.J. Amstrong suggested a definition of a student as a client and clearly identified inaccuracies in defining a student as a buying one[5]. A buying student, according to his definition, is someone who personally buys a product and depends on their own judgment of this purchase. While a client is a person who demands professional advice and help during buying[6]. Such distinction refers to professional services mainly. In professional services, clients are not "masters" because they do not have any professional knowledge to judge

[3] A. Drapińska, *Kierunki działań marketingowych w szkole wyższej*, Marketing i Rynek 2006, nr 12
[4] Słownik Języka polskiego, PWN, www.sjp.pwn.pl
[5] A. Drapińska, op. cit.
[6] M.J. Amstrong, *Students as Client*: *A Professional Services Model for Business Education*, Academy of Management Learning and Education 2003, nr 4

services. They are not often able to specify their own expectations. They must rather depend on specialized knowledge of service providers. Moreover professionals can and even should influence on what customers expect (table 1). The same concerns the rule that "the customer is always right". In case of professional services which include educational ones, offered by higher education schools, clients have the right to express their needs and expectations as far as it is possible the requests of customers should be complied with. The service provider has also the right to correct those needs by relaying on their specialized knowledge (so called educating a client).

Table 1
The differences in behaviour between buyers, customers and partners.

Customers	**Clients**	**Junior partners**
They are kings	They have a financial power but not specialized	They do what their supervisors (senior partners) tell them to do
They are always right	They can be wrong, they need support	They can be wrong, they need support
They base on a guarantee	They expect competence and specialized knowledge	They do not have any guarantee
They can treat the staff of a company badly	They stick to the accepted standards and rules	They are expected to follow accepted standards and rules
They can buy everything they can afford	They must be accepted by a professional and they must follow the tips	They must be accepted by senior partners and execute commands
Their needs must be satisfied and they require a lot of patience	Their basic needs are satisfied (the preparation to function on the job market, the intellectual development)	They help a company to achieve its goals
They provide profits (also by their donors	They provide profits (also by their donors)	They are paid to attend to customers who bring profits
They take a service and walk always satisfied	They take a service and walk away satisfied	They provide services and they want to stay in a company

Source: M.J. Amstrong, *Students as Client*: *A Professional Services Model for Business Education*, Academy of Management Learning and Education 2003, nr 4

To sum up the above contemplation, it can be agreed with Amstrong that a higher education school cannot satisfy all the students` needs and demands. The marketing instruments and rules can only support managing a university.

Satisfying students` expectations, who are clients, can only take place when the expectations are compatible with the strategy aims of higher education schools. The schools must take into account the businesses of other subjects from the surrounding area such as society, business , etc. Hence, for the higher education system a special marketing concept should be developed. It ought to be different from typical ones, used in marketing material goods or other types of services. The specificity of marketing should come from a complicated nature of higher education which is similar to a professional service. This concept ought to be taken mainly from professional marketing services. It is necessary to mention at this point that in professional marketing services, the emphasis is put on the need of educating a client, which among others, lies in the need of explaining, informing and translating the client the educational process of services and his or her role in it.

The need results from a big disproportion of knowledge and experience between a provider and a recipient which takes place in professional services.

3. The process of building relations between a higher school and students.

The starting point in all marketing conceptions of higher education schools is the need to educate a student. Educating is the element of managing expectations, which are one of the most essential marketing actions of a university. It rests on:

- doing a research, getting to know and monitoring the expectations of customers;
- educating – influencing the students by explaining, communicating, informing and realizing;
- adapting to the expectations by looking for compromises between the requirements of the students and the aims and strategies of the university[7].

Management of the expectations plays a very crucial role in the process of building relations of a higher education school with students. By discussing this process in detail it must be emphasized that its most important element is trust (figure 1). As mentioned by A. Drapińska[8], building trust between a provider and a recipient is necessary, especially in the situation of uncertainty and risk, in which there are customers of professional services. It results from the lack of professional knowledge of clients and from the crucial influence of professional service on their lives (the choice of what to study influences the future life of a given person). The basis for building trust should be respecting ethical standards adopted, even informally, in the profession.

[7] P. Stach, J. Bąk, *Na ścieżkach zadowolenia i lojalności – poszukiwanie modelu w kontekście uczelni (On the paths of satisfaction and loyalty-searching for the model in the context of a university)* , Marketing i Rynek 2009, nr 6

[8] A. Drapińska, *op. cit.*

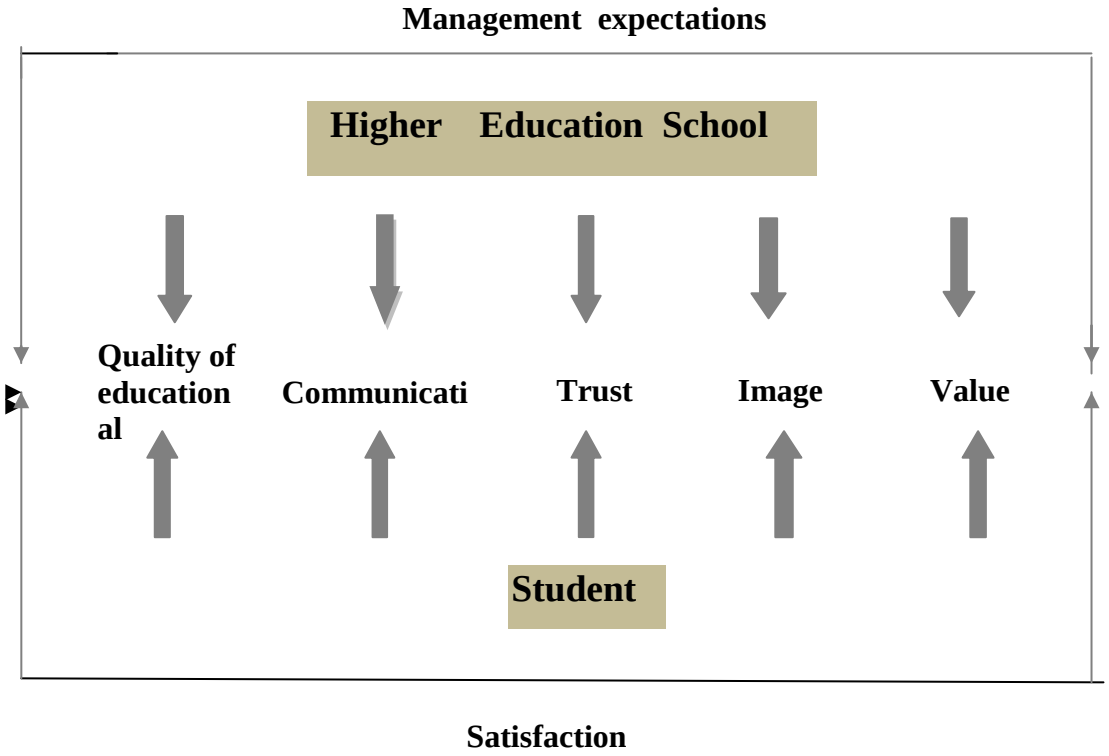

Figure 1
Building relations between Higher Education School and students.
The source: own work

Another important issue is communication and dialogue which should lead to understanding between a provider and a recipient. The importance of this elements results from a very big role of a client in a common value creation. The creation of values should be a process based on two-sided communication between a university and a student who is created by interactions and dialogues[9]. There are key elements of marketing relations. Two-sided communication means a process in which a university , not only sends certain announcements, but also expects information in return. On its basis changes are introduced and the process starts from the beginning. However, the relation is also formed by interactions containing individual acts, episodes and sequences which take place during the service process.

During interaction, a provider, represented by the personnel, technologies, systems and know-how has contact with customers[10]. Ch. Gronroos stresses the fact that interacting elements build relations by influencing the value which is created[11]. It means that a university
should shape the relations by creating the values in every "act" and "episode" of the service process. At the moment when the planned communication and

[9] Ch. Gronross, *The Relationship Marketing Process: Communication, Interaction, Dialoque, Value*, The Journal of business & Industrial Marketing 2004, No. 2
[10] Tamże.
[11] Tamże

interaction are consistent, integrated with each other, we deal with a relational dialogue. It is important, though, to plan thoroughly, not only communication but also every act and episode which consist of relation.

The quality of an educational service has also a special meaning in creating relations. It is the result of collision of expectations and the service received. The final result will be therefore, influenced by not only a service provided by a university but also the shape and the level of students` expectations. A university should influence and shape these expectations. It should also develop a detailed plan of creating quality based on students` expectations, in the dimension of technical quality as well as functionality. It must be stressed that as in other professional services as in education, the technical quality (the most importantly the knowledge) is very difficult to judge for a customer as their knowledge is not big enough. That is why the aspect of functional quality is very important (the way in which the knowledge is transferred, the service), which in a short period of time is easier to judge for students.

It is worth mentioning at this point, that the higher education school's service is characterized by the unique influence on its quality, as well as the teaching staff and the students themselves (their abilities, willingness to learn, attitude, diligence, etc.). Internal marketing (which influences the personnel) and the recruitment of "the right" candidates (not only their quantity but also quality) play a major role here.

The starting point, however, is to build proper relations with the students by shaping their satisfaction from the service provided. It is one of the necessary conditions to build relations. The satisfaction is emotional reaction to the comparative processes started by clients. The relations rely on the juxtaposition of customers` experiences and feelings after the consumption of a given product or a service with expectations, individual norms or a certain model evaluation[12]. the shape of oral transmission depends on the level of satisfaction and what comes after that – reputation and image of a university. The fact if the relation will be broken or not also depends on the level of satisfaction. In case of higher education schools, creating satisfaction is very complicated because it concerns a lot of aspects of providing a service (for example students participate in different classes and lectures, they come into contact with academic personnel – with teachers and administrative staff. It is very extended
in time (so the level of satisfaction can change). Undoubtedly, it is crucial to constantly monitor the level of satisfaction and taking actions to rise this level.

It is worth mentioning at this point that P.Kwan and P.Ng separated seven groups of the factors influencing the students` satisfaction achieved by using the educational service[13]. These are:

[12] N. Hill, J. Alexander, Pomiar satysfakcji i lojalności klientów (The measurement of satisfaction and loyalty of the clients), oficyna Ekonomiczna, Kraków 2003, s. 34
[13] W. D. Neal, Satisfaction Is Nice, but Value Drives Loyalty, Marketing Research 1991, No 1

- curriculum subjects in the study plan,
- the interest of a university of a student, their health, personal and educational development,
- the facilities offered to students during the course of studies,
- the method and reliability of assessment of students,
- the quality of teaching materials which are available,
- the social and cultural activities of universities,
- the environment of the students, social and scientific contacts,

The fields mentioned should be the object of research paying attention to shaping satisfaction, especially the expectations of students.

It should be stressed that satisfaction, to a large extent, depends on the values, which a student receives. The concept of values is the basis of marketing relations, and the ability of institutions to provide their customers the right values is the foundations to create long-term relations with clients. The values for the client consist of benefits (for example knowledge, prestige of the university, teaching conditions, additional services offered by the university) and costs borne by students (for instance fees, effort and time devoted to studying, the need to move house). The more the benefits outweigh the costs, the greater the value the client receives. Customers in their choices always want to obtain larger values, which is the most important to them.

The issue of co-creating the values by students is also worth mentioning. Every university ought to know their students and which elements form valuable benefits and costs for them; which of them are more important and which are less. It should also look for the ways to rise the value (by increasing the values or decreasing the costs). Just as the relationship is formed in time, the creation of values should be treated as a process.

The last element in the process of building relation of a higher education school with

its students is the oral transmission. It is created by the present clients and it influences the university's image in the surrounding area and getting new customers. D.D Gremler, K.P Gwinner and S.W. Brown introduced the model illustrating individual elements which influence positive oral transmission (figure 2). The first element is – perfect knowledge. It means that the student is confident and he, as well as his or her needs, are well known to the university's personnel. Its source can be information which comes from the students themselves, but also observations of them and their behaviour during the service process.

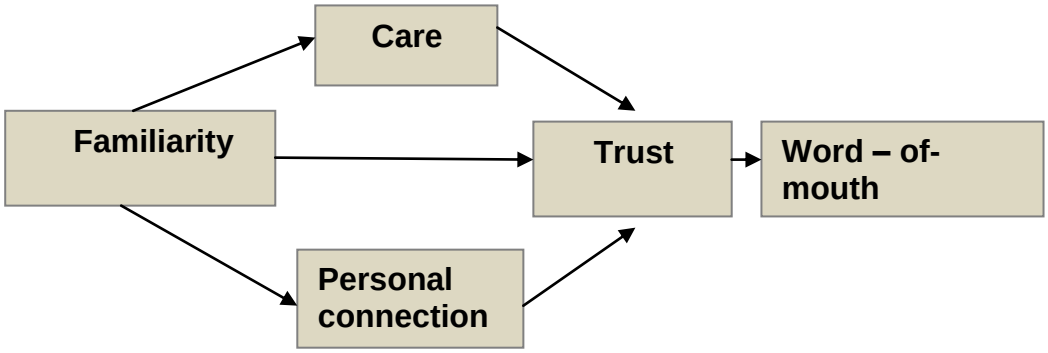

Figure 2
Elements which influence positive oral transmission (word-of-mouth).
The source: D.D. Gremler, K. P. Gwinner, S. W. Brown, Generating Positive Word-of-mouth Communication through Customer-Employee Relationships, International Journal of Service Industry Management 2001, No. 1

The concern, in turn, is based on a deep belief that a university employee will genuinely try to do what is good for him or her. On the other hand, personal connections may be defined as "a state" between a client and an employee based n the strong feeling of bond. All elements influence building trust which is understood by the authors of the model as "trust in reliability and righteousness of the company employees" [14] . It is the basis to build a positive oral transmission. A student must be convinced that the employees of a given university will do everything to provide good educational service to them and that they can give their affairs in the charge of a university staff.

Conclusion

To conclude , it should be added that the increasing competition on the market of educational services forced higher education schools to look for new ways and solutions in order to increase the students` trust to a given university and build strong bonds with them. The process of building positive relations of a higher education school with students, presented in the following elaboration, is based on a few main elements: trust, quality, satisfaction, building values and commitment. The use of marketing strategy, which includes the process already mentioned, will definitely contribute to strengthening a university's position on the contemporary educational market.

[14] D.D. Gremler, K. P. Gwinner, S. W. Brown, Generating Positive Word-of-mouth Communication through Customer-Employee Relationships, International Journal of Service Industry Management 2001, No. 1

References

Amstrong M.J., Students as Client: A Professional Services Model for Business Education, Academy of Management Learning and Education 2003, nr 4
Drapińska A., Kierunki działań marketingowych w szkole wyższej, Marketing i Rynek 2006, nr 12
Gremler D.D., Gwinner K.P., S. W. Brown, Generating Positive Word-of-mouth Communication through Customer-Employee Relationships, International Journal of Service Industry Management 2001, No. 1
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Neal W. D., Satisfaction Is Nice, but Value Drives Loyalty, Marketing Research 1991, No 1
Pabian A., Student jako beneficjent działań promocyjnych szkół wyższych (A student as a beneficiary of school promotional activities), Marketing and Market 2008, nr 8.
Słownik Języka polskiego, PWN, www.sjp.pwn.pl
Stach P., Bąk J., Na ścieżkach zadowolenia i lojalności – poszukiwanie modelu w kontekście uczelni (On the paths of satisfaction and loyalty-searching for the model in the context of a university) , Marketing i Rynek 2009, nr 6
Tjhomas J., Gupta R., Marketing Theory and Practice, Evolving Through Turbulent Times, "Global Business Review 2005", No. 1.

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LOCAL ENERGETICS AND ENERGY POTENTIAL IN MUNICIPALITY OF KOŠICE

LOKÁLNA ENERGETIKA A ENERGETICKÝ POTENCIÁL V KOŠICKOM KRAJI

Pavol ANDREJOVSKÝ – Jozef GAJDOŠ – Mária GIRGOŠKOVÁ – Rastislav RUČINSKÝ

Abstract
This article is devoted to the importance of local energetics in the east part of Slovak republic. Local energy is an energy generated and supplied at or near to the point of demand by individuals, business or communities for their own consumption. Large power stations are usually situated far away from demand, but renewable energy is often highly visible to local people. Local authorities can promote renewables by advancing local energy opportunities in their Regional Economic Strategies. Municipal energetics is unlike large energy more logically linked with cities and municipalities. Our effort was to identify perspective areas of energy potential in municipality of Košice (region of eastern Slovakia). In the area of renewable energy sources and its efficient use it is necessary to consider the region of Eastern Slovakia which is because of its character suitable for use of renewable energy sources (RES) and for energy purposes (soil potential, agricultural potential, geothermal energy). The basis for this is assumption of cooperation with local authorities and knowledge transfer between PHF EU, Košice self-governing region (VUC KE) and research institutes active in the local region. We use results of the project SEE/A/037/2.4/X -ENER SUPPLY "Energy Efficiency and Renewables - Supporting Policies in Local level for Energy. These results could affect the public authorities in deciding on changes in the promotion of sustainable production and use of energy and in promoting energy efficiency (EE) and RES.

Keywords: local energetics, energy potential, renewable energy sources

Abstrakt
V práci sa zameriavame na potrebu riešenia lokálnej energetiky na území východného Slovenska. Prinášame poznatky týkajúce sa možností využitia energetického potenciálu Košického samosprávneho kraja v súlade s energetickou politikou. Prezentujeme výsledky prieskumu potrieb vzdelávania v oblasti obnoviteľných zdrojov energie (OZE) v súlade s výsledkami spolupráce s partnermi projektu. Lokálna energia je vyrobená a dodávaná v blízkosti bodu dopytu po energii, ktorý tvoria fyzické osoby, podniky alebo lokálne komunity využívajúce energiu pre vlastnú spotrebu. Primárni výrobcovia energie sa obvykle nachádzajú ďaleko od dopytu, pričom obnoviteľné zdroje energie sú často dostupné pre miestne komunity. Miestne orgány môžu podporiť širšie využívanie obnoviteľných zdrojov energie tým, že sa výroba energie z OZE stane súčasťou regionálnych ekonomických stratégií. Miestna energetika je logicky spojená s mestami a obcami. Našou snahou je identifikovať perspektívne oblasti energetického potenciálu v oblasti východného Slovenska. V súvislosti s OZE a energetickou efektívnosťou (EE), je potrebné brať do úvahy charakter skúmaného územia (v našom prípade východného Slovenska), ktoré je vďaka svojmu potenciálu (najmä geoterm a biomasa) vhodné pre využívanie lokálnych energetických zdrojov.

Predpokladom úspechu je podľa nášho názoru úzka spolupráca s lokálnymi autoritami. Takýmto príkladom môže byť transfer znalostí v rámci riešenia výskumných aktivít lokálnych partnerov, preto využívame výsledky projektu SEE/A/037/2.4/X-ENER SUPPLY "Energetická efektívnosť a obnoviteľné zdroje energie - podpora regionálnych energetických politík“. Výsledky spolupráce tak môžu mať vplyv na verejné orgány pri rozhodovaní o zmenách v podpore udržateľnej výroby a využívania energie ako aj podporu energetickej efektívnosti s využívaním obnoviteľných nosičov energie.

Kľúčové slová: lokálna energetika, energetický potenciál, obnoviteľné zdroje energie

Introduction

Local energy is a fundamentally different approach, whereby energy is generated and supplied at or near to the point of demand by individuals, business or communities for their own consumption. This marks the beginning of a shift in the energy strategy, with energy increasingly becoming a local, as well as a national, issue. Large power stations are usually situated far away from demand, but renewable energy is often highly visible to local people.

Local authorities can promote renewables by making a renewable energy supply a pre-condition for any new development, and by advancing local energy opportunities in their Regional Economic Strategies. Community acceptance can be garnered by building transparency and accountability in to distributed energy projects, and highlighting the benefits to local citizens and the local economy. Local authorities have a role in assisting the country in a move towards a less centralised energy delivery system, where local energy supplies electricity and heat alongside the existing centralised infrastructure. This will require local authorities to work on solutions that fit their own populations, and to find technologies that are suitable to their business, buildings and variations in geography. [1]

Under municipal energetics we understand all activities related to providing and meeting the energy needs of a city or village. From our perspective to this segment belong manufacture and supply of heat, complex heat management reconstruction, utilization of RES and issues of energy waste recovery. Municipal energetics also includes street lighting of towns and villages, as well as projects aimed at reducing energy consumption in public buildings. Municipal energetics is unlike large energy more logically linked with cities and municipalities. Many of companies which providing services in the municipal energetics are regional or urban and therefore fall within the competence of municipality. This is reflected in the preparation process of any investment, strategic plans and also funding. [2]

Energy efficiency is at the heart of the EU’s Europe 2020 Strategy for smart, sustainable and inclusive growth and of the transition to a resource efficient economy. Energy efficiency is one of the most cost effective ways to enhance

security of energy supply, and to reduce emissions of greenhouse gases and other pollutants. In many ways, energy efficiency can be seen as Europe's biggest energy resource. This is why the Union has set itself a target for 2020 of saving 20% of its primary energy consumption compared to projections, and why this objective was identified in the Commission's Communication on Energy 2020 as a key step towards achieving our long-term energy and climate goals.

Climate and energy package represents difficult cross-cutting theme. It is essential, comprehensive and very ambitious solution that will significantly determine the economic development of Slovakia and the EU for the next 15 years or more.

Problem formulation

Energy potential and RES deployment in Municipality of Košice

In the area of renewable energy sources and its efficient use it is necessary to consider the region of Eastern Slovakia (NUTS I - Slovak republic, NUTS II - East Slovakia, NUTS III – municipality of Košice). Character of Eastern Slovakia is suitable for use of RES in the region for energy purposes (soil potential, agricultural potential, geothermal energy). The basis for this is assumption of cooperation with local authorities and knowledge transfer between PHF EU, VUC KE and research institutes active in the local region.

Position of municipality of Košice in relation to the issue of RES usage is based on Act no. 503/2001 C.l. about the support of regional development, as amended. In terms of competence and its responsibility can autonomous region for support of higher recovery of renewable energy sources uses tools in the field of providing: information and guidance, financial motivation (co-financing of projects funded by EU Structural Funds and other projects), providing subsidies and refundable financial assistance to legal entities, contributions to urban and regional development projects of supporting of the infrastructure construction, administrative measures.

Considering the assumptions and views of VSE (Eastern Slovakian energetics) is for the stability of the energy market suitable to consider the biogas and biomass as resources with the most stable outlook. At sufficient stability of partners in the construction and operation of biogas plant (BPS) is biogas in relative to biomass the most perspective source. On the basis of preference, biomass is preferred by local authorities in compared with geothermal energy, which is in the centre of interest in the near surroundings of Košice because of its potential.

The potential of hydro and wind power

There are 25 large hydropower plants in Slovakia, the installed power is 2,446 MW. Only one hydropower plant is located in region of Košice – it is called Ruzin, installed power is 60 MW. Next there are 4 pumped hydropower plants (PVE) with a total installed power 917 MW, 2 of them are located in region of Košice (Dobšiná 12 MW and Dobšiná II 24 MW). Other hydropower plants (MVE) are built in the basin of Bodrog river and Hornad river. The total technical potential of hydro power (850 - 900 GWh) is currently used at less than 50 %. Of the total technical potential of hydro power (900 GWh) is possible in small hydropower plants use 140 GWh, which represents 15% of potential. Of technical small power plant potential is currently used 11 %. At the end of the year 2004 there was 28 small hydropower plants used in region of Košice with installed power 6.7 MW. The remaining technical potential is 125 GWh. Of this potential, after taking into account environmental considerations, we can still use 60 - 65 GWh, what is equivalent to the installed power 30 MW.

Wind power has in our perception of the region limited potential, problems are associated with obtaining the permits (non-predicting energy source), irregular flow of the wind (frequent change of direction and speed), identified localities are located mostly in protected areas, relatively high population density (present negative noise and visual impacts of wind power plants on the population), the low efficiency of wind turbines - in our conditions 8 – 10 %.

Biomass Potential

Potential, which phytomass conceals in eastern Slovakia, can help to create 5000 - 6000 work places (estimate) for the disadvantaged work groups. Technical potential of agricultural biomass (phytomass) is 0.8 PJ / year in region of Košice. Of this potential with a good support mechanisms could be used in the agricultural sector from 30% to 50%. In the case of replacement of fossil fuels with phytomass even in large energy sources (heating plants, power plants), the proportion of phytomass could be 30 – 50 %.

The usable potential of forest biomass (dendromass) in the municipality of Košice represents an annual value 34 thousand tons with energy equivalent 0.7 PJ. After year 2010, the balance of available forest dendromass may actually increase because of the potential of energy crops production based on the cultivation of energy forests on the area of 6 000 ha with a production of about 300 thousand tonnes of fast-growing trees in short 1-year production cycle, which represents an annual energy equivalent 4.5 PJ. By chipping the tree crown can be achieved usage of up to now unused parts of trees. According to preliminary estimates can be used 20 - 30 % plane production of thin wood, it is 20 - 25 thousand. m3. A major source of energy usable wood waste in region of

Košice is also the forest industry, which produces 113 thousand tones of wood waste per year. The total energy value of useful waste from wood industry is 1.4 PJ. Dendromass resources potential in the region to the year 2020 will increase in comparing with current state in about 360 thousand tones per year, so the total energy usable sources potential can reach 507 thousand tonnes per year. In the animals excreta processing (pigs and cattle), by anaerobic fermentation and biogas production is possible to produce 1.1 PJ of heat per year.

Daily biogas production of average biogas plant is about 2 000 m3 , which shows that in the region of Košice would be possible to build 42 biogas plants. Agriculture in the region of Košice can set aside about 76 thousand hectares for purposed cultivation of green biomass for biogas production and subsequent combined production of electricity and heat or by using energetic plant for production of fuel for heat production (energy juice, miscanthus sinensis, sorghum, amaranth, technical hemp, etc.). On this area it is possible to produce next 8.1 PJ of energy.

Usable energy potential of biomass in the region of Košice is relatively high and represents potentially up to 15 % of annual energy consumption in the region, which is 128 PJ. There are three biogass stations in operation which produces energy from biomass in Slovakia by fermentation processes. One of them is located in place of East Slovakia region. There are more which burns he biomass for heat production in Slovakia. That is also reason why are we focusing on biogass station and support for agricultural sector.

The geothermal energy potential and environment energy potential

Considering the assumptions and views of VSE (Eastern Slovakian energetics) is for the stability of the energy market suitable to consider the biogas and biomass as resources with the most stable outlook. At sufficient stability of partners in the construction and operation of biogas plant (BPS) is biogas in relative to biomass the most perspective source. On the basis of preference, biomass is preferred by local authorities in compared with geothermal energy, which is in the centre of interest in the near surroundings of Košice because of its potential. There are geothermal energy sources in the southern part of Košice. It represents remarkable capacities, which are the greatest not only in Slovakia but even in Eastern Europe.

Region of Košice has the greatest prospects of geothermal energy by year 2020. Region of Košice has because of its natural conditions a significant potential for geothermal energy, which is based on past surveys evalued at 4 153 MWt, which represents 75 % of Slovak republic potential. Geothermal waters with temperatures above 100º C were verified by detailed survey in the southeastern part of the geothermal area of Košice valley, in the area Ďurkov -

Svinica. Geothermal energy of this area should be used in central heating system of Košice, as well as for economic and social development of the region.

To evaluate the real possibilities for the efficient usage of heat pumps in the KSK is actual to use primarily systems of heat pumps water - water, respectively air - air. Heat pumps which use geothermal water are highly energy efficient and their usage for high heat output for heating residential or industrial buildings may also be economically efficient, but their usage is tied to the location with geothermal water with temperature above 20° C.

On the basis of the evidence for different types of renewable energy sources are summarized overall and technical potentials in the table.

Table 1
Total potential and Technical potential of RES in Košice region

RES	Total potential		Technical potential	
	PJ	TWh	PJ	TWh
Hydro power	2,9	0,8	1,6	0,45
Biomass	18,7	5,2	18,7	5,2
Wind power	*	*	0,4	0,1
Geothermal power	131	36	66	18

Source: The report processing purposes datas from the conception of RES exploitation in Košice region. [online] [cited 22.3.2010] Available at: <http://www.vucke.sk/APIR/sk/Pre_Podnikatelov/Investicne_prostredie/energetika/obnovitelnezdroje/Stranky/default.aspx>

Usable potential is not identified because of lack of information, but there is an assumption that its values are in mostly cases very close to the technical potential.

Problem solution

Educational needs in the area of renewables

In the area of educational needs of RES was in the November 2010 realised research aimed to different issues of RES. Within questionnaire survey in the area of assessment educational needs of RES project team determined seven most important subjects in the area of RES in the municipality of Košice so examined sample of respondents consisted of municipality of Košice, cities Košice and Michalovce, the Plant Production Research Center – The

Agroecology Research Institute, 2 Centrums of RES by Technical university Košice, energy company VSE. Together with the questionnaire, a "cover letter" describing in brief the ENER-SUPPLY project as well as the work that has to be done in the frame of the WPs 3 and 5, was prepared and sent to the recipients. After telephone communication and personal meetings a questionnaire was sent to each of mentioned subjects. Finally all 7 questionnaires arrived in time in order to be analysed.

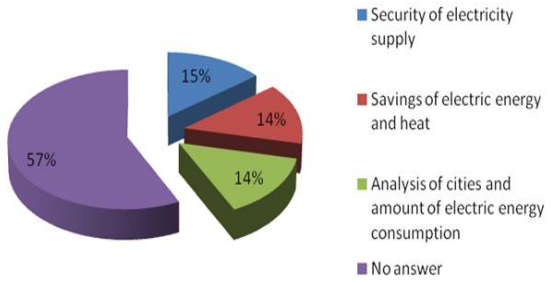

Figure 1

Which is the most urgent energy action?
Source: own processing

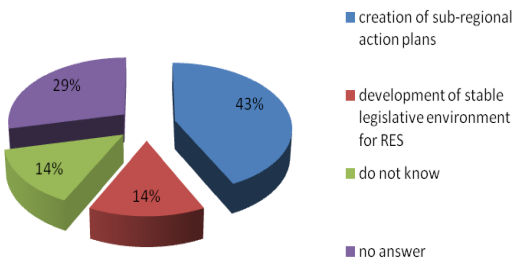

Figure 2

Which is the most urgent action in RES?
Source: own processing

According to questionnaire survey we can say that the most urgent energy action in municipality of Košice is security of electricity supply (15 %), the next urgent energy actions are savings of electric energy and heat (14 %) and analysis of cities and amount of electric energy consumption (15 %). For comparison, in the area of RES is the most urgent action creation of sub-regional action plans (43 %), the next urgent action is development of stable legislative environment for RES (14 %).

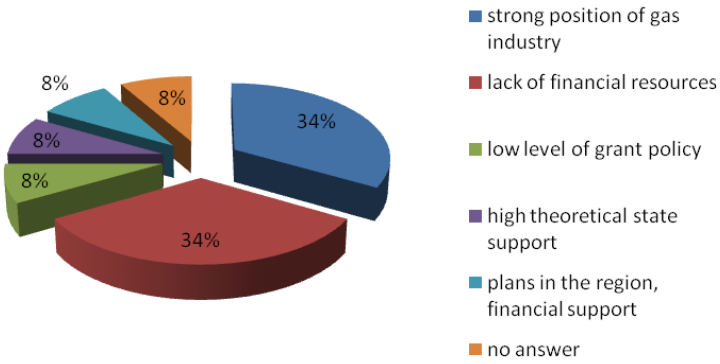

Figure 3

What are the main constraints at local level for RES?
Source: own processing

In the area of main barriers at local level for RES was identified mainly lack of financial resources (34 %) and strong position of gas industry (34 %). The other barriers were low level of grant policy (8 %), high theoretical state support (8 %) and plans in the region and financial support (8 %).

Our research brings a few next information. According to the results from fulfilled questionnaires, organizations are not afraid of energy consumption in the region. As the most urgent energy activity it is considered to perform a detailed mapping and bilancing of renewable energy sources, as well as mapping on the side of energy consumption. Part of self-governing region developed energy action plan.

As a general message coming from the analysis of the questionnaires received in the frame of WP3 of ENER-SUPPLY, the "lack of knowledge" in almost all aspects related to RES is obvious. The main obstacles at the local level for RES are seen in a strong position of gas industry and in a lack of financial resources and in property-law relations.It was expressed a confidence that organisations have interest to participane in project mainly becouse of possibilities how to increase abilities of employees within RES in general and in planning. Self-governing region developed energy management procedures, but there are problems with energy audits of buildings owned by the city. As a lack of environmental management initiatives in their areas is considered non-use of geothermal resource - Ďurkov (near Kosice), as well as budget and capacity of sources (personnal, financial). In anticipation of potential problems, in establishing priorities and in identifying and determining and solving, the most helpful are considered academic experts, renowned practitioners. As a negative,it is considered say "quasi" experts mainly from the "green" activists, which are unsupported by the facts, for the positive media attention on the contrary organisations consider successful projects and research results medialisation. The most affected subject by the activities of the project is nearly all society.

Within researched issue it will be needed to realise more detailed inventory and territory survey, focusing on the RES. This part is necessary to performance in partnership of LRAs (VUC KE) and other institutions. Within researched region it will be needed according to it to develop regional action plans, which absent. In accordance with the intentions of VUC KE it will be needed to focus particularly on the use of these resources (biomass – support of biogas, becouse in the region is not operating biogas station, focusing on Geotermal energy, becouse of low using of region potential as well as to promote heat pumps. This is matching with opinions of local actors in the energy market.

It will be required to prepare the next part of the research with orientation on this aspects and to join mainly agriculture companies, which want to diversify their production with aim on better use of RES, mainly biomass (aimly production of biomass, production of gas from biogas). Within the VUC KE absents center RES, with exhibition and promotion focused on the use of RES in the region.

Within our researched subjects have municipalities lack of knowledges about RES and and its using, it absents educational programs on the regional level towards towns and villages, which within transfered performance of state administration do not have enough staff and financial sources. They realise for the area of RES only evaluation and assumption of plans.

Conclusion

In the area of communal energetic still misses clear strategic direction. Similarly, legislation should be aimed to solving energetic problems on communal level, closest to specific customers to commune fells that its potential must be used. Realized projects can not reverse the energy balance of Slovakia, but in specific locations during an interruption of gas supplies has shown that it represents sustainability in certain location.

To this we should strategically and legislative lead and not only in the field of new energy sources, but also in the energy use of waste. In many cases, the project has good economic and financial parameters and satisfies all attributes of high-tech but it can not be approved in process of land and construction administration because inhabitants are against it.

Examples include several projects for waste incineration plants. Commune must realize that it must deal with the waste it generates, exactly how it intends to use the natural energy potential of its locations. It should therefore be significantly improved communication between municipality and the citizens about this type of projects.

Thanks

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References

[1] COVENANT OF MAYORS 2008. Committed to local sustainable energy. With the political support of the European Commission - DG Energy. *Covenant of Mayors held up as an example in EU Energy Efficiency Action Plan.* [online] [cit. 2011-01-29] Available at <http://www.eumayors.eu/home_en.htm>

[2] EUROPEAN COMMISSION 2011. *Energy Efficiency Plan 2011*. [online] Available at <http://ec.europa. eu/energy/efficiency/action_plan/doc/20110308_efficiency_plan_act_en.pdf> [cit. 2011-01-24].

[3] JANČOVIČ, Š., HUSÁR, M. 2007. *Stratégia využitia obnoviteľných zdrojov energie v Košickom samosprávnom kraji.* KSK 2007. Schválené uznesením Zastupiteľstva Košického samosprávneho kraja č. 282/2007 z 11.6.2007.

[4] MUSIL. P. 2009. *Globální energetický problém a hospodářská polotika se zaměřením na obnovitelné zdroje*. Praha : Nakladatelství C.H. Beck, 2009. ISBN 978-80-7400-112-3.

[5] POLÁK, M., STANKIEWICZ, B., SUCHOMEL, J., KOCÁK, V. 2009. *Obnoviteľné nosiče energie – Ekonomika a životné prostredie*. Košice : KARO – PRESS, 2009. ISBN 978-80-969187-4-4.

[6] VACH, V. 2009. *Riešme energetické problémy na úrovni samospráv*. [online] Available at <http://www.komunalnaenergetika.sk/clanok.asp?id=22> [cit. 2011-04-10].

[7] STRIČÍK, M a kol. 2008. *Prírodné zdroje a udržateľný rozvoj*. Bratislava : Ekonomická univerzita, Ekonóm, 2008. ISBN 978-80-225-2646-3.

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STRATEGY OF AUTOMOTIVE INDUSTRY AT OVERCOMING THE NEGATIVE IMPACTS OF ECONOMIC CRISIS

STRATÉGIA PODNIKOV AUTOMOBILOVÉHO PRIEMYSLU PRI PREKONÁVANÍ NEGATÍVNYCH DOPADOV HOSPODÁRSKEJ KRÍZY

Vojtech FERENCZ – Dagmar PRIVIDI

Abstract
In common automotive industry brings revival of national economies, helps to reduce unemployment, to develop the infrastructure and regions. It brings to the market high potential for creating new products, innovation, introduction of latest technologies and etc. It is a source of innovation in products, services or technologies in production, assembling and logistics, in the field of management of technological processes, managing test centers and test facilities, waste management, human resources management.

Keywords: innovation, innovation potential of enterprises, small and medium-sized enterprises, automotive

Abstrakt
Automobilový priemysel všeobecne prináša oživenie národných ekonomík, napomáha k znižovaniu nezamestnanosti, rozvíja infraštruktúru a regióny, vstupuje na trh s vysokým potenciálom vytvárania nových výrobkov, inovácií, zavádzania najnovších technológií a pod. Je zdrojom inovácií vo výrobkoch, službách, alebo technológiách vo výrobe, montáži, logistike, pri riadení technologických procesov, riadení testovacích centier a skúšobní, nakladaní s odpadom, riadení ľudských zdrojov.

Kľúčové slová: inovácie, inovačný potenciál podniku, malé a stredné podniky, automobilový priemysel

Introduction

Automotive industry is represented by many attributes, most accurate is the engine of Europe's industry because of its economic and social importance and the historical role is crucial for the development of the whole continent. This industry is the backbone of the industry providing activities across the entire economy from the production of materials through the production of components, car assembly, sales, after sale service; is a source of competitiveness, economic growth, exports and trade, research and innovation; is also the most important source of employment, income and social security of population. It provides recovery of national economies, helps to reduce the

unemployment, develops infrastructure and regions, enters the market with high potential for creating new products, innovation, introduction of latest technologies and etc. It is a source of innovation in products, services or technologies in the manufacture, assembly, logistic, management of technological processes, management of test centers and test facilities, waste management, human resources management. Various expert studies declare as strengths orientation in the automotive industry in particular, innovative products, adoption of most promising technologies, development of knowledge-intensive services and independent wide-ranging network of necessary components suppliers.

1. Evaluation of automotive industry development

Before the crisis in Europe 18 million cars were produced annually, about one third of world production (27 %). The automotive sector in Europe directly employed 2.2 million people, but indirectly created about 12 million jobs characterized by a high level of qualifications, working conditions and continuous training for its employees.

An important factor in the automotive industry (AI) is the comprehensive multi-sectoral links. AI is connected with many sectors outside engineering - electronics, steel, chemicals, ICT, rubber industry, but for example also with textile factories. Significant is also diversifying. To produce one car involves typically about 50 component suppliers. These suppliers produce about 75 % of value added. In 2007 the value of trade in automotive products in the EU was 360 billion euro. As a result of the crisis, fell in 2008 to 315 billion.

The global economic crisis hit the automotive industry as a first industrial sector. For more than a decade, sales in the EU fluctuated between relatively narrow ranges (16.7 to 17,700,000 vehicles per year). In early summer of 2008 the sale lost of this scale and further in the last quarter collapsed. In January 2009 the sale of cars was by 3.5 million lower than the predicted trends. The shock of it in combination with a synchronized drop in the key automotive export markets caused that the situation became critical. Statistics correspond to the 20 % decline in automobile manufacturing industry in the EU 27 in 2008 to the end of 2009. This is about a loss of more than 60 billion € of industry revenues. Capacity utilization fell to 65 %, which is the amount of fixed costs in the industry. Revival from the beginning of 2010 is gradual. Distribution of staple cake follows the International Organization Automobile Manufacturers (OICA), which monitors a total of forty countries around the world. Worldwide in 2010 were produced 62.150,021 vehicles, compared to by crisis adrift year 2009 is a negligible increase of 26.67 % (48,301,134 units). The automotive market is experiencing a worldwide boom sales slumped in the U.S. and especially in Eastern Europe. Last year, the engines of growth were Brazil,

Russia, India and China:

Table 1
Car market in 2010

Position	Country	Number of units
1.	China	11,430,000
2.	Japan	8,200,000
3.	Germany	5,200,000
4.	South Korea	3,800,000
5.	Brazil	3,100,000

Source: www.automix.sk

The largest country in Asia is not only an attractive destination absorbing the supply from Europe but also the largest car manufacturer in the world at all. Last year recorded 10 percent growth in the volume of its production and produced up to one sixth of the total production: 11.43 million units. The second were Japanese and third Germans. From the first half of the list dropped out Slovakia, the marathon was not enough, or 13:26 per cent increase of (522,500 units). Not only results in number of produced cars per thousand inhabitants are interested. Relatively small countries receive a superior edge there. In 2009 in Europe reign 2 million Slovenians - the smallest European Union country that makes cars stuck all members of the Union in his pocket. With 102.1 cars per 1,000 inhabitants reign ranking, second ended the Czechs and third were the Slovaks. Slovenia is also the second country in the history that recorded more than a hundred cars per thousand inhabitants. But as it follows from the analysis of UniCredit Bank Slovakia was settled at the head of the rankings after a year break, just before the Czech Republic and Slovenia. In these countries annually are produced about 100 private cars per 1,000 inhabitants. Globally Slovakia belongs in 2010 with the production of 557 thousands private cars the 19th partition. In 2009 it was 20th the place. Last year Slovakia shared on total world production with 1.0 %. For the first time the milestone broke Slovakia on top condition in 2008 when it produced 106.6 cars per thousand people. From sovereign position was degraded by economic recession and loss of interest in luxury cars that the factory in Bratislava was specialized in. Slovakia in 2009 also suffered the greatest fall of all countries. Instead of 575, 000 cars in 2008, the production line left only 461 000 models.

The main impact on automotive industry state has the global financial crisis by reducing demand and access of firms to finance. By negative effects are affected companies in different industries, but mostly it is seen in businesses of automotive industry.

Accompanying negative phenomena of the crisis are:

- Recorded is a decline of consumer interest in buying new cars
- Decline of vehicles sales particularly on western markets,

- Interruption or reduction of car production,
- Cases of redundancies in the automotive companies and suppliers,
- Increased of pressure on reduction of product prices,
- Decrease in number of new contracts, particularly for suppliers of automotive components,
- Suspension or reduction of planned investment.

There are also other important factors that cause that the car industry is more affected by the crisis than other sectors (Fig. 1).
In particular:

- a change in customer preferences. Currently, the highest preference among customers has fuel economy, reasonable price and quality,
- radical change in markets where the growth focus is shifted to new markets, often known by abbreviation BRIC - namely China, India, Russia, Brazil,
- the existence of excess production capacity estimated at 20 - 30 %. Automotive partially overestimated the potential growth markets,
- environmental factors that accumulate legislative measures, development of alternative propulsion and the like,
- car innovation and manufacturing technologies. This factor is consistently present throughout the history of automobile production. At present, innovation cycles are radically shortened.

Although the influence of financial crisis will be weaker, other factors will affect long term and the automotive industry will change.

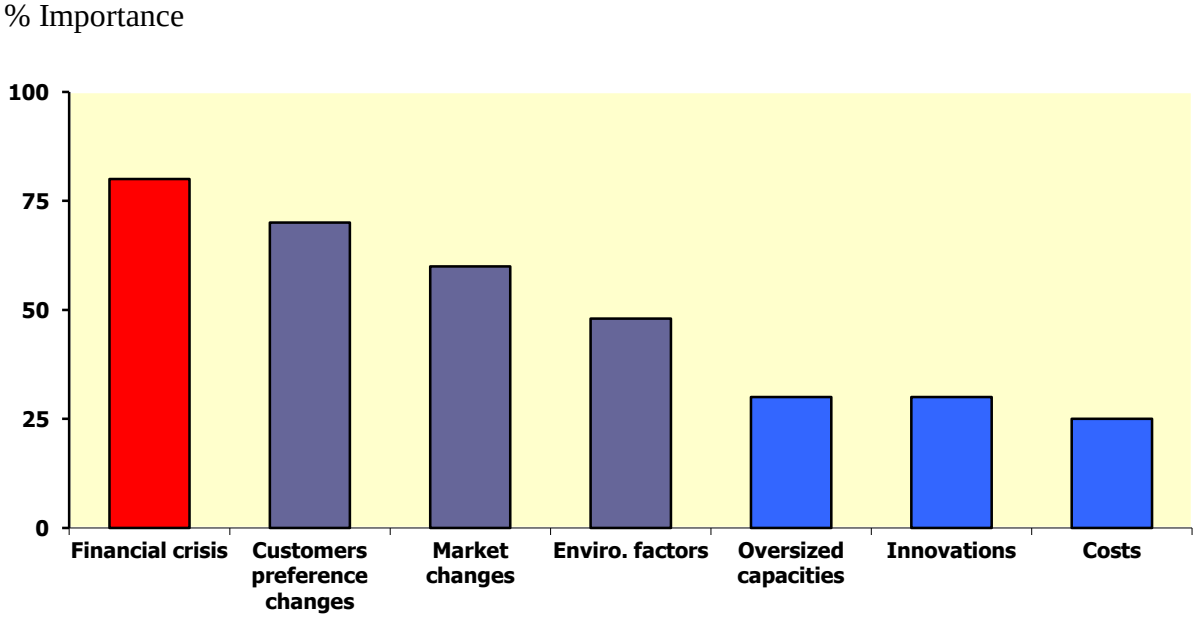

Figure 1
Synergistic effects of the automotive industry
Source: Own processing under according to discussion at the conference Autoslovakia

2. Automotive industry in Slovakia

Slovakia replaced the deficit after a dramatic reduction in armament production and heavy engineering by automotive manufacturing. The automotive industry is the largest sector of economy in Slovakia. It is crucial for the development of GDP, exports, jobs, attracting investments and the overall qualitative changes in the industry expressed by a high quality, productivity, innovations and high technologies. Subcontracting sector has a key role for the product, technology and regional diversification, with positive impacts on employment and SME development.

Statistical data
(processed from documents of Statistical Office SR)

Automotive industry according to statistical classification of economic activities is defined as a division 29 - Manufacture of motor vehicles, trailers and semitrailers.
Division 29 is divided into three basic groups:

- Group 29.1 - Manufacture of motor vehicles
- Group 29.2 - Manufacture of bodies for motor vehicles, manufacture of trailers and semitrailers
- Group 29.3 - Manufacture of parts and accessories for motor vehicles

The manufacture of motor vehicles in Slovakia in group of industries represent 3 automobile factories Volkswagen, PSA and KIA, the fourth business included in this group is the company PANAX FCS, Ltd. from Tvrdosina. This company deals especially with production of extensions and conversion of special vehicles and ambulances. The trinity automobile factories (Volkswagen, PSA Peugeot Citroen and Kia Motors) started together with the global economy. Clearly export -oriented production of cars in Slovakia found new customers abroad. Number of orders took a sharp upward movement which started a production in the second half of 2010 and accelerated also the preparation for new investments and models. Production of personal motor cars in Slovakia in 2010, has grown yearly to-fifth of the already mentioned 557 thousand pieces. It was the third highest car production in the history of Slovakia and at the same time for the third time managed to overcome the limit of five hundred thousand cars produced. At short range there was a record of 575,776 cars in 2008. Its overcoming was defended particularly by a slower start at the beginning of the year, a small failure in Trnava PSA and also feverish preparation of the model Up! into production series under the brands of Volkswagen, Skoda and Seat in the Bratislava plant.

The most succeeded the Kia Žilina which according to the model its Korean mother was able to record the same record production and sales also with the models produced in Slovakia. At 2.1 million worldwide sales of Kia

vehicles, the Slovak daughter participated last year, more than of ten percent. Model of Žilina Kia Sportage became furthermore the second best-selling model of the concern Kia in the world after the first Kia Cerato.

Trend Analyses estimated that the car factories Kia Žilina and Trnava PSA in this year will hold at least its last year level. And in the second half of 2011 will start away to new customers and also the new models from Volkswagen workshop in Bratislava that will Slovak production of passenger cars increase year on year by more than a tenth. This would for the first time in history exceed the 600-thousand vehicles. But still it will be almost of one-third under the capacity that the car factories in Slovakia plan in the years to put into motion. The strongest driver of the car production in Slovakia was Kia Motors Slovakia. In the plant of Teplička nad Váhom near Žilina - the annual production jumped by more than a half to record more that 229-thousand units, which generated two fifths of Slovak car production. The success is the more valuable that the European and the first half of the Russian market, where the overwhelming part of the production plant as a whole was directed showed as a whole a downward trend in demand.

A stagnation of Western Europeans is waited also during the whole 2011. The greatest interest was for the sport-utility vehicles (SUV) that launched the total production. The proportion of the most desirable SUV ix35 Hyundai and Kia Sportage has increased year on year two and a half times and formed up to half of the output of the Žilina factory production lines. The Slovak Kia worked during the year on two shifts at more than 95 per cent of its capacity utilization. The full capacity of 300-thousand vehicles a year, the management would like to achieve in two years when a new generation of cee'd, by which Kia begins its European Production in Slovakia before December 2006. The new president of Kia Motors Slovakia Myung Chul Chung for Trend said that this year the production plan is based on 240-thousand cars, but everything will depend on market situation. He does not exclude its overcoming than last year, when the target 224 thousand exceeded the value 5500 pieces. In the autumn months worked on the highest speed when the number of produced cars exceeded a record of 22,200 units. In November, Kia rolled off the production lines from the start of series production the 700-thousand cars, and if Žilina car factory meets its planned production targets in late December 2011, could announce the first million car produced. The growing demand for SUV models in the Old World brought beginning of this year into Žilina plant a decision from the headquarters of Seoul, according which they will exchange the production of Kia Venga and Hyundai ix35 with its partner plant in Czech Nosovice. The aim is the optimization and higher flexibility and efficiency of production in both production factories. This is due to different developments in the markets - the stagnation of the small cars MPV market, which includes Kia cee'd and Hyundai ix20 and rapidly growing interest for compact SUV like Kia Sportage or Hyundai ix35. Žilina plant as the only in Slovakia produces engines that takes

also the car factory in Nosovice. This on contrary delivers speed -change boxes.

The current period can be characterized as a period in which clearly is shown that the automotive industry is returning to the rate characteristic of the end of 2008. The automotive industry further on remains the crucial sector in the national economy and its share on the industry last year SR was 37 %, while this year it is expected a further growth of the share. Last year nearly 70,000 workers were employed in it and compared with 2009 it is more of 1800, but in comparison with 2007 in the pre-crisis period, it was less of about 7000 (ekonomika.sme.sk).

3. Economy of suppliers AP

Requirement to increase innovativeness of SME -AP has a direct relationship to economic indicators.

Indicator of profit profitability before taxing and (EBIT) of world automotive suppliers was prior to the crisis in the years 2000-2007 at a high level stabilized at 5.3 %. Automobile manufacturers in recent years experienced a downward trend, which in 2004 was an indicator of return to 5.1 % and in 2006 to only 3.6 %.

For the parameters of return on capital, this trend is the same there is a decline in automotive manufacturers and stabilization of suppliers. In terms of sales, the development of suppliers developed very favorably with the high growth between 2003 and 2006 from the following reasons:

- annual global vehicle production grew by about 4 % per year between 2003-2006 (from 59 mil. cars to 66 mil.)
- the continuing shift of values and responsibilities of the OEM (Original Equipment Manufacturer - automobile manufacturer), to OES (original equipment supplier - automotive supplier)
- increase of supply mergers and acquisitions had an impact on revenue growth of suppliers.

To achieve sustainable profit growth in the global automotive supply sector these are formulated following key metrics:

- Growth of revenues
- Portfolio of key products
- Portfolio diversity of customers
- Global application
- Excellence in operational management
- Focus on cost reduction
- Optimization purchase
- Effective management of expenditure in research and development
- Minimizing extra cost
- Specific investment
- Optimization of working capital management

- Financial sustainability
- Limited funds
- Maximized interest coverage
- Limited financial capacity
- The structure of the balance of commitments

Automotive manufacturers and suppliers in their relations have to come to mutual agreement and to compromise with each other. The main differences of opinion between the OEM and suppliers are:

- Price for subcontracting
- Payments for research and development payments, management modules and systems, and creation tools
- Production volumes, guarantee production quality and innovation, intellectual property.

The importance of the automotive industry and the impact of the global economic crisis prompted the need for support provisions practically over the world. The direct assistance provided to car manufacturers together with other incentives aimed for demand support in the market was a precondition for the survival of this industry. Supporting car sales was the introduction of the scrapping in the majority of countries with the automotive industry, including Slovakia.

Supporting stimuli to increase cars demand and the help at financing the automotive industry have limited horizon effect. Measures in enterprises must be built on them .A response to the challenges arising from the impact of the global economic crisis is required.

The prognoses assume in Western Europe in 2015 a production on the level of 2008. Stronger growth in manufacturing will be concentrated in China, India and Russia. For a zone of growth is regarded also Slovakia, where it is predicted a production of about 900 thousand cars for 2015.

The development of automotive market is characterized by changes in the structure of automotive segments. The segment of ultra-cheap cars (ULCC) will grow by 24.3 % annually to 14 million units in 2020. A strong trend is toward reduction (e. g 4 - instead of the 6 - cylinder) of existing classes of cars and the development is directed to electric and hybrid cars. Failure of use of automobile production capacity will persist into 2015.

4. The main recommendations for the automotive industry in times of crisis:

- reduction of variable costs for maintaining a positive EBIT (net income);
- ensuring the financial condition till cash flows optimization;
- capitalization and further improvement and reinforcement of technological level;

- further improvement and reinforcement of the technological level;
- elimination of outdated production methods and equipments;
- progressive development of "clean" cars and fuels;
- architecture design based on car platforms and modules;
- reevaluation of existing innovative plans and reduction of non-essential projects;
- use of innovative methods for products costs reduction;
- verification of the development of new products for next years;
- emphasis on new opportunities;
- focus on creative partnerships with other organizations;
- business reorganization based on weak concepts;
- risk management and application also on incremental innovations, which do not require,
- high investments;
- investments into culture, to lasting sustainable relations because synergy brings money;
- change of employees thinking to acquire more the innovative methods.

Innovative orientation of companies must respond to the most current industrial challenges, i.e. redistribution of resources towards high growth and low-cost regions, the need to innovate with limited financial resources and shorter product life cycles:

- **The beginning of specialization in engineering and production**, causing a variety of technology products between manufacturers. As a result of this phenomenon will be the continuation of transferring the responsibility of a large number of manufacturing processes and R & D on suppliers. The suppliers will have to be ready for different challenging tasks whereby it is still necessary to work closely with customers to monitor the global automotive companies in their development processes and production systems and the like.
- **Modularity** is another factor of increasing complexity of cars. Automobile manufacturers will focus on innovative efforts at new types of modules and at modules to be defined by a certain group of characters (e.g. safety for Volvo, comfort for the Mercedes-Benz, reliability for Toyota) and will outsource questions and tasks related to the particular vehicle safety for suppliers.

  Innovations for cars so called low -cost cars, which will be characteristic especially for countries such as China, India and other newly rising markets. Innovative opportunities for low-cost projects are developing new materials, new production methods and principles of design, searching for specific innovations etc. This type of innovation has become one of the main motive powers of R & D for industry in the future years.
- **Innovation in electronic and electrotechnical elements of the cars** - it is expected that after 2015 the growth of innovation will be 6 % per annum. To

these innovations we can also include innovation of software, semiconductors, elements on facial panel and other electronic components in cars. An increase on pressure for cost optimization, functional integration and standardization of components will start.

- **Switching of functions in cars into systems**, which means a transition from individual innovations (e.g. xenon headlights, DVD, TV, and others) to innovation of systems, as a system that integrates existing systems such as crash sensors, ESP Electronic Stability Program, seats control, safety belts control and of sunroof top and other supplementary safety sensors.
- **Environmentally oriented innovations.** Important themes for innovations at present are emissions reduction, fuel efficiency consumption, weight of cars with new concepts of gear and their architecture, new materials and their use.

Conclusion

The fundamental question in optimization of research and development in automotive companies is to choose the right technology and to define the right targets at the right time. An important step in optimizing R & D is to revalue the potential future markets of all ongoing projects, to define the threats that appear at other technologies in the same area and to model price range. It is necessary to thoroughly and correctly analyze each innovative project and to prepare the right marketing and sales strategy for different markets. It happens very often that many innovations of automobile manufacturers or suppliers are not successful, and in particular this is because that car factory and suppliers do not know too much about customer requirements and do not pay enough attention to innovative marketing. The optimization of research and development in recent decades is often mentioned in connection with reducing costs. The cost of innovation and lower costs for research and development will play an important role in future growth of the automotive business and industry as a whole. Increasing technological complexity, which affects the development and production costs, is one reason for the further search for more optimal and efficient solutions of more saving method with the financial resources in enterprises. Some solutions to reduce costs, which could be applied also in the Slovak enterprises and with appropriate adaptation, are:

- the use of new and more effective materials, which will be reflected in the cost of production processes,
- another solution can be flexible production concepts, enabling better use of assembly lines in factories,
- transfer of research and development of large global companies to other countries with cheaper engineering costs is also an alternative to reduce costs,
- modular approach will reduce costs for research and development on

product, causing a higher variation and shortening models innovation cycles
- lower costs on testing and examinations can be achieved by using high technology for faster and more precise testing,
- new software will help to reduce costs in the development of components at a global scale,
- building alliances automotive companies in the development of large units (joint projects in the development of engines, chassis, etc.),
- optimization of manufacturing and assembly processes, innovation, assembly lines, effective arrangements are also important factors to reduce costs.

References

1. *Dlhodobá vízia rozvoja slovenskej spoločnosti*. Bratislava : Ekonomický ústav Slovenskej akadémie vied, 2008, http://www.ekonom.sav.sk/uploads/Vizia.pdf
2. FERENCZ, V. 2008. Future Opportunities For Automotive Investors In The Slovak Republic: The Government's Plans To Support the Industry. In *Proc. Autoslovakia 2008.* Bratislava : WBR, February 2008.
3. FERENCZ, V. 2009. Mapping Out Government Plans To Support Growth In The Automotive Sector In Slovakia. In *Proc. Autoslovakia 2009,* Bratislava : WBR, February 2009.
4. FERENCZ, V. 2008. Stratégie zvyšovania inovačnej výkonnosti MSP. In *Transfer inovácií*. ISSN 1337-7094, 2008, č. 12., s.13 - 16.
5. FERENCZ, V. 2010. *Metódy a nástroje pre zvyšovanie inovačnej úrovne MSP v dodávateľskom sektore automobilového priemyslu*. Dizertačná práca. Košice : PHF EU, 2010.
6. FERENCZ, V. - MIHOK, J. 2008. Dodávateľský sektor a finančná kríza. In *Automotive Industry*. ISSN 1337-7612, 2008, č. 4.
7. FERENCZ, V. - RUČINSKÁ, S. 2010. Bariéry inovácií v MSP. In *Podpora inovácií – stratégie, nástroje, techniky a systémy*. Košice : CITR, 2010, s. 77 - 108. ISBN 978-80-970320-0-5.
8. KOVÁČ, M. - SABADKA, D. 2010. *Typológia automobilového priemyslu*. Košice : SjF TU, 2010. ISBN 978-80-553-0534-9.
9. MIHOK, J. - Ferencz, V. 2010. Techniky manažmentu inovácií. In *Podpora inovácií - stratégie, nástroje, techniky a systémy*. Košice : CITR, 2010, s. 111 - 147. ISBN 978-80-970320-0-5.
10. MIHOK, J. - Bilas, R. 2010. Inovácie v podnikoch a globálna kríza. In *Podpora inovácií - stratégie, nástroje, techniky a systémy*. Košice : CITR, 2010, s. 255 - 289. ISBN 978-80-970320-0-5.
11. ŠVAČ, V. 2006. *Dodávateľské systémy v automobilovom priemysle*. Košice : SjF TU, Edícia EQUAL, 2006, 150 strán. ISBN 80-8073-682-0.
12. ŠVAČ, V. - Kováčová, Ľ. 2010. Rastúce požiadavky na dodávateľov v automobilovom priemysle. In *AI magazine – automotive industry*, 2010, roč. 3, č. 1, s. 46 - 47. ISSN 1337-7612.
13. ŠVAČ, V. 2006. *Skúšobníctvo v automobilovej výrobe*. Košice : SjF TU, Edícia EQUAL, 2006, 150 s. ISBN 80-8073-680-4.
14. UHRÍK, J. 2010. *Výsledky automobilového priemyslu 2009 - problémy a riešenia*. VZ ZAP SR, 8. apríl 2010. Dostupné na: http://www.zapsr.sk/

15. VAVRINČÍK, P. 2006. Inovačný potenciál a reinžiniering v SR. In *Podniková revue*: vedecký časopis Podnikovohospodárskej fakulty EU. ISSN 1335-9746, 2006, roč. 5, č. 10, s. 35 - 42.
16. http://ekonomika.sme.sk/c/5937812/tento-rok-sa-na-slovensku-moze-vyrobit-630-tisic-aut.html. Dostupné na internete dňa 13.6.2011.

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COMPETITIVE INDUSTRIES FROM SMEs POINT OF VIEW

KONKURENCIESCHOPNÉ PRIEMYSELNÉ ODVETVIA Z POHĽADU MALÝCH A STREDNÝCH PODNIKOV

Michal PRUŽINSKÝ – Edita MILČEVIČOVÁ

Abstract
The Competitive Industries objective aims at making Europe a more attractive location to invest in research and innovation, by promoting activities where businesses set the agenda. It will provide major investment in key industrial technologies, maximise the growth potential of European companies by providing them with adequate levels of finance and help innovative SMEs to grow into world-leading companies. Entrepreneurs are the key source of wealth creation, competitiveness, jobs and innovation in Europe. Around 80% of all new employment is created by new companies, which is why start-ups are so crucial to Europe's long-term well-being. However, since only 50% of new businesses survive the first five years, entrepreneurs need to be given the opportunity and confidence to start again. Indeed, research shows that businesses set up by second-time starters grow faster in terms of turnover and jobs than those established by first-time entrepreneurs.

Keywords: competitive industries, SMEs, turnover, jobs

Abstrakt
Objektívnymi cieľmi konkurencieschopných odvetví je urobiť z Európy atraktívnejšie miesto pre investície do výskumu a inovácií, podporou aktivít podnikov zahrnutých do programu. Tento bude poskytovať významné investície do kľúčových priemyselných technológií, maximalizovať rastový potenciál európskych podnikov tým, že im bude poskytnutá primeraná úroveň financovania a pomoc malým a stredným podnikom inovatívne vyrásť na popredné svetové firmy. Podnikatelia sú hlavným zdrojom bohatstva, konkurencieschopnosti, zamestnanosti a inovácií v Európe. Asi 80 % všetkých nových pracovných miest kreujú nové spoločnosti, čo je dôvod, prečo štartujúce podniky sú tak významné pre dlhodobý udržateľný rozvoj v Európe. Nakoľko len 50 % novozaložených podnikov prežije prvých päť rokov, podnikatelia by mali mať príležitosť a dôveru začať znova v prípade, že neuspeli v prvom podnikaní. Výskum totiž preukázal, že podniky, ktoré boli podnikateľmi zriadené ako ich druhé rastú rýchlejšie, ako tie prvé z hľadiska obratu a vytváraných pracovných miest.

Kľúčové slová: konkurencieschopné priemyselné odvetvia, malé a stredné podniky, obrat, zamestnanosť

Introduction

Economic environment in oncoming years will change swiftly and much often than it was in previous period of time, especially in 20th Century. One the one hand European Union and Slovak government try to create the programs which would encourage the entrepreneurs to continue with their business. But on the other hand all off the programs are spreading funds through Europe. They have

to be guaranteed. Nowadays any EU country has to go to borrow money at the financial markets. I.e. financial investors can loan to Slovakia are asking more money than before. According to Branislav Toma (Pravda – Slovak Daily newspaper, January 15) while still in February last year paid the state for 5-year loan converted to one hundred euro annual rate 3.5 euro, and on Wednesday, January 11, 2012 he had to accept the interest rate 4.63 euro. Despite the growth in interest as economists at the time of debt crisis in Europe for the very successful sale of Slovak bonds. State taking the money went to foreign markets. The current government has yet to count the overcharge state debt financing. "I do not further increase the rates of Slovak government securities. Budget debt service will be maintained," said Daniel Bytčánek, Director of the Agency for Debt and Liquidity Management. But economists have not so optimistic. "If you will want to happen in the future to pay less, you have to take further steps to reduce the deficit. Without this, it will not work and will be a key future role of government," said Juraj Štefanovič, an analyst at CSOB bank. State five-year bond sale was originally planned in the autumn of last year, but if it deterred from the sale of just the high reluctance of investors buying government bonds of countries using the euro. In the past, usually came to the sale of government bonds by foreign syndicated issue. In this pre-sale buyer look for the commission selected banks. "Since November turbulences at the financial markets Slovakia is only country in the euro area, which had the courage to enter the market for syndicated issues of government bonds," said Bytčánek. From neighbouring countries to overtakes us only Poland. That is, paradoxically, without the euro enjoys greater confidence and lower interest rates than Slovakia.

Europe a more attractive location to invest

If we look for particular reasons for statement mentioned above there is a necessity to find out what the keys requirements are ahead of us. In ten years from now (Horizon 2020) we have to:

- Build leadership in enabling and industrial technologies, with dedicated support for Information and Communication Technology (further “ICT” only), nanotechnologies, advanced materials, biotechnology, advanced manufacturing and processing, and space, while also providing support for cross-cutting actions to capture the accumulated benefits from combining several Key Enabling Technologies (further “KET” only).
- Facilitate access to risk finance because majority of any financial decisions will be risky.
- Provide Union wide support for innovation in SMEs.

How we can approach these important phenomenal issues of Horizon 2020? Leadership in enabling and industrial technologies: will support the

development of technologies underpinning innovation across a range of sectors, including ICT and space. Horizon 2020 will have a strong focus on developing European industrial capabilities in Key Enabling Technologies (KETs) with a budget of € 5894 million in constant 2011 prices. These include:

- Micro - and nano-electronics; photonics.
- Nanotechnologies.
- Advanced materials.
- Biotechnology.
- Advanced manufacturing and processing.

Development of these technologies requires a multi-disciplinary, knowledge and capital-intensive approach. The new Programme for the Competitiveness of enterprises and SMEs (further „COSME" only) will run from 2014 to 2020 with a foreseen budget of € 2.5 billion (current prices), and will focus on:

- Facilitating Access to finance for Small and Medium-sized Enterprises (SMEs).
- Creating an environment favourable to enterprise creation and growth.
- Encouraging an entrepreneurial culture in Europe.
- Strengthening the sustainable competitiveness of EU enterprises.
- Supporting the internationalisation of SMEs and improving their access to markets.

The Programme will ensure continuity with initiatives and actions already undertaken by the Entrepreneurship and Innovation Programme (further "EIP" only), building on the results and lessons learnt. While many successful features of the EIP will be continued, management of the Programme will be simplified to make it easier for entrepreneurs and SMEs to benefit from it. The Programme will support complement and coordinate actions by the Member States. It will specifically address problems of a transnational nature which, by means of economies of scale and demonstration effect, can be more effectively addressed at the European level. European Union expect as a result:

1. The access to finance will be easier for entrepreneurs and Small and Medium-sized Enterprises (SMEs).
2. Self-employment and business development will be targeted by this programme as important sources of growth and job creation.
3. Member States will be in a better position to maintain the competitiveness of their industrial basis, increase the number of their entrepreneurs, and raise their employment rate.

Who are the main beneficiaries for the Programme for the competitiveness of enterprises and SMEs (COSME)?

First of all there are "Entrepreneurs", in particular in SMEs, will benefit from an easier access to funding for development, consolidation and growth of their business.

Secondly the "Citizens" who want to become self-employed and face difficulties in setting up their own business, for instance young entrepreneurs.

Thirdly the "Member States' authorities" (at national, regional and local level), which will be better assisted in their efforts to elaborate and implement effective policy reform. In particular, they will benefit from EU-wide reliable data and statistics, best practice and financial support to test and scale up sustainable solutions for improving global competitiveness.

Impact of the Programme for the Competitiveness of enterprises and SMEs

The Programme is expected to contribute to an increase of the EU GDP of €1.1 billion per year. The Enterprise Europe Network is expected to assist 39,000 companies with partnership agreements, resulting in 29,500 jobs created and/or safeguarded, helping to launch 900 new business products, services or processes per year and contributing to € 200 million additional turnover for assisted enterprises per year. Access to finance will be easier for entrepreneurs, in particular those willing to launch cross-border activities, resulting in an expected increase of €3.5 billion in additional lending and/or investment for European enterprises per year.

Along with cutting red tape, another factor in nurturing Europe's long-term economic future concerns ensuring that businesses are able to grow and continue to provide jobs long after their creators have moved on or retired. It is estimated that Europe loses around 150 000 firms – or 600 000 jobs – every year because owners cannot find a suitable successor. Finding and equipping the next generation of entrepreneurs to carry on the work of others is therefore vitally important.

Supporting Europe's entrepreneurs

These issues were recently examined in-depth in a study entitled Business dynamics: Start-ups, business transfers and bankruptcy. Three key conclusions emerged. These were a need to reduce regulatory complexity, which has a considerable impact on entrepreneurial activity; a need for an integrated approach in improving the regulatory framework; and a need for this regulatory framework to be more supportive towards entrepreneurs.

While the Business Dynamics report found that licensing complexity has a low impact on the creation of new firms and total entrepreneurial activity, it suggests that more streamlined regulation could lead to quicker access to market, resulting in marginal GDP gains. It also found that awareness of regulatory procedures among businesses needs to be increased; a recent

Eurobarometer survey found that only a few respondents were aware of the licenses and procedures involved in setting up a business.

Furthermore, the study estimated that while 450 000 firms with 2 million employees are transferred each year across Europe, 150 000 companies with 600000 employees are not. Smaller businesses and those younger than three years old are most vulnerable to transfer failure. Businesses most closely related to their owner's skills and personality were often considered difficult to transfer. Thus, establishing a transfer-friendly regulatory framework is a priority. But while this is under development in many European countries, awareness of the practice is still low. The study found that while 16 countries have implemented more than 50% of European Commission recommendations on facilitating business transfers, the systematic monitoring of business transfer activity is still lacking. Support is therefore needed to create greater awareness, and to ensure a higher percentage of business transfers are successful.

Business dynamics also found that more than 40% of failed entrepreneurs are discouraged from restarting, not just because of the social stigma attached to bankruptcy, but because there are real impediments to restarting a business in Europe. When asked to identify the main problem for restarters, 37% of respondents to a study survey indicated difficulties in finding the necessary finance. This not only deters experienced entrepreneurs from re-entering business, but also spills over to create a more risk-averse culture, with a reduced entrepreneurial attitude. Putting in place suitable financing instruments for restarters should therefore be a priority.

Transfers and second chances

For these reasons, 'Transfers of Business' and 'Second Chance' were chosen as the main subjects of this year's European SME Week, which aimed to highlight and address Europe's under-exploited entrepreneurship resources. The European SME Week, whose first edition took place in 2009, is a key component of the European Commission's strategy to support small and medium-sized enterprises, which calls on the EU and its Member States to encourage entrepreneurship and innovation through its 2008 Small Business Act (further "SBA" only).

As part of the SME Week, a summit was held at the European Parliament on 6 and 7 October to discuss these two issues, in order to raise awareness and remove the stigma of failure attached to unsuccessful ventures. The summit emphasised the fact that, besides being rewarding, taking over an existing business also promises a degree of stability, since transferred businesses usually come with a viable product or service and an existing customer base. Furthermore, statistics show that a transferred business has a significantly lower exposure to failure than a new start-up.

The findings of the Business dynamics study very much echo the Commission's Review of the SBA, which stressed the need for Member States to step up their efforts to support SMEs. The SBA Review also set out a series of actions to align the SBA with the priorities of the Europe 2020 strategy, the EU's growth strategy for the coming decade.

For example, the European Commission is currently promoting the application of the 'only once' principle, whereby public authorities and administrative bodies refrain from requesting the same information, data, documents or certificates which have already been made available to them in the context of other procedures. Under the umbrella of the European SME Week 2011, hundreds of events were held across Europe. The Austrian Chamber of Civil Law Notaries organised one of them, focusing on how to hand over a company successfully. Participants agreed that early planning of a company handover is the key to success, and recommended starting to plan some five to ten years ahead of the actual transfer. "The biggest mistake is failing to prepare professionally and in good time for the transfer," said Michael Umfahrer, chairman of the company law committee of the Austrian Chamber of Civil Law Notaries. Participants also agreed that company handovers are best tackled in a team effort.

A reluctance to deal with succession issues often stands in the way of early preparation, too. As company handovers are intrinsically personal matters – the handover of a lifetime achievement – company owners may easily be overtaxed by questions such as how they themselves and the company will fare in the future, who will take over the business, and whether there are family members able and willing to do so.

Another issue touched on was modernisation. If this is neglected for years, the cost burden of a takeover on the transferee, added to the required investment, can prove excessive.

Small- and Medium-sized Enterprises (SMEs) will be encouraged to participate across Horizon 2020 programmes through a new dedicated SME instrument. It aims to fill gaps in funding for early-stage, high-risk research and innovation by SMEs as well as stimulating breakthrough innovations. It is expected that through this integrated strategy around 15%, or €6.8 billion, of the total combined budgets of the "Tackling societal challenges" Specific Programme and the "Leadership in enabling and industrial technologies" objective will be devoted to SMEs.

A new dedicated SME instrument

The new dedicated SME instrument (similar to the SBIR model) will provide easy access with simple rules and procedures. According to Factsheet: SMEs in Horizon 2020* as of 30 November 2011, it will be used across all societal challenges and the enabling and industrial technologies. The new

instrument will encourage SMEs to put forward their most innovative ideas with an EU dimension. It will target highly innovative SMEs showing a strong ambition to develop, grow and internationalise, regardless of whether they are high-tech and research-driven or nonresearchconducting, social or service companies. Only SMEs will be able to apply for funding, even single company support will be possible to ensure market relevance and to increase commercialisation of project results. SMEs can decide how best to organise the project and with whom to collaborate, including subcontracting tasks if they lack in-house capabilities.

The instrument will integrate the specific SME measures of FP7 in one comprehensive, simple and easily accessible scheme. It covers the possibility to outsource research and development critical to the innovation projects of nonresearch intensive SMEs, currently supported under "Research for the Benefit of SMEs".

Support is provided in three different stages covering the whole innovation cycle (similar to the US SBIR model - *Small Business Innovation Research, http://www.sbir.gov*). US model is Three-Phase Program:

- Phase I. The objective of Phase I – is to establish the technical merit, feasibility, and commercial potential of the proposed R/R&D efforts and to determine the quality of performance of the small business awarded organization prior to providing further Federal support in Phase II. SBIR Phase I awards normally do not exceed $150,000 total costs for 6 months.
- Phase II. The objective of Phase II is to continue the R/R&D efforts initiated in Phase I. Funding is based on the results achieved in Phase I and the scientific and technical merit and commercial potential of the project proposed in Phase II. Only Phase I awardees are eligible for a Phase II award. SBIR Phase II awards normally do not exceed $1,000,000 total costs for 2 years.
- Phase III. The objective of Phase III, where appropriate, is for the small business to pursue commercialization objectives resulting from the Phase I/II R/R&D activities. The SBIR program does not fund Phase III. Some Federal agencies, Phase III may involve follow-on non-SBIR funded R&D or production contracts for products, processes or services intended for use by the U.S. Government.

A feasibility part will allow an assessment of the technological and commercial potential of a project; a main grant will be provided to undertake research and development with the emphasis on demonstration and market replication. The commercialisation phase will be supported indirectly through simplified access to debt and equity financial instruments as well as various other measures, for example on IPR protection. Successful completion of one stage will allow an SME to move on to the next, each stage will be open to all SMEs. Relying on existing SME support networks, notably the Enterprise

Europe Network (further "EEN" only), a mentoring scheme shall be provided to beneficiaries so as to accelerate impact from funding under the SME instrument. SME Associations may continue to assist and to support their member companies in a European project as part of an SME-led consortium formed under the SME instrument. Such Associations will thus be able to play an important role in the dissemination of project results. A specific action will promote market-oriented innovation of R&D-performing SMEs, building on the Eurostars Joint Programme. Furthermore, SMEs will be encouraged to participate in other parts of Horizon 2020, such as the Marie Curie Actions or the activity on Future and Emerging Technologies.

Financial instruments (equity and debt) will support SMEs

Greater use of financial instruments will help leverage yet further private research and innovation investments, including venture capital investments for innovative, high-tech companies, and in particular SMEs. Under Horizon 2020, a total amount of € 3.5 billion is budgeted for financial instrument facilities, and accompanying measures, for research and innovation At least one-third of this amount will be dedicated to SMEs and small mid-caps. A leverage of up to 5 is envisaged, meaning that for every Euro provided through the financial instruments, additional finance of up to 5 Euro will be generated.

Two financing facilities will be available:

- A debt facility providing loans, guarantees and other forms of debt finance to entities of all forms and sizes, including research and innovation-driven SMEs
- An equity facility providing finance for early- and growth-stage investments, with a particular focus on early-stage SMEs with the potential to carry out innovation and grow rapidly.

Their aim will be to support the achievement of the R&I objectives of all sectors and policy areas crucial for tackling societal challenges, enhancing innovation and fostering sustainable growth. They will be implemented via a mandate to, or a partnership with, the European Investment Bank Group and/or other international financial institutions and national intermediaries. These Horizon 2020 facilities will be operated in conjunction with the financial instrument facilities of COSME, the Programme for the Competitiveness of Enterprises and SMEs, where €1.4 billion has been allocated to debt and equity financing in support of SMEs.

Let's have a look at the procedure for applicants of support within the United States Small Business Innovation Research (further "SBIR" only) model.

- Are you a small business?
- Are you exploring research and development (R&D) opportunities?

- Are you interested in receiving funding to develop technological solutions to a wide range of issues identified by Federal Government Agencies?

Congress introduced the Small Business Innovation Research (SBIR) and the Small Business Technology Transfer (STTR) programs just for you! Every year, participating Federal Agencies award more than $2 billion in small business government grants through these programs.

Eligibility Criteria

To participate, a company must:
- Be a small business with 500 or fewer employees
- Be independently owned and operated
- Be organized for profit
- Have its principal place of business in the United States
- Be at least 51 percent owned by U.S. citizens or lawfully admitted permanent resident aliens

In addition:
- The primary employment of the principal investigator must be with the small business
- The proposing firm must perform at least 2/3rd of the R&D work in Phase I and at least 1/2 in Phase II

Getting Started

The U.S. Small Business Administration (SBA) Office of Technology oversees the SBIR and STTR Programs. Through these two competitive programs, SBA ensures that the nation's small, high-tech, innovative businesses are a significant part of the federal government's R&D efforts. Participating Federal Agencies post solicitations throughout the year. Small businesses compete by submitting proposals to these agencies. A winner in the competitive solicitation process is awarded a grant.

SBIR Program

The SBIR program provides funding to small, high-tech businesses to research, design, develop, and test new technology ideas related to specific needs defined in competitive solicitations floated by the federal agencies. The program stimulates technological innovation by funding new ideas that would not otherwise be funded, and helps introduce small business solutions into the

market and to meet a wide range of Government research priorities, from national defence and renewable energy systems to new medical or educational solutions.

STTR Program

Congress started the STTR program in 1992. The program funds cooperative R&D partnerships between a small business and a research institution such as a university, Federal R&D centre, or a non-profit research institute. The STTR program is an effective vehicle for moving ideas from our nation's research institutions to the market, where they can benefit both private sector and military customers. Both the SBIR and STTR programs follow a similar solicitation and award process.

Submit a Proposal

Agencies post solicitations describing the technical areas and seek proposals from small businesses. Each agency has its own proposal submission guidelines. A few agencies follow an annual solicitation proposal cycle, while others float solicitations as the need arises. Agencies post solicitations on their sites as well as grants.gov. In general, an SBIR Phase I proposal submission package has the following components:

- Business Plan
- Executive summary
- Cost Proposal
- Technical Proposal

Next Steps

- Check out the currently open solicitations
- Find and apply for federal grants
- Check out upcoming events and workshops
- Take a look at past award winners
- Review the SBIR Policy Directive and the STTR Policy Directive for submission guidelines
- Search technology areas and identify opportunities where your firm is a good fit

There is necessary to decide under which Federal Agency the benefiter will develop his/her/its project. List of Participating Agencies:

- Department of Agriculture
- Department of Commerce

- National Oceanic and Atmospheric Administration
- National Institute of Standards and Technology
- Department of Defence
- Department of Education
- Department of Energy
- Department of Health and Human Services
- Department of Homeland Security
- Department of Transportation
- Environmental Protection Agency
- National Aeronautics and Space Administration
- National Science Foundation

Conclusion

Small innovative entrepreneurship in scientific and technical sphere is the most dynamic innovative sector of the economy, able to respond flexibly to market needs high technological production. As everywhere in the world, phase determination and initial development small high-technology organizations can effectively only be realized through state support, so the mechanism used to support small innovative firms through the programs of development of small enterprises in scientific and technical forms the sphere.

The countries' economies are under the influence of current global economic recession that has impact on small and medium sized enterprises as well. Since 1998 the world faces the difficulties that rose from countries foreign debts. Productivity and competitiveness of economic operators, whether firms, regions or States now depend on their ability to create, process and use information effectively. The problem is how the countries will pay back present loans. The most difficult way to solve the issue is to ask SMES to pay higher taxes.

References

[1] AN OFFICIAL WEBSITE OF THE UNITED STATES GOVERNMENT. 2011. Small Business Innovation Research, http://www.sbir.gov

[2] EUROPEAN COMMISION. 2011. Factsheet: SMEs in Horizon 2020* as of 30 November 2011. [15, 01. 2012] Retrieved from: http://ec.europa.eu/research/horizon2020/pdf/press/fact_sheet_on_sme_measures_in_horizon_2020.pdf#view=fit&pagemode=none

[3] EUROPEAN COMMISION, RESEARCH AND INNOVATION 2011. Competitive Industries. [15. 01. 2012] Retrieved from: http://ec.europa.eu/research/horizon2020/index_en.cfm?pg=competitive-industry

[4] TOMA, Branislav: Dlhová kríza oberá štát na úrokoch o milióny eur. Denník Pravda, EKONOMIKA, 15. januára 2012

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HOW TO IMPLEMENT INTEGRATED MANAGEMENT SYSTEM IN THE STARTING COMPANY

AKO IMPLEMENTOVAŤ INTEGROVANÝ MANAŽÉRSKY SYSTÉM V ZAČÍNAJÚCOM PODNIKU

Renáta TURISOVÁ

Abstract
This contribution focuses on the implementation of integrated management systems in enterprises that have been included into some corporation with established management system, respectively they become its strategic partner. We have outlined one possible way how to integrate these management systems.

Keywords: Integrated management system, quality, safety and environment management system

Abstrakt
Predložený príspevok je zameraný na implementáciu integrovaných manažérskych systémov v podnikoch, ktoré sa stali súčasťou nejakej korporácie so zavedeným manažérskym systémom, resp. takáto korporácia sa stala jej strategickým partnerom. Načrtli sme jeden z možných spôsobov ako je možné integrovať takéto manažérske systémy.

Kľúčové slová: Integrovaný manažérsky systém, manažérsky systém riadenia kvality, bezpečnosti, environment

Introduction

When company is bigger and wider, the need to address to the integration of at least one its essential features systematically is more urgent. Indeed, if we consider a small business or tradesman, he on small area alone, respectively with several colleagues integrates all managerial functions and so, for example, marketing activities immediately invert into production. Issues registered at the service to eliminate errors, and vision respectively strategic plans without any major noises are inverted to each control major, as well as support processes by natural way.

When the company grows, it is necessary to create separate positions, respectively all departments for the individual management functions or activities. Various noises, errors and misunderstandings arise on the basis of the above separation that usually ends up by building own kind of autonomy of various departments which in practice often leads to:

- formalism
- imperfect transmission of information,

- promotion the partial goals of department before the interest of the whole body, etc.

All these things ultimately lead to the existence of unnecessary costs that are hidden and become a part of the economy of each medium or large enterprise. Historically, also the implementation of management systems in enterprises was encumbered by this problem. In the end of the last century, when management theorists began notify the need of management systems for corporate management, implementation priority of quality management was generally preferred. In practice, this was resulted in prioritization of certification according to ISO standards series 9000. After it, the initiative addressed to environment was created, which in practice led to certification in accordance with standards series 14000, but both of these initiatives were initially carried out in individual enterprises independently. When it was subsequently joined the OSH area, in practice, it was reflected by the certification OHSAS 18000, the requirement for the effective integration was very earnestly. Redundancy of the same principles generally led to an intolerable increase of bureaucracy by growth of extensive documentation, which led to the unwillingness of senior management of enterprises, formalism, and consequently to reduction of the importance of management systems in control practice.

1 Integration of requirements

Every company integrates the requirements of all stakeholders, owners, employees, customers, etc. into their processes. In doing so, this integration can occur both intuitive, so randomly or systematically on the basis of certain assumptions of development. The foundation stone of this integration has to stand on its knowledge potential value and optimization of the portfolio, so the first main factor which define the method of integration. However the basic function of company is making a profit and a major factor which it influences is customer satisfaction with products of company; the quality requirement is dominant, which should be adapted to all processes in the enterprise. That product quality directly affects the generation of profits; its role in the integration is often viewed differently than those on the environment or health and safety. They are sometimes wrongly understood as requirements, which "unnecessarily" create adverse costs. The recognition of cross-correlations in pursuit of sustainability is the one of the main advantages of an integrated approach.

These three areas, quality, safety and environment, have been historically in the development of integrated management systems. They allow for companies through a variety of standards to guarantee the compatibility of their processes with the requirements of the standard.

1.1 Integrated management system

"The main goal of any integrated management system has to be fully taken into account and analysis of all company partial goals, minimize redundancy and use of synergy effect."

Integrated Management System is based on the vision of integrating these systems, as well as capital management system (standards of property-financial balance sheets, as well as management of information systems) that are oriented and aimed at sustainable development. The concept of comprehensive and real integrated management system incorporates a system of information security, as shown in Figure 1

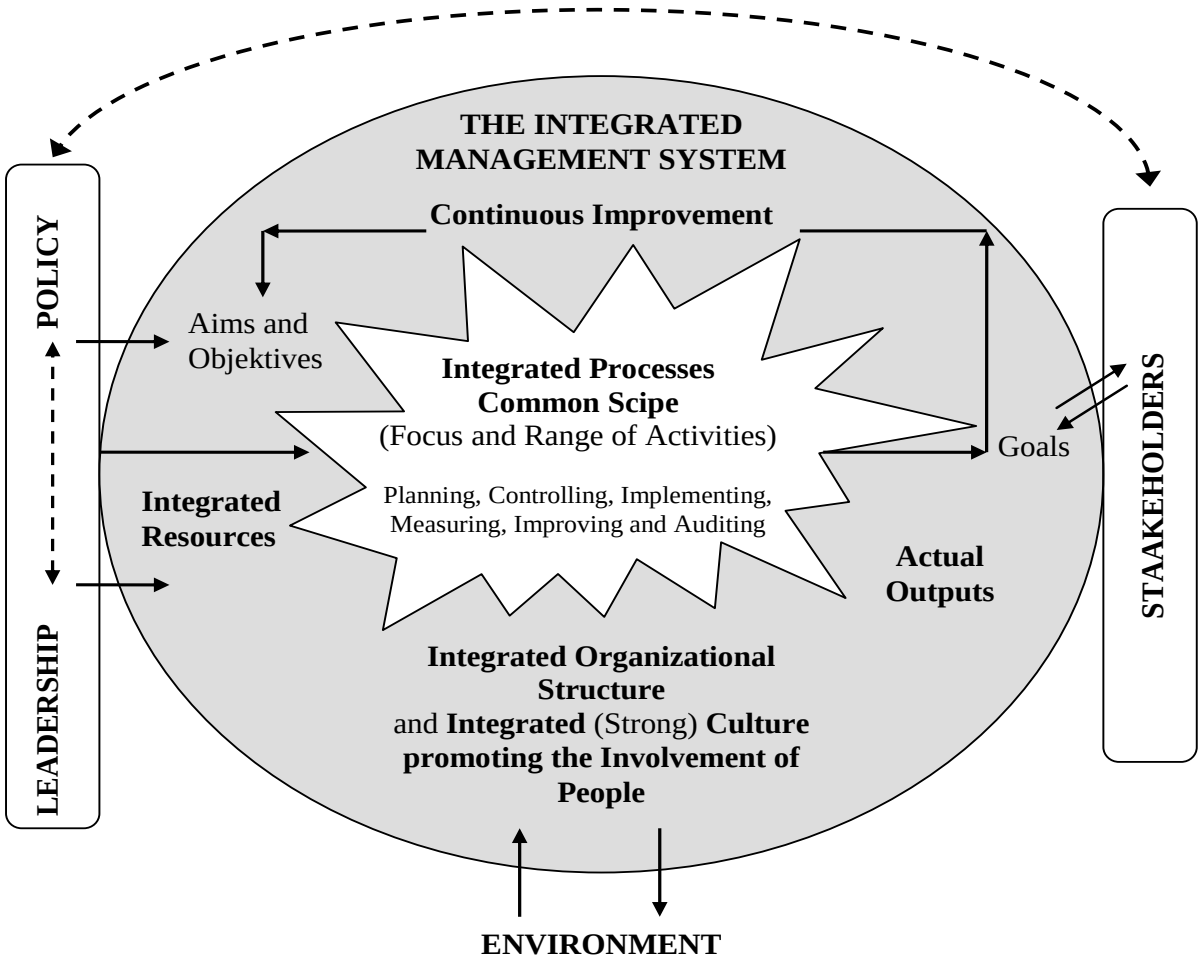

Figure 1
A model of an integrated quality, environment and safety management system
Source: Dale, B.G. 2003. Managing Quality.

The reasons for integration of systems and the advantages of it are (Hakulinová, Majerník, Tkáč, 2010):

- reduce duplication and thus the financial and material costs
- reduce risks and increase profits,

- balance conflicting goals and issues
- eliminate conflicting responsibilities and relationships
- meet and enhance business goals,
- formalization and standardization of information system
- harmonization and optimization of procedures,
- improving communication and streamlining documentation,
- learning and a continuously improving organization.

The concept of comprehensive and real integrated management system where an integrating factor is the information security system, is shown in Figure 2.

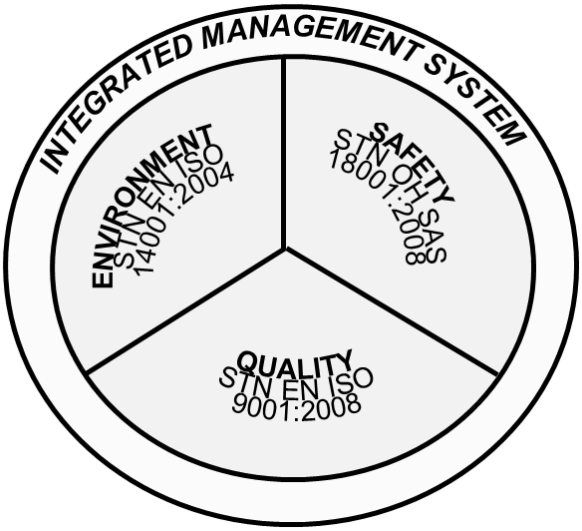

Figure 2
Integrated management system
Source: Own processing.

According to various theorists (Hakulinova, Majerník, Tkáč, 2010) the choice of integration method is based on an analysis of the status and level of management as well as other relevant aspects of the business, from baseline of management systems. Methodology selection is based on the integration of the initial situation which can be made using three basic approaches:

- **Approach of systems aggregation**. *Merging* is the process of integration of management systems to each individual separately refastened implemented management systems using their common elements. Integration procedure is based on the completion of all systems separately and then on their integration, respectively merger.
- **Additive approach**. *Addition* is the process of integration of management systems based on the principle of folding. It assumes that the organization has implemented and certified (more or less) and properly operated, maintained one of the systems management. This system can then be implemented by adding the integration of other aspects of management systems into existing structures, processes and procedures, and common

elements of the systems will be implemented only once, unlike mergers integration methodology.

- **The system engineering approach**. Integration of management systems by *total integration* means to build and implement a management system from scratch (Hakulinová, Majerník, Tkáč, 2010).

All business activities must be constantly checked to verify the compliance of their current status to goals. In the field of quality management it is largely an attempt to eliminate production of defective (nonconforming) products, products that do not reach a predetermined specification. Due to cost reduction it is necessary in preparation and design of production to evaluate individual risks and analyze them. It is therefore necessary to perform analysis on these changes in the preparatory phase. In environmental terms, risk do not arise only the production itself, but also in the subsequent disposal of the products or manufacturing equipment. Therefore, in risk assessment and these facts we need to pay attention.

Quality management is primarily concerned to processes, and environmental management mainly includes equipment and technology and management of health and safety at work systems and processes in relation technology - human. The constant pressure to improve the quality of production and service provision to comply with environmental, safety requirements and the related shortening innovation cycles, is forcing companies to seek ever new forms of management of their processes. In the context of pursuing sustainable development principles in all spheres and areas of economic activity appears to be necessary for such an approach and application of integrated management systems.

1.2 Integrated management system with inheriting

In practice, there is also other way of implementation, by other authors in the previous section not described, which initially occurs mainly in Central Europe and Slovakia in particular. This is the introduction of an integrated management system with inhering. After the fall of the Iron Curtain, companies in Central Europe began integrate into European economic structures.

Started the process of globalization will further accelerate this integration. And so it happened that many of the traditional Slovak relatively successful producers were "overwhelmed" by international corporations. The new owner, respectively strategic partner usually bring their own corporate culture and management system to Central European companies. Regardless the previous company experience, respectively if it had functional management system, the new owner, respectively strategic partner in vast of majority ignore and often very prescriptive "forced" company management to adapt the conditions existing throughout the corporation. Despite this, the theoretical background for ensuring the functionality of integrated management systems necessitates their "tailored"

development according to the specific needs of the business. The basic principles have been imported inadequately and often in unfortunate way in the mentioned companies. In practice, this was reflected also by the immediate interruption of contact with existing certification companies and mandatory directed certification company used by the corporation. This has led in many cases in subsidiaries to the large formalism and on side of the corporation to the notion that the companies have not built up enough corporate culture and thus are unable to effectively meet their needs. Partial replacement of senior management and the accompanying disruption of contacts with the previously cooperating consulting companies and their replacement by new, often compounded by the speech barrier meant that the companies have often re-built functional management systems and replacing them with something which in practice did not serve improvement. It is therefore necessary to describe the theoretical way of introducing such management system, which according to our practical experience should be based on:

- precise knowledge of the status quo,
- fair comparison with the existing of management system required state under corporations,
- detailed description of the differences between these two systems,
- setting goals and timetables for their achievement,
- determining how to meet the mentioned goals by making full use of existing office of management system,
- implementation of that procedure,
- verifying the functionality of the modified management system.

This procedure is able to ensure efficiency and continual improvement of management system throughout its implementation. Please note that this is a lengthy process because it often requires a radical change to the corporate culture. On the other side open up new opportunities and resources that previously were not available to the company is usually an advantage in implementing such system.

Conclusion

Integrated management systems mean very convenient way how to create a management system that considers both quality products and services but also access to the environment, health and safety at work, information security and social responsibility. Except this, the systematic approach will ensure the orientation of the legislative requirements and their fulfilment; will reduce administrative complexity and conserves resources. That the process of implementing an integrated management system has not been long and costly it is necessary to correctly identify a strategy for such integration.

In the present paper, we outline how the existing management system can effectively be transformed to integrated management system, as we showed in the introduction, which has one of the most important features, namely, that reflects the requirements of all stakeholders. Therefore, if a company owner changes, respectively will become part of some large corporation, it is appropriate to implement the introduction of an integrated management system by method proposed in this paper.

This contribution is the result of the projects implementation: Project VEGA No. 1/0102/11 - Methods and techniques of experimental modelling of in-house manufacturing and non-production processes.

References

DALE, B.G. 2003: Managing Quality. Blackwell Publishing Ltd. 4th ed. ISBN 0-631-23614-7

HRUBEC, J. a kol. 2009: Integrovaný manažérsky systém. 1. vyd. - Nitra : SPU, 2009. - 543 s. - ISBN 978-80-552-0231-0

HAKULINOVÁ, A., MAJERNÍK, M., TKÁČ, M. 2010: Integrovaný manažérsky systém ako nástroj efektívneho riadenia podniku. In: Podniková revue. Roč. 9, č. 18, 2010, s. 56-66. - ISSN 1335-9746

SZABO, S., KOBLEN, I. 2010: Vybrané aspekty integrácie bezpilotných lietadlových systémov do letovej prevádzky. In: Zvyšovanie bezpečnosti a kvality v civilnom a vojenskom letectve : zborník z medzinárodnej konferencie. Žilina, 22.-23.4.2010. - Žilina : ŽU, 2010. - ISBN 978-80-554-0184-3. - S. 179-187

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SUCCESSFULL INTERSECTORAL ACTION IN HEALTH

ÚSPEŠNÉ MEDZIODBOROVÉ AKCIE V ZDRAVOTNÍCTVE

Nina SZCZYGIEŁ – Małgorzata RUTKOWSKA-PODOŁOWSKA – Łukasz POPŁAWSKI

Abstract
Modern understanding of health has evolved over time and so nowadays aspects of health have moved beyond of what the health sector can handle on its own. International community increasingly recognizes the potential and importance of intersectoral collaborations as a fundamental element of health and social strategy. Partnering across sectors encompasses particular concepts of collaboration, bearing in mind different areas of action, ranging from the strategy development, planning exact structures and processes, up to implementation of the project throughout the system and partners. This article aims at illustrating the phenomenon of intersectoral action on the conceptual level, focusing especially on question of health care services provision. We describe intersectoral collaboration construct and its relevance as a feature of a health system. We deem multiple and coordinated strategies encompassing a number of actors as a premise for vital developments in light of health and social challenges societies are facing worldwide.

Keywords: intersectoral action, collaboration, partnership, health, sector, policy, strategy, success

Introduction

The World Health Organization emphasizes that the health of populations is determined not by health sector activities alone but by social and economic factors, and hence by the policies and actions beyond the mandate of the health sector. It is thus important for the health sector to work in collaboration with other sectors to raise awareness of the co-benefits of acting together for people-centered policies that promote health (WHO, accessed 10 January 2012). The Alma-Ata Conference mobilized a "primary health care movement" of professionals and institutions, governments and civil society organizations, researchers and grassroots organizations that undertook to tackle the unacceptable health inequalities in all countries (WHO, 2006). Intersectoral approach was a fundamental principle of the Alma Ata Declaration, and is one the four pillars of Primary Health Care as laid out in WHO World Health Report 2008.

Clearly, the demographic challenge of an ageing population is a real one and has been pressing concern of social policy makers for more than a decade (Pierson, 2004). In an ageing society with an increasing care services demand and scarce resources there is an urgent need to provide tools and methodologies

to guarantee and improve the continuity of care (Herbert et al., 2003: pp. e08). Above efforts strengthening linkages between sectors attention needs to be driven into promoting a conscious, aware and empowered system user.

1. Intersectoral action: conceptualization

Partnering across sectors can be defined as a process of forming common initiatives within at least two from three sectors, which compose socio-economic reality. These three sectors of society comprise government, business and civil society. The purpose of intersectoral partnership (ISP) moves beyond multiple organizations working together to accomplish what a single organization would not be able to achieve. Collaboration involves activities between different professional and occupational groups, functions, institutions, levels of intervention, as well as those for whom the collaboration seeks to benefits.

A cross-sector partnership is a strategic alliance:

- of organizations representing different sectors of economic and social reality,
- established with an objective of cooperation between each other,
- into which all partners contribute, by their unique skills and resources,
- within which all involved partners jointly bear the risks and costs,
- and share the benefits achieved throughout achieving common goals and individual members' objectives.

Depending on the body initiating the common action, partnerships divide into:

- partnerships established from the initiative of individuals, often local partners, who wish actively influence their environment,
- local partnerships, built from the initiative of entrepreneurs, business or professionals organizations,
- partnerships created from the initiative of public bodies.

Although there is considerable variation in use of terms, collaborative practice models usually refer to several common change strategies and levels of working together. These can be broadly grouped as: networking and communication; cooperation and coordination; collaboration, integration and "whole of community" partnership'. These strategies tend to build upon each other along a continuum of complexity and commitment (Himmelman, 1992). Intersectoriality constitutes a concept that should lead to new rules and regulations of planning, implementation and control of the service provision (Junqueira, 2000: pp. 37). Intersectoral policy is based on the assumption that only integrated action of several sectors opens a possibility to significant, positive impact on the health of a population. Cross-sector partnerships can help reduce duplication of effort and activity that works at cross-purposes; they can also stimulate innovation and unusually creative solutions if the diverse goals of

participants can be addressed. In effect, ISPs can produce activities in which "the whole is more than the sum of the parts" (Waddell and Brown, 1997: pp. 1-2).

2. Premises of a successful cross-sector collaborative initiative

Crisis of the public finances makes obligatory search for alternative ways of financing public services and public tasks.

As experience shows, intersectoral partnering may increase social cohesion while producing sustainable structural and social change (Ministry of Health, 2005; Peake et al., 2008) and have demonstrated a great success when one-sector initiatives failed.

Early cross-sector experiences shared the following characteristics (Reese et al., 2002: pp.15):

- high transaction costs due to the newness of the approach, miscommunication regarding the goals and objectives of the various partners, and culture clashes among sectors,
- lack of an agreed upon definition of what constitutes a "partnership" as opposed to other kinds of relationships between sectors, leading to confusion over roles,
- the development of a special initiative around a specific issue or program (which was therefore considered short-lived by some observers),
- an ad-hoc, unsustainable approach, often a last resort or a response to extraordinary circumstances (a natural or man-made disaster, for example),
- initial bursts of enthusiasm punctuated with recurrent frustration as representatives of different sectors struggled to learn how to work with one another,
- the availability of evaluation data on the results of a specific ISP program, but not on the ISP approach/strategy itself, leading to difficulty in pinpointing the "value added" of this approach as opposed to alternative approaches,
- sufficient positive returns to ensure ongoing commitment to the ISP concept.

Researchers from Amherst H. Wilder Foundation determined main factors influencing the success of collaborative efforts. These include (Mattessich et al., 2001):

- mutual respect, understanding and trust,
- appropriate cross-section of members,
- open and frequent communication,
- sufficient funds,
- skilled convener,

- members see collaboration as in their self-interest,
- history of collaboration or cooperation with the community,
- members share a stake in both process and outcome,
- multiple layers of decision-making.

Their report comprises a description of each factor, implications for collaborative efforts, and illustrations from case studies. Focusing specifically on health purposes, as essential factors for effective intersectoral collaboration the Canadian Public Health Agency (Public Health Agency of Canada, accessed 14 January 2012) mentions:

- articulation of common values base and language,
- fostering trust,
- demonstrating flexibility and tolerance for instability, starting collaboration vertically, then horizontally, observing the opportunities,
- collaborating with provincial, municipal or other governments,
- collaborating with regional health authorities,
- collaborating with other federal departments,
- collaborating with community-based groups,
- collaborating with university researchers.

Fedorowicz and colleagues (2007) draw attention to factors which affect a collaborative network (look Table 3).

Table 3
Factors which influence collaborative networks

Factor	Examples of factors
External environment	
Critical events	Elections, new administrations; crises; media, interest group, or public demands
Economics	Competitive pressures and agreements; economic conditions (employment, recession, inflation, etc.); Federal, state, or local budget deficit or surplus; fiscal timing
Politics	Federal, state, and local laws and regulations; President's agenda, election politics and outcomes, partisan division within and/or between branches of government, separation of powers, federalism, public opinion
Agency context (for each participating agency)	
Strategy	Institutional charter, vision; objectives, priorities
Governance	Membership, roles, relationships, delineation of authority, policies or directives
Resources	Availability of staff, funding for R&D, experimental projects, ongoing operations
Processes	Operations and procedures
IT infrastructure	Compatibility and interoperability of networks, applications, databases
Collaborative network	
Strategy	Collaborative agreement and/or charter, vision, objectives, priorities
Governance	Membership, roles, formal or informal relationships, delineation of authority, policies or directives
Resources	Funding sources; operational business model
Processes	Collaborative and inter-organizational operations and procedures which implement decisions and support activities related to strategy, governance, and resources
IT infrastructure	IOS*

*interorganizational system

Source: Fedorowicz J., Gogan J.L., Williams Ch.B. (2007). A collaborative network for first responders: Lessons from the CapWIN case. Government Information Quarterly 24 (4): pp. 789.

On the other hand, from his experience as a broker, McKinnon (2009) emphasizes that health is one of the more complicated fields, where cooperation between sectors, public and private, has not necessarily been as beneficial to all parts and easy in terms of implementation as in others. McKinnon presents six tenets that have proved instrumental to developing mutually beneficial public-private partnerships:

- accept that "doing good" and "making money" are not mutually exclusive ideas but rather potentially complementary ends,
- leverage differences,
- do not let the perfect be the enemy of progress,
- design well,
- manage expectations,
- start with a more relevant shared objective.

Experience with intersectoral partnering has revealed a number of necessary conditions to be met while considering the multi-sector approach. These are discussed by Charles and McNulty (2003: pp.8):

- The focus must be a common issue that is important to all partners. Potential partners need to determine why forming an ISP is necessary to address a problem, how key actors are affected by the problem, and to what extent resources from the different stakeholders are required. While partners may hold very different points of view, the partnership should focus on the overlapping areas of interest.
- Belief in partnering as a strategy. Each actor must believe that this strategy can improve the outcomes compared to the status quo. They must be willing to treat each other as equal partners.
- Perception of equal power and influence in the relationship. An important factor in determining the long-term success of a partnership is a belief from all partners that there is approximate parity of power and influence in the relationship. There should be a clear understanding of each partner's comparative advantage, and all parties should believe that they have leverage on decisions affecting the partnership.
- Willingness to commit the particular resources that it is able to share. Continued mutual influence depends on everyone's resources being valued and used. Thus, implementation programs need to be designed to make use of the comparative advantage of different participants.
- Dynamic, committed leadership. The interest and commitment of the leadership of partner organizations is critically important if the partnership is to address and resolve issues that inevitably develop.

Charles and McNulty (2003: pp.8) highlight also that partners must also recognize some requirements for the process of partnering to ensure successful partnerships:

- The partnering process requires a long-term commitment. How slowly a partnership evolves will depend on the broader enabling environment as well as the specific rules and incentives adopted. It is important for the partnership to remain open to new partners as the activity evolves. Issues may redefine themselves over time.
- Partnerships require a sincere commitment from all partners. Partners must develop a commitment to respect their differences. Partners should also be prepared to commit time and resources before the collaboration takes off. Furthermore, partners must be committed to making their motives clear to each other and be willing to hold each other mutually accountable.
- Partnerships are more effective when their members pay attention to both process and product. There are both process and product outcomes of any partnership. Focusing on just one or the other will lead to failure. The way decisions are made, the way meetings are conducted, and the level of participation all affect the products and outcomes of the partnership. At the same time, decisions and programs that produce concrete results on issues that originally stimulated the partnership are critical to partners' evaluation of it.

3. Discussion

With no doubts, there is a pressure on the change in the paradigm of the cooperation between care services providers. Investigations show that the provision is coordinated only at the individual level and the information flow between the entities is considerably low. The cooperation and integration, mainly in what information is concerned, is believed to be a conceivable answer to the inefficiency and redundancy problem and technology plays a significant role in this process. A good information system can contribute to better planning, treating and routing patients, better access to external information and knowledge and decisions timing. The fundamental goal is to introduce an existing theory and to develop methodologies that can bring significant insights to practice in care provision. Possible outcomes of intersectoral action, such as cost reduction and increase of the productivity and quality of services, have a strong impact on the standard of living and the society perceptions. The improvement of the health system effectiveness may lead to a better care services provision and to meeting the system users´ needs in a more efficient and human way. Cross-sector collaborations will fructify with tangible and palpable outcomes and it will certainly influence on citizens´ satisfaction. These fundamentals may be considered an answer to the exigency of improvement of the health and social systems, which are a concern object of successive governing parties.

An important component of the strategic planning for health and social care systems consists of the analysis of how to guarantee citizens the quality services provided in an efficient way. That is why satisfaction needs to be perceived as a valuable management tool. As a response to challenges occurring in care provision, the manifest failure in making the system sustainable in the medium and long term, the intersectoral approach toward collaboration may be the recommendable solution to be taken into account. The experience shows that intersectoral partnerships may increase social cohesion while producing sustainable structural and social change and have demonstrated a great success when one-sector initiatives in the field have failed. The potential underlying in sectoral disparities makes ISPs beneficial in forming innovative solutions. Depending on a country-specific context, projects may engage different partners, within different settings and several cooperation modes. Partnerships thus can vary from a quite informal structure, through more coordinated forms of collaboration, where partners share resources and responsibilities at different level, into forming a unique body for the purpose of the initiative. What distinguishes these partnerships are the intensity of linkage, formality of agreement and complexity of purpose. Among potential partners, autonomies, town and district councils, municipalities, health centers, hospitals, non-profit institutions, fire departments or enterprises can be mentioned. Working together with different groups, different background and experience can help increase resources and expand the scope of the intervention. Continuous and structured information exchange between partners determines the quality of the collaboration and prerequisites further improvements of the learning organization. Improving individual capacities and sharing the experience with partners will consequently make profits to the whole network.

Conclusions

Reducing inequalities in health and guaranteeing citizens accessible quality health care goes currently beyond the capacities of the health care system on its own. Demographic and economic challenge puts policy makers under pressure on how to organize and manage the system in eyes of budget limitations, and urges out of the ordinary projects on economic and social policy basis. Such initiatives should involve actors from different sectors, each of them designed purposely to address a given issue.

Health is a too complex issue to be able to be dealt with separately by the health sector alone. Health promotion policy, specifically, is cross-sectoral in itself. Its main objective is to build supportive environment enabling people to live healthy lives and make healthy choices. The role of government, as a sector, in shaping conditions conductive to health, is unquestionable. However, other actors, such as trade unions, business partners, religious leaders, non-governmental organizations, also exert a significant impact on society's health.

A success of a collaborative arrangement depends of a number of factors and differs from setting into setting. It is highly recommendable to get acquainted with defined elements influencing a possible intersectoral action and features determining its success. Nevertheless, each cross-sector initiative needs to be analyzed individually at the planning stage in order to define additional, local and setting-specific key factors.

References

1. Charles, Ch.L., McNulty, S. (2003). Intersectoral Partnering to Promote Democracy and Governance. Issue Paper. The AED Global Civil Society Partnership.
2. Fedorowicz, J., Gogan, J.L., and Williams, Ch.B. (2007). A Collaborative Network for First Responders: Lessons from the CapWIN Case. Government Information Quarterly, 24(4).
3. Hebert, R., Durand P.J., Dubuc, N., Tourigny A. (2003). PRISMA: a New Model of Integrated Service Delivery for the Frail Older People in Canada. Int J Integr Care, 3.
4. Himmelman, A.T. (1992). Communities Working Collaboratively for a Change. Minneapolis, MN: The Himmelman Consulting Group.
5. Junqueira, L.A.P. (2000). Intersetorialidade, Transetorialidade e Redes Sociais na Saúde. Rev. da Administração Pública 34(6): 35-45, Nov/Dez.
6. Mattessich P.W., Murray-Close M., Monsey, B. (2001). Collaboration: What Makes it Work, ed. Saint Paul, M.N. Amherst H. Wilder Foundation.
7. McKinnon, R. (2009). A Case for Public-Private Partnerships in Health: Lessons from an Honest Broker. Prev Chronic Dis, 6(2).
8. Ministry of Health (2005). New Zealand Intersectoral Initiatives for Improving the Health of Local Communities, 2005: An Updated Literature Review Examining the Ingredients for Success. Wellington.
9. Peake, S., Gallagher, G., Valentine, N. et. al. (2008). Health Equity Through Intersectoral Action: An Analysis of 18 Country Case Studies. WHO, Minister of Health, Canada.
10. Pierson, Ch. (2004). Beyond the Welfare State?: The New Political Economy of Welfare. Cambridge: Polity Press.
11. Public Health Agency of Canada. How to Develop Effective Intersectoral Partnerships. http://www.phac-aspc.gc.ca/ph-sp/case_studies-etudes_cas/horizontal_analysis-analyse_horizontale/how_develop-eng.php Accessed 14 January 2012
12. Reese, W.S., Thorup, C.L., Gerson, T.K. (2002). What Works in Public/Private Partnering: Building Alliances for Youth Development. "What Works" Series. International Youth Foundation.
13. Waddell, S., Brown, L.D. (1997). Fostering Intersectoral Partnering: A Guide to Promoting Cooperation Among Government, Business, and Civil Society Actors. IDR Reports. Vol. 13, Number 3.
14. WHO (2006). World Health Report 2006 – Working Together for Health. Geneva.
15. WHO. Track 4: Partnerships and Intersectoral Action. http://www.who.int/healthpromotion/conferences/7gchp/track4/en/index.html Accessed 10 January 2012.

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VENTURE CAPITAL – ONE OF THE IMPORTANT RESOURCES FOR FINANCING INNOVATION ACTIVITIES

RIZIKOVÝ KAPITÁL – JEDEN Z DÔLEŽITÝCH ZDROJOV FINANCOVANIA INOVAČNÝCH AKTIVÍT

Emília SPIŠÁKOVÁ

Abstract
The article deals with one of innovative financial instruments - Venture Capital. It theoretically defines Venture Capital and describes in which situations it is suitable to use it in various phases of company's development. The article also deals with the comparison of using Venture Capital Investment in V4 countries. It describes various Venture Capital Funds in Slovak Republic and amount of investment within these funds. It also deals with the comparison of absolute value of Venture Capital Investment in the individual phases of company's development and also with the comparison of value of the indicator expressing the share of investment on GDP. The final part of the article is focused on Business Angels as a group of entities providing this type of capital and on the use of Business Angels Investment in all four compared countries.

Keywords: Venture Capital, Business Angels, Venture Capital Funds

Abstrakt
Príspevok sa zaoberá jedným z inovatívnych finančných nástrojov, a to rizikovým kapitálom. Teoreticky vymedzuje tento pojem a popisuje, v akých situáciách je vhodné jeho používanie v jednotlivých fázach vývoja podniku. Zaoberá sa tiež porovnaním využívania investícií rizikového kapitálu v krajinách V4. Popisuje jednotlivé fondy rizikového kapitálu v Slovenskej republike a výšku investícií v rámci týchto fondov. Porovnáva nielen absolútnu výšku investícií rizikového kapitálu do jednotlivých fáz vývoja podniku, ale aj hodnoty ukazovateľa vyjadrujúceho podiel investícií na HDP krajiny. Záverečná časť príspevku sa venuje využívaniu investícií obchodných anjelov vo všetkých štyroch porovnávaných krajinách.

Kľúčové slová: rizikový kapitál, obchodní anjeli, fondy rizikového kapitálu

Introduction

European Private Equity and Venture Capital Association (EVCA) defines Venture Capital as financial resources putted through the venture fund into the equity of unlisted companies, which is used for financing the initial activities of the companies and for financing innovative and development projects related to high risk (EVCA, 2009). It is mainly used by small and medium-sized enterprises (SMEs) with the lack of own financial resources and

experience in business management, which are not led by professional managers.

It is a source to finance starting-up activities, the development or expansion, when venture capitalist obtains an agreed share of the equity of the company for providing a certain amount of financial resources.

Venture Capital is a partnership of entrepreneur and investor. Investment of Venture Capital is not nonrecurring grant of financial resources, but a long-term process of the co-existence of enterprises with venture capital investors. Investor usually obtains a minority share in the company. He participates in the adoption of essential decisions of the company, but he leaves the common operation of the company on original owners. If the company is unsuccessful, the investor loses invested resources. On the other hand, if the company is successful, a minority share may realize a multiple valorisation of investments. The investor achieves returns or profits only when they are achieved by entrepreneur. It is a high risk investment; therefore the investor requires a high rate of return on investment project, i.e. approximately from 30% to 35% of returns, someone even 40% of returns.

Venture Capital is currently one of the most common resources of funding innovation activities of SMEs in developed countries in the world. For the most important subjects providing Venture Capital are considered individuals, banks, governments, universities and pension funds. As an example, in Germany, Spain and Italy is the public sector a major source of Venture Capital Investment, while in the United Kingdom are pension funds (Baláž, 2000).

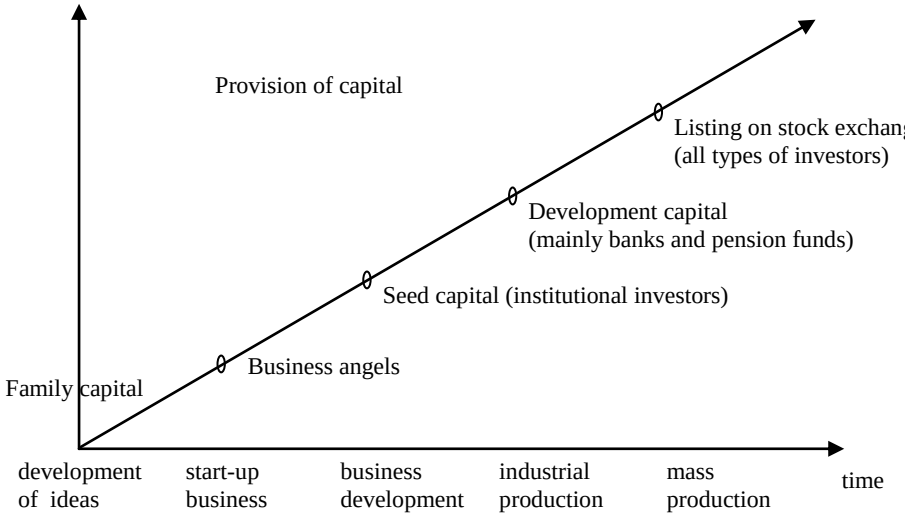

Figure 1
Provision of Venture Capital in individual phases of innovation cycle
Source: (Baláž, 2000)

Venture Capital can *be formal*, i.e. Venture Capital Funds are created by institutional investors, or *informal*, i.e. Venture Capital Funds are created by companies or individuals. Informal capital is used primarily in early stages of

the innovation cycle, formal capital at the time of expansion or in final stage (Fig. 1).

1. Types of Venture Capital Investment and the entities that provide Venture Capital

The entities that provide Venture Capital are different in criteria concerning the size and duration of investment, the sector of operation of the company, but primarily they are different in focusing on a specific phase of the company's development (investment stage of the company) according to the evolution of life curve of the company. In general, the various phases of the innovation cycle are different capital intensive. In practice we know several different types of Venture Capital offering, depending on whether it is an investment into the company for the purpose of [2]:

- *financing of beginning activities of the company*
  - **Seed capital** - This type of capital is used for financing the costs of research and development of new products or for supporting start-ups. This is a very risky investment with long payback period, therefore only a very small part of Venture Capital Funds are invested there.
  - **Start-up capital** - Capital is focused on the initial activity of the company, which already has prepared product, management team and market surveys are completed. This is about financing the purchase of stocks and fixed assets. Here is very important a high degree of cooperation of the company management with venture capital investors, because investor can facilitate market entry and can reduce the time when the company begins to make profits. This phase is high risky and there is invested very small part of Venture Capital Fund.

- *development and expansion of the company*
  - **Development capital** - It is Venture Capital, which is used for financing the various phases of life cycle of the company and for ensuring its further development. It is used for financing the initial development, when Venture Capital enters to the company, which exists a relatively short period of time, profits are low, the company has no access to loans, but it has a potential for further development. It also may be used for financing the later phases of development of the company, when Venture Capital enters into the company existing for a long time and this company wants to significantly expand through new technological innovation. To the development financing is devoted a substantial part of Venture

Capital Funds (approximately 60%). Risk of failure is in this phase significantly lower and the payback period is shorter than in previous phases.

- *survival of the company*
  - **Debt replacement capital** - This capital is used when the company is heavily in debt and large part of the profits must be used for paying interest. Debt replacement prevents further inability of the company to pay debts, but investor of Venture Capital requires an equity share as a compensation for paying the debt.
  - **Rescue capital** - Capital is used when the company is threatened by bankruptcy and it can not continue in its activities. This type of financing is usually combined with other types of Venture Capital, for example transaction financing. The condition for granting rescue capital is an existence of growth capital program, which will allow the expansion of the company after its rescue.

- *changes in ownership of the company*
  - **Transaction capital** - This capital is used for purchase the company or its part, for enterprise's affiliation or management repurchases by their own managers (management buy out) or foreign managers (management buy in). It is the financing of existing companies those results are known and the risk of failure is relatively low.

Different types of Venture Capital Investment have different properties, characteristics. They differ in the time duration of investment, in the expected yield, in the number of companies offering this type of financing, but also in a degree of risk associated with investment (see Table 1).

Table 1
Characteristics of different types of Venture Capital Investment

Type of investment	Time duration (in years)	Expected yield (% p.a.)	Percentage of companies offering this type of financing	Degree of risk
Seed	7 - 12	till 100%	1 - 2%	very high
Start - up	5 - 10	35 - 50%	5%	more high
Initial phase	4 - 7	30%	10%	medium
Development phase	2 - 5	25%	50%	low
Transaction phase	2 - 4	20 - 25%	100%	very low

Source: (Dvořák, Procházka, 1998)

Venture Capital is provided by a large number of different entities operating in developed markets of Venture Capital. These entities can be divided into three main groups, namely (Freňáková, 2007):

- **Venture Capital Investors**
  - *institutional investors:* These are banks, insurance companies and pension funds, which invest the financial resources managed by them into the existing Venture Capital Funds. The motive of investment is to valorise their financial resources and to achieve return on investment.
  - *individuals* (Business Angels),
  - *corporate investors,*
  - *state - funded organizations*.
- **Clients -** target companies that seek financial resources.
- **Venture Capital Funds** - specialized companies, i.e. active Venture Capital Investors. These funds act as intermediaries between investors and clients.

2. Comparison of the use of Venture Capital in V4 countries

Venture Capital Funds that provide Venture Capital in Slovak Republic are focused primarily on start-ups, their innovation activities through this capital (Fond fondov, 2010).

- **Start-up capital fund** is a revolving fund established in 1995. It is centred on the support of innovative SMEs in Slovak Republic. Financial resources are used in seed, start-up or development phase of the company whereby the maximum amount of investment, which the company can obtain from this fund, is 663 878 €.

- **Regional start-up capital fund** was established in 2003 and its resources are designed for the support of the development of SMEs in Banská Bystrica, Žilina, Košice and Prešov regions. It differs from the previous one in geographical eligibility of projects and the available volume of investment that the enterprises can obtain, i.e. maximum of 165 970 €.

- **INTEG fund** is focused on the support of innovative projects of companies from the area of industry production, manufacturing, business services and new technologies, which are involved in technological incubators of Slovak University of Technology in Bratislava and Inova Tech incubators in Sládkovičovo. To the seed phase and start-up phase can the companies obtain maximum of 132 776 €.

- **Fund SISME** was established together with the INTEG fund at the end of 2005. Its financial resources are intended for innovative projects from all

over the Slovak Republic especially in seed and start-up phase. The fund provides financial resources up to a maximum 165 970 €.

- **Fund Seed Capital** allows to obtain financial resources at a maximum of 331 939 € to invest them into the seed phase of innovative SMEs in Slovak Republic. This form of financing may be supplemented by the provision of credit.

- **Slovak Development Fund** was established in 2006 in cooperation with Slovenská sporiteľňa, a.s.. It is concentrated on the support of SMEs through Venture Capital, and thereby it tries to contribute to the improvement of business environment in the country. The companies can obtain from this fund financial resources up to 1 659 696 €, which are used for financing start-up a development phase of the company.

Amount of approved investment in various Venture Capital Funds since 2006 and 2010 (with the exception of 2009 in which accurate statistics for the individual funds are not available) is described in the following table (Table 2). Cumulative since the inception of the found until the year 2010 were realized 211 investments in amount of 73 million €.

Table 2
Amount of approved investment in various Venture Capital Funds in Slovak Republic

	Amount of investment			
	2006	**2007**	**2008**	**2010**
Start-up capital fund	955 985	448 118	1 845 582	264 496
Regional start-up capital fund	116 179	0	165 970	38 878
INTEG Fund	0	0	0	0
Fund SISME	331 939	0	0	6 132
Fund Seed Capital	232 357	165 970	6 881 099	1 676 438
Slovak Development Fund	248 954	663 878	3 452 168	0
Slovak Growth Capital Fund	3 983 270	6 837 947	0	9 345 610
Total	**5 868 685**	**8 115 913**	**12 344 818**	**11 333 564**

Source: (NADSME, 2006, 2007, 2008, 2010)

Venture Capital is not currently frequently used form for financing the innovation activities in Slovak Republic (Table 3). The reason is mainly insufficient number of entities providing this capital, because it is an investment into high-risk business activities. Increasing of Venture Capital Investment is also limited by the necessity of introducing necessary changes in legislation and economic development itself. Its use can also hinder the underdeveloped capital market and insufficient investment in science, research and development in the companies. In 2007 and 2008 Venture Capital was used mainly in buyout phase

of the companies. In 2009, the use of Venture Capital was very low. The companies in Slovak Republic used this capital only in development phase. In 2010, Slovak enterprises used this type of capital mainly to ensure further growth and they first used it to finance the initial phase of the business.

Table 3
The use of Venture Capital for financing different development phases of the companies in Slovak and Czech Republic (in thousand €)

	Slovak Republic				Czech Republic			
	2007	**2008**	**2009**	**2010**	**2007**	**2008**	**2009**	**2010**
Seed capital	0	0	0	1 742	0	0	0	0
Start-up capital	1 240	0	0	0	500	281	0	13 139
Development capital	0	0	1 739	330	3 692	12 717	29 987	9 910
Growth capital	0	8 416	0	9 346	116 238	250 660	192 027	145 017
Rescue capital	0	0	0	0	75	0	400	0
Replacement capital	0	0	0	0	2 250	0	139 965	0
Buyout	23 460	22 729	0	3 055	59 613	170 894	1 023 397	25 146
Total investment of Venture Capital	**24 700**	**31 145**	**1 739**	**14 473**	**182 368**	**434 553**	**1 385 776**	**193 211**

Source: (EVCA, 2007, 2008, 2009, 2010)

Significant increase in the use of this form of financing was observed in Czech Republic in 2009. Mentioned Venture Capital was used mainly to buyout phase of the company. As it is in Slovak Republic, Venture Capital in seed phase of the development of the company is used at least. However, due to the negative effects of the financial and economic crisis, the use of this type of capital in 2010 significantly reduced. Total Venture Capital Investments from year to year decline from 1 386 million € to 193 million €.

Table 4
The use of Venture Capital for financing different development phases of the companies in Poland and Hungary (in thousand €)

	Poland				Hungary			
	2007	**2008**	**2009**	**2010**	**2007**	**2008**	**2009**	**2010**
Seed capital	2 483	4 003	0	0	0	0	0	853
Start-up capital	3 321	10 660	0	1 293	2 083	2 017	1 255	5 761
Development capital	40 267	34 687	634	1 272	13 399	22 900	362	11 286
Growth capital	96 813	73 515	61 559	114 454	12 906	49 387	956	6 897
Rescue capital	1 256	68	6 100	3 073	0	0	0	0
Replacement capital	8 069	0	99	16 145	0	0	8 640	0
Buyout	288 507	509 277	198 602	520 517	186 295	401 800	202 424	40 249
Total investment of Venture Capital	**440 715**	**633 210**	**266 994**	**656 754**	**214 682**	**476 104**	**213 637**	**65 046**

Source: (EVCA, 2007, 2008, 2009, 2010)

Poland is the only one country from the group of V4 countries in which the companies use Venture Capital almost in every phase of their business (Table 4). Total amount of investment has been in this country in 2007, 2008

and also in 2010 higher than in other compared countries, but in 2009 the leader became our western neighbours, i.e. Czech Republic.

Venture Capital in Hungary is mainly used in buyout and growth phase. As in previous countries, this capital is the least frequently used to invest in initial phase of business.

The comparison of long-term use of Venture Capital in the various development phases of the company during the years 1999 - 2009 illustrate two graphs (Fig. 2 and Fig. 3), in which is captured the percentage of Venture Capital to GDP in four selected countries.

Development of the use of Venture Capital in seed and start-up phase of company's existence was during the whole period almost the same in all four countries. The highest percentage of GDP was observed in 2000 or 2001 and since that period the value of the indicator in all countries has dropped significantly.

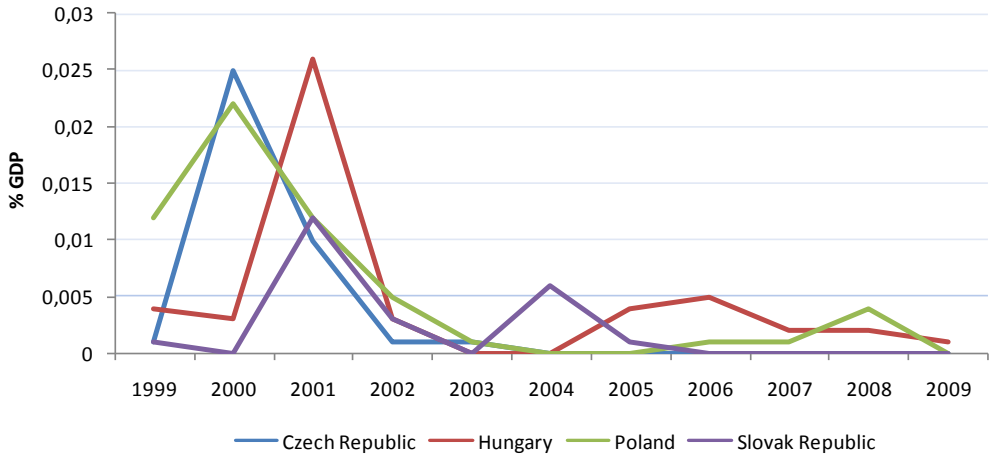

Figure 2
Percentage of Venture Capital used for financing seed and start-up phase of company's development to GDP (GDP in current prices)
Source: Eurostat

As stated in Table 4, in the current period the Hungarian and Polish companies use Venture Capital to start their entrepreneurship, although at a very low rate. In 2008 the value of the indicator in Poland was 0,005% of GDP and in 2009 it was even 0%. In Hungary it was only 0,001% of GDP (Fig. 2). In the remaining two V4 countries, i.e. in Slovak and Czech Republic, is the value of monitored indicator in long-term is zero.

Venture Capital is also used to support business activities in the later phases of its development, in development phase and to debt replacement. Globally, it can be stated that its use is in these phases higher than in the previous two phases of company's existence (Fig. 3). Figure monitors the

development of indicator expressing the proportion of Venture Capital used in these two later phases of company's development of GDP in current year. On that basis, it can be stated that the indicator during reporting period in all countries varied considerably.

The share of Venture Capital of GDP has developed various in other countries and there were observed few variations. For example, in 2000, the value of the indicator in Czech Republic has significantly increased to 0,172% of GDP and taken over lead. In 2004, Hungary overtook Poland. The last in the use of Venture Capital in the development phase and in the dept replacement phase was during the whole period Slovak Republic, in which the companies didn't use Venture Capital since 2006.

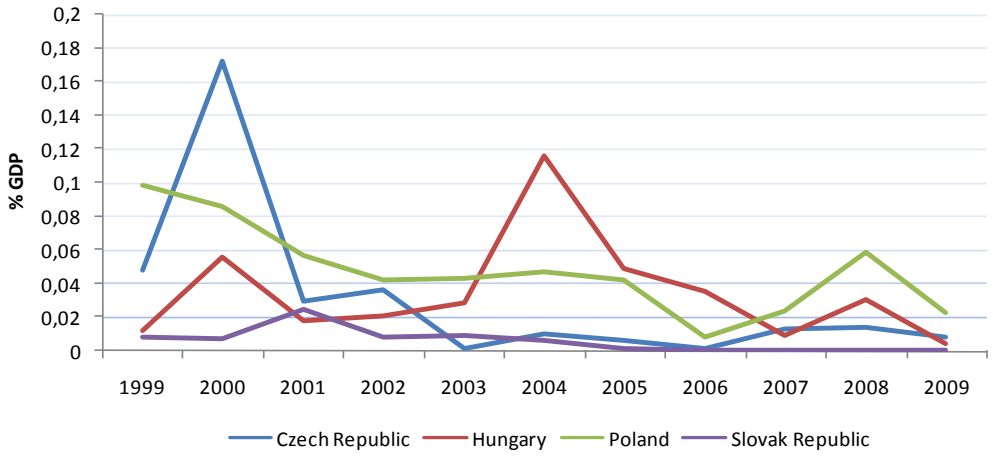

Figure 3
Percentage of Venture Capital used for financing development and dept replacement phase of company's development to GDP (GDP in current prices)
Source: Eurostat

2.1 Business Angels - one of the entities that provide Venture Capital

Several SMEs have a problem with the lack of financial resources already in the seed and start-up phase of their development. Forasmuch as this is a high risk group of clients, banks are not willing to provide loans to these companies which would contribute to their further development and will support their activities. Insufficient access of this group of companies to finance the initial phases led to the formation of Business Angels.

Business Angels are individuals with their own capital and experience, providing capital for start-ups. They are important source of capital for small enterprises with growth potential in the initial phases of development long before they become attractive to Venture Capital Funds. They are therefore considered to be key players in creating high growth companies essential to the economic development of the region. They purchase a minority shares in the

company with the expectation that after a certain time (after about 3 to 5 years) Business Angel will sell off its business share and the difference between the buying and selling prices will make profits for Business Angel (EBAN, 2008). Their added values as investors are managerial experience, know-how, their contacts and willingness to share them. In contrast to the Venture Capital, this capital input is made anonymously. Business Angels often invest into the areas that are close to them personally; however, preferred is particularly high-tech industry.

Business Angels have existed in Europe for a long time. A new element is the creation of a network of organizations promoting these investors, i.e. Business Angel Network (BAN), which are since 1998 associated into the European Business Angel Network (EBAN). Most Business Angels are in the United Kingdom (50 subjects), number two is Germany with 40 subjects and number three is France with 31 subjects. Around 125 000 Business Angels are active in Europe and even one million are potential investors (EBAN, 2008).

In 2008, EBAN consisted of direct and indirect members of 297 BANs in Europe. These networks brought together 75 000 Business Angels supporting the various business plans. While venture capitalists invested into the companies with a lack of the equity at least 2,5 million €, Business Angels invested in 2008 averaged 165 thousand € and the total annual invested amount was equal to 3 billion € (EBAN, 2008).

In European Union was the total number of Business Angels, the average invested amount and the total annual investment in 2008 lower than in the USA. During the year were in USA 270 BANs, which brought together 250 000 Business Angels. The total invested amount was significantly higher than in European Union (20 billion €) and the average invested amount was 210,5 thousand €.

Slovak Business Angels Network (SBAN) is the network for the support of SMEs through Business Angels investment in Slovak Republic. Its aim is to increase awareness about this form of investment and to mediate the initial contact between investors and applicants for funding. The system is built on the platform of database for the pairing of appropriate business demands on the one hand and the offers of investors on the other hand. In Slovak Republic the network of Business Angels does not use yet because there is the absence of potential investors (individuals) that are ready to invest their free financial resources in this way.

In 2008 were in Hungary three networks of Business Angels and in Czech Republic two networks (Table 5), in which investors invested only to start-ups in the field of information and communication technologies and telecommunications in regions where the networks are. Business Angels in Poland focused on investing not only in the initial phases, but 40% of the invested amount was used for the development, expansion phase. In Poland the investments were destined for the retail and services.

Table 5
Business Angels Networks

Czech Republic
RAAL
Angel Investor Association
Hungary
Hungary National Business & Innovation Centre INNOSTART
Hungarian Business Angel Network
ValDeal Innovations Zrt.
Poland
PolBAN - Polska Sieć Aniolow Biznesu
Lewiatan Business Angels
SilBAN
RESIK - The Małopolska Agency for Energy and Environmental Managament
LSAB - Lubelska Sieć Aniołów Biznesu (Lublin Business Angel Network)

Source: (EBAN, 2008)

Conclusion

At a present time, Venture Capital is considered as a very important resource for financing not only common activities but also innovation activities of companies especially in developed western European countries. Venture Capital as an innovative financial instrument is used mainly for financing initial phases of company's development. Therefore we monitored not only the absolute value of investment into all development phases of the companies, but also the share of Venture Capital on the financing of individual phases of company's development to country's GDP.

In previous years Slovak Republic had not used this capital. The reason is the lack of entities providing this capital, because it is high risky investment into the initial development phases of companies, when their future is uncertain. The use of this innovative financial instrument brings many advantages and disadvantages. For the main advantages of using Venture Capital as an alternative source of innovation financing is considered:

- fast realization and implementation of promising innovative projects for which the company has not enough own financial resources or can not obtain a loan,
- benefit not only from the necessary financial resources to implement investment into the innovation activities, but also benefit from experience, contacts and information of the venture capital investor.

The most common disadvantages are:

- increase in the number of owners who have an impact on decision making process,
- investors require a high rate of return to cover the assumption of risk.

In recent years the number of Business Angels in Europe has increased. It is the result of that the number of new angels is higher than the number of angels leaving the network of Business Angels. The average amount of investment is also slightly increasing. In all compared countries (except for Slovak Republic) Business Angels preferred investing into the seed and start-up phases of the company's development before the another phases and the interest in the investing into the activities of companies outside the region (outside the region where is a headquarter of network) was lower than the interest in the investing into the companies operating in the region, where is a headquarter of network. Business Angels invest the most of their financial resources into the information and communication technologies and software. Up to now, the Slovak Republic has not used financing of mentioned activities by Business Angels from the reason of absence of investors that want to invest their own capital in this way.

References

1. Baláž, V. (2000), "Trendy vo financovaní inovácií v Európskej únii", *Ekonomický časopis*, No. 5, pp. 559 – 582.
2. Dvořák, I., Procházka, P. (1998), *Rizikový a rozvojový kapitál*, Management Press, Praha.
3. European Business Angel Network (2008), *European directory of Business Angel networks in Europe*, Brussel, Available on: <http://www.fnaba.org/doc/EBAN_Directory_2008_Final.pdf>.
4. European Private Equity and Venture Capital Association (2009), *Central and Eastern Europe Statistics 2009*, Available on: <http://www.evca.eu/knowledgecenter/PublicationDetail.aspx?id=PBCEE09>
5. European Private Equity and Venture Capital Association (2010*), Central and Eastern Europe Statistics 2010,* Available on: <http://www.evca.eu/uploadedfiles/PBCEE10.pdf>.
6. Freňáková - Karchová, M. (2007), "Trh rizikového kapitálu a podpora rizikového kapitálu v Slovenskej republike", *Ekonomické rozhľady*, Vol. 36, No. 3, pp. 416-426
7. Národná agentúra pre rozvoj malého a stredného podnikania (2006): *Stav malého a stredného podnikania v Slovenskej republike*, Bratislava, Available on: <http://nadsme.sk/files/file/publikacie/Stav_MSP_06.pdf>.
8. Národná agentúra pre rozvoj malého a stredného podnikania (2007): *Správa o stave malého a stredného podnikania v Slovenskej republike v roku 2007*, Bratislava, Available on: <http://nadsme.sk/files/file/publikacie/Stav_MSP_2007.pdf>.
9. Národná agentúra pre rozvoj malého a stredného podnikania (2008): *Správa o stave malého a stredného podnikania v Slovenskej republike v roku 2008*, Bratislava, Available on: < http://nadsme.sk/files/Stav_MSP_2008.pdf>.

10. Národná agentúra pre rozvoj malého a stredného podnikania (2009): *Správa o stave malého a stredného podnikania v Slovenskej republike v roku 2009*, Bratislava, Available on: < http://nadsme.sk/files/Stav_MSP_2009_1.pdf >.
11. Národná agentúra pre rozvoj malého a stredného podnikania (2010): *Správa o stave malého a stredného podnikania v Slovenskej republike*, Bratislava, Available on: <http://www.nadsme.sk/files/Stav_MSP_2010-fin.pdf>.
12. http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/
13. http://www.evca.eu/
14. http://www.fondfondov.sk
15. http://www.sban.sk

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COMPANY´S PRICING POLICY

CENOVÁ POLITIKA V OBCHODNÝCH SPOLOČNOSTIACH

Erika LIPTÁKOVÁ – Zuzana HAJDUOVÁ – Marek ANDREJKOVIČ

Abstract
Proper pricing is important and complex variable of overall marketing strategy, because it affects the revenue and profitability of the business. To this purpose we have been contacted by a company whose business is mail order sales approximately 10,000 kinds of goods. The company operates in a highly competitive environment, so it needs a flexible pricing policy. At the same time it needs a tool that these prices determined without human intervention. Therefore we have undertaken to create a mathematical model to calculate the margin on the goods. In this paper we describe a way of creating of this model.

Keywords: pricing policy, business company, linear regression

Abstrakt
Správne stanovenie cien je dôležité pri celkovej marketingovej stratégii, pretože to má vplyv na príjmy a ziskovosť podniku. Predmetom tohto článku je popis marketingovej stratégie firmy, ktorá obchoduje na trhu s približne 10 000 druhov tovaru. Spoločnosť pôsobí vo vysoko konkurenčnom prostredí, a preto potrebuje flexibilnú cenovú politiku. Vytvorili sme matematický model na stanovenie marže predávaného tovaru.

Kľúčové slová: cenová politika, obchodná spoločnosť, lineárna regresia

Introduction

Pricing is the process of determining what a company will receive in exchange for its products. Pricing factors are manufacturing cost, market place, competition, market condition, and quality of product. Pricing is the manual or automatic process of applying prices to purchase and sales orders, based on factors such as: a fixed amount, quantity break, promotion or sales campaign, specific vendor quote, price prevailing on entry, shipment or invoice date, combination of multiple orders or lines, and many others. Automated systems require more setup and maintenance but may prevent pricing errors. The needs of the consumer can be converted into demand only if the consumer has the willingness and capacity to buy the product. Thus pricing is very important in marketing.

Accurate price assessment is important and complex variable of the whole marketing strategy whereas it has an impact on income and company´s profitability. Because of this fact, we have been addressed by one distribution company which does mail order business, approximately 10 000 kinds of goods. There exists a warehouse for these goods, which is filled up permanently.

Company operates in a high-competitive environment, so that it needs a flexible pricing policy. However, at the same time, it needs a tool that would establish these prices without a human intervention (considering huge amount of goods).

Company´s pricing policy

Critical factors in price decision-making are:

- objective expense information,
- customer´s value perception,
- target markets and customer segments,
- dynamics of competitors,
- price strategies, etc.

When defining pricing policy targets, companies have to regard marketing targets, which we can consider e.g. survival, profit maximization, market share maximization, gaining the leading position in quality, etc. Price level directly influences inquiry, it reflects in a product´s marketability and so it has an impact on the whole company´s activity.

When making a choice, which method of pricing to choose, companies take into account some specific aspects, which can be found in several particular pricing methods. For example:

- demand –*demand-based pricing* is any pricing method that uses consumer demand based on perceived value as the central element. Pricing factors are manufacturing cost, marketplace, competition, market condition, quality of product,
- expenses – *expense-based pricing*,
- competition – *competitive-based pricing*.

In practice, usually there is not only one price, but specific price differentiation, which can have *discriminating* or *promotional* character. Discriminating character of pricing consists of e.g. different prices for different markets and areas, various goods versions for various consumer´s segments, etc. Promotional pricing character is used to attract consumers, e.g. in case of seasonal sales decrease, that is about temporary depreciation below estimated level.

This business company set prices by a margin. It is a simple method that consists of adding a standard profitable margin to production unit cost. Margin level is various according to the type of good. Salesmen add their own margin to this calculated price and price of the product is increasing. This method is very often used because it is easier to establish costs than to establish demand.

Company has three types of customers:

- Industrial purchasers with regular and frequent withdrawal,
- Distributors and stores with regular withdrawal,

- Small companies and individuals with non – regular or small withdrawal.

On the ground of the past years experience, company has created six customer groups and has divided its customers among these groups (Table 1). Keystone of this dividing is that company offers the same goods to individual groups at different prices. Philosophy applied – the higher turnover a particular customer has got, the lower prices he is offered by company. So, we are talking about *discriminating pricing*.

Table 1
Conditions of dividing customers into the groups

Customer groups	*Annual average withdrawal (in **Skk***)*	*Annual average withdrawal (in **Euro**)*	*Customer´s characteristic*
A1	up to 30 000	up to 1 000 €	mail order
A2	30 000 – 150 000	1 000 – 5 000 €	industry
A3	150 000 – 600 000	5 000 – 20 000 €	industry, schools, developers
A4	more than 600 000	more than 20 000 €	industry
X1	up to300 000	up to 10 000 €	small stores
X2	more than 300 000	more than 10 000 €	large stores and warehouses

*The currency *Slovak koruna (Skk)* has been used in Slovak republic till 31st December 2008. The Euro monetary currency has been adopted in the Slovak republic on the 1st January 2009.

When defining sales prices, company took into account data in the following table (Table 2). Particular margin values are the result of past years practical experience. As we can see, there are big differences between margins in particular customer groups which depend on the purchasing price.

Table 2
Purchasing prices of goods and margins for each customer group (in %)

*Purchasing price (in **Skk**)*	*A1*	*A2*	*A3*	*A4*	*X1*	*X2*
0,01	400	250	130	75	130	75
0,16	220	120	70	52	70	52
0,61	140	85	59	43	59	43
3,10	110	70	50	37	50	37
15,1	85	58	43	32	43	32
51	60	45	37	28	37	28
201	50	38	30	25	30	25
1000 and more	40	35	27	22	27	22

The company has included these margins into its information system, in which stock holding and invoicing is involved. Pricing process with new goods was proceeding consequently:

1. Stock card establishment in the information system.
2. Entering current purchasing price of goods.
3. Calculation of selling prices for particular customer groups by margin´s selecting using interpolation method in Table 2.

Drawback of the actual system was the fact, that if the purchasing price was changed in a time, margin levels did not react on this change and stayed constant. At the same time purchasing price declined in 50 % or increased in 100 %. In that case, goods became too expensive or too cheap. Correction of this state demanded human intervention.

Goals and methodology

The aim of the company was to change pricing policy according to the following standards:

- Modification of the selling price according to the current purchasing price, respectively to the average warehouse price of goods.
- Continuous level of margin modification when modification of purchasing price, not a skipping one.
- Price calculation without a human intervention.
- Quick overview of the calculations when changing the pricing policy, which means depending on changing date in Table 2.

This distribution company has asked for an algebraic model, according to which margin calculation should be handled. At the same time, two conditions were defined:

- model should be as easy as possible,
- model mostly should represent dependence given in Table 2.

Methodology

First of all, margin and purchasing price dependence for the first customer group A1 has been graphically displayed. It shows dependence alike hyperbolic (Fig.1). After that, as to get the easiest model, a logarithmic calculation of purchasing prices which increase continuously has been made. Margin and logarithm of purchasing price dependence is different from the first dependence (Fig. 2). We can notice linear dependence in A-Z and Z-G section. Because of that, we decided to create margin and logarithm purchasing price dependence model.

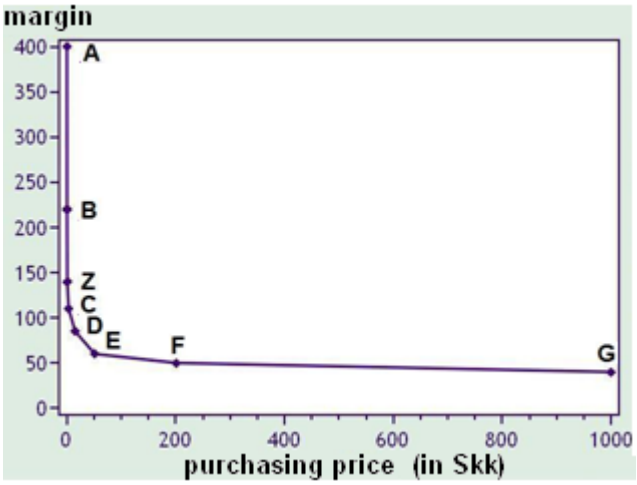

Figure 1
Margin and purchasing price dependence

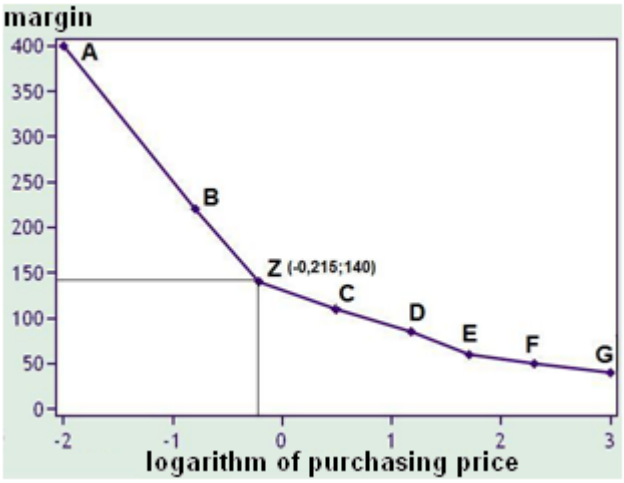

Figure 2
Margin and logarithm of purchasing price dependence

Straight line, that describes dependence of two variables the best, can be found by algorithmic ***least squares method*** and is called ***adjusting regression straight line***. Least squares method, unlike other estimating techniques, offers optimal value estimations also for small observational selections (our case) and algorithm of estimated values calculation is quite simple.

Adjusting regression line:

$$\hat{y}_i = b_0 + b_1 . x_i$$

$\hat{y}_i$ - predicted value of dependent variable Y for corresponding value x_i
x_i - arbitrary value of independent variable X
b_0– straight line intersection with y axis
b_1 – slope of straight line

Differences between actual measured data $y_i$of dependent variable Y and its adjusted value$\widehat{y_i}$, are called residual deviations. The aim is then logically select $b_0$and b_1 so that to get residuals as small as possible, what means minimize deviations$y_i - \widehat{y_i}$. We have to minimize the sum of these deviations. Because of the fact, that some deviations are positive and some negative, they negate each other and so the sum of deviations equals zero. As to remove this problem, least squares method is used. The philosophy of this method is to minimize square deviations but not deviations themselves:

$$\sum_{i=1}^{n}(y_i - \widehat{y_i})^2 = min.$$

Assuming that the calculation method of regression coefficients is well known, therefore is not presented here.[1]

In following, we will concentrate on a method of making of a model for customer group A1 (there are analogical steps for other groups). We have divided this model into two parts:

- Part 1: SCHEME_1
  By this scheme we can define margin calculation of purchasing price in range of 0,01 Skk – 1 Skk. We took it from A, B, Z points coordinate.

- Part 2: SCHEME_2
  By this scheme we can define margin calculation of purchasing price bigger than 1 Skk. We used Z, C, D, E, F, G points coordinates.

Margin of goods calculation model

SCHEME_1

Using the least square method, we got linear dependence expressed by straight line(Tab.3):

$$margin = 106{,}56 - 146{,}24 * logarithm\_price$$

[1]A readercanfindit in theliterature(e.g. Björck, A, 1996; Lawson, C.L. &Hanson, R. J.,1994)

Table 3
Calculation of the straight line parameters SCHEME_1

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	106.55920	3.59287	29.66	0.0215
logarithm_price	logarithm_price	1	-146.23793	2.87665	-50.84	0.0125

Source: author´s calculation (output in SAS EG program)

We can see a graph of regression straight line SCHEME_1 (Fig. 3):

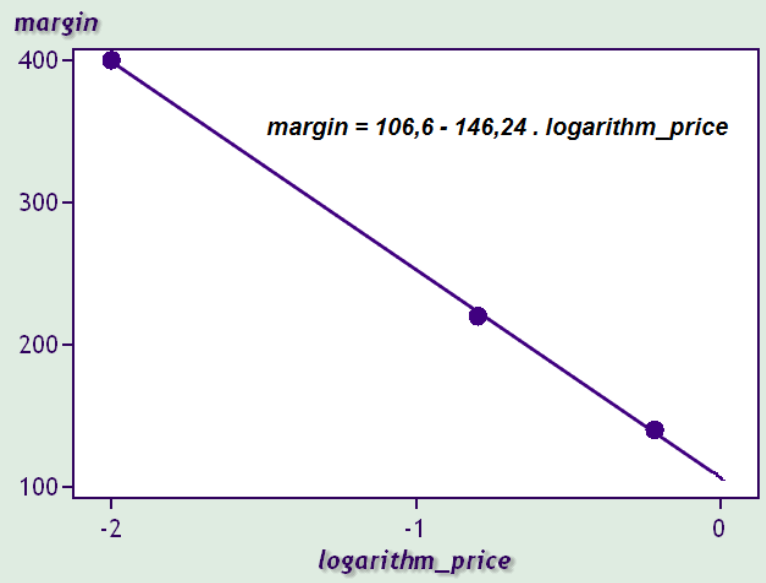

Figure 3
Regression straight line SCHEME_1

SCHEME_2

Using the least square method, we got linear dependence expressed by straight line (Tab.4):

$$margin = 118{,}20 - 28{,}34 * logarithm\_price$$

Table 4
Calculation of the straight line parameters SCHEME_2 (output in SAS EG program)

Parameter Estimates						
Variable	Label	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	Intercept	1	118.20479	7.81647	15.12	0.0006
logarithm_price	logarithm_price	1	-28.34051	4.02545	-7.04	0.0059

Source: author´s calculation (output in SAS EG program)

There is a graph of regression straight line SCHEME_2 (Fig. 5):

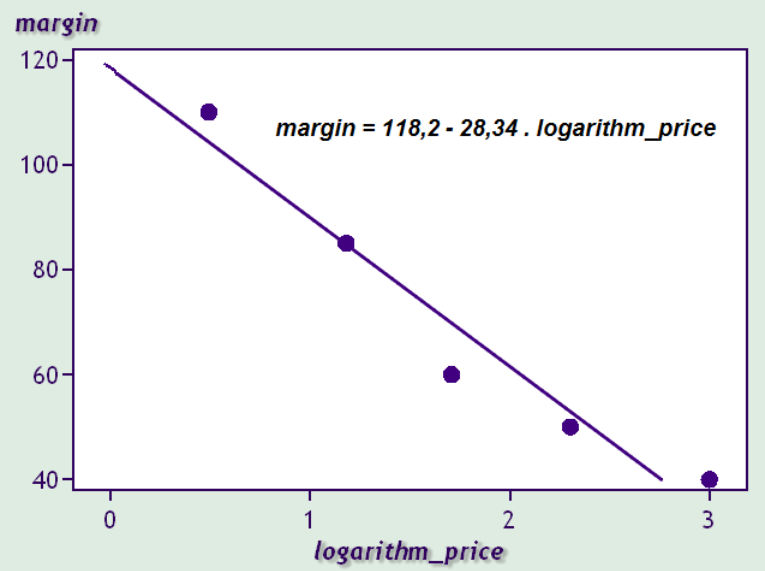

Figure 5
Regression straight line SCHEME_2

Searched model that should by used for margin calculations on goods for A1 customer´s group, is displayed in following table (Tab. 5).

Table 5
Margin calculation model

Purchasing price (in Skk)	*Margin calculation formula*
0,01 - 1,00	$margin = 106{,}56 - 146{,}24 * logarithm\_price$
more than 1,00	$margin = 118{,}20 - 28{,}34 * logarithm\_price$

We used the same method to create margin calculation models for other customer groups.

Conclusion

Distribution company has integrated these formulasinto its information system in 2008.This model of calculation sales prices company gradually applied to 70-80% of their stock items. The aim of the company, which was to decrease difficult margin calculations and to increase competitiveness, has been achieved. Human interventions into these calculations have been lessened.

After few months, company added slightly modified pricing policy. It was about items that had been purchased for lower price than usual. So it was possible to operate with higher margins than before. In other words, the company defined another "margin table" that used the same way of model calculation.

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References

1. BJÖRCK, A. *Numerical Methods for Least Squares Problems*. Philadelphia: SIAM. 1996. ISBN 0-89871-360-9.
2. ĎUĎÁK, J.*Cenystrojov a cenovápolitikaakonástrojmarketingovéhomixu*[online]. Nitra: Slovenskápoľnohospodárskauniverzita v Nitre. Available from:http://tf.uniag.sk/e_sources/katsvs/ost/7t_Cenova_politika.pdf
3. HINDLS, R., HRONOVÁ, S., SEGER, J., FISCHER, J. *Statistika pro ekonomy.*7th Edition. Professional Publishing, Praha 2006. ISBN 80-86946-16-9
4. LAWSON, C.L., HANSON, R. J. *Solving Least Squares Problems.* Englewood Cliffs, NJ: Prentice-Hall. 1974. ISBN 0138225850.
5. LIND, D.A., MARCHAL, W.G., WATHEN, S.A.*Basic statistics for business and economics*. McGraw-Hill, 2003. ISBN 0-07-247104-2.
6. WEISS, G. LABANT, S., WEISS, E., MIXTAJ, L., SCHWARCZOVÁ, H.*Establishmentoflocalgeodeticnets* . In: Acta MontanisticaSlovaca : internationalscientificjournal. Roč. 14, č. 4 (2009), s. 306-313. - ISSN 1335-1788.
7. MURA, L. – LÖSTER, T: Prejavy internacionalizácie podnikania vo vybranom odbore potravinárskeho priemyslu. In: Ekonomika a management. Vedecký časopis Vysokej školy ekonomickej v Prahe, č. 1/2011. ISSN 1802-8470.
8. MAREK, L. a kol.*Statistika pro ekonomy – aplikace*. 1st Edition. Professional Publishing, Praha 2003. ISBN 80-86419-68-1.

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DEVELOPMENT OF INSURANCE MARKET IN SLOVAK REPUBLIC IN THE PERIOD 2004 – 2010

VÝVOJ POISTNÉHO TRHU V SLOVENSKEJ REPUBLIKE V OBDOBÍ 2004 – 2010

Eva KAFKOVÁ

Abstract
Insurance industry belongs to the most important branches of each developed economy. It performs a couple of very important functions from the macroeconomic point of view: accumulation, redistribution, stimulation and control function. Insurance companies are big players on the financial market so insurance deserves adequate attention. This paper deals with the development of insurance market in Slovak Republic. We focused our attention on the selected indicators as follow: written premium, indemnity costs, technical reserves, investment activity, concentration of insurance market, Herfindahl-Hirschman index. Also we described of basic subjects of insurance market, which take a share in a correct development Slovak insurance market as the part of integrated European insurance market.

Keywords: insurance market, premium written, technical reserves, concentration of insurance market, Herfindahl-Hirschman index, investment activity, subjects of insurance market

Absrakt
Poisťovníctvo patrí k najdôležitejším odvetviam každej rozvinutej ekonomiky. Z pohľadu makroekonomiky realizuje viaceré dôležité funkcie: akumulačnú, redistribučnú, stimulačnú a kontrolnú funkciu. Poisťovne sú veľkými hráčmi na finančnom trhu, preto je potrebné im venovať adekvátnu pozornosť. V príspevku kladieme dôraz na vybrané ukazovatele, najmä na vývoj predpísaného poistného, nákladov na poistné plnenia, technických rezerv, investičnú aktivitu, koncentráciu poistného trhu. Taktiež popisujeme základné subjekty poistného trhu, ktoré sa podieľajú na korektnom rozvoji slovenského poistného trhu ako súčasti jednotného európskeho poistného trhu.

Kľúčové slová: poistný trh, predpísané poistné, technické rezervy, koncentrácia poistného trhu, Herfindahl-Hirshmanov index, investičná aktivita, subjekty poistného trhu

Introduction

Insurance industry belongs to the most important branches of economy. It performs a couple of very important functions from the macroeconomic point of view: accumulation, redistribution, stimulation and control function. Insurance companies are big players on the financial market so insurance system deserves adequate attention. This work deals with the development of insurance market in Slovak Republic between the years 2004 since have became member of European Union until 2008 when Slovak Republic implemented of Maastricht's

criteria for join to European Monetary Union. Insurance becomes more and more significant and its development correspondents tightly with the national economy. We have focused our attention on the selected most important indicators as follow: written premium, indemnity costs, technical reserves, investment activity and concentration in the insurance industry.

The insurance business covers a huge set of insurance companies and institutions that have state or private ownership. It is a specific branch of economy enabling safe performance of economic system. It minimizes respectively eliminates the risks of performing business by various business entities that result from contingent claims fulfilling primary role of insurance business. To secure surety of resources from revenues and value of property seems to be the most important factor of both personal needs and basic needs of business entities and that is why all the businesses should properly evaluate the recognition, identification, evaluation, and selection of accurate risk cover.

The importance of insurance also reflects its influence upon economy. Insurance activities help to maintain entrepreneurial entities and obtained standard of living stable. It also stimulates increasing awareness of businesses and individuals to protect themselves and to prevent consequential losses. Insurance contributes to raising economic growth by investing cumulated technical reserves on financial market.

1 The Position of the Insurance Market on the Financial Market

There can be found a lot of definitions of financial market in economic literature. Some authors deal with definition concentrating on supply and demand for such financial tools as cash, capital, securities, rights of priority, warrants, derivatives, foreign currency, rare metals, insurance cover, etc. that can be traded on financial market.

B. Chovancová (2005) says „financial market is a place on which supply of available financial resources such as an economic subjects savings meets demand of various economic subjects for available resources used as investments. In other words, resources are allocated by financial market from those, who have a surplus, to the ones whose consumption is higher than their earnings".

I. Beneš and J. Musílek (1992) say "supply and demand of money and assets are concentrated on the financial market, it's their prices are focused and the subjects of financial market are willing to perform financial transactions and operations. Financial market more precisely expresses short time and long-time transaction unity in reproduction process of modern economies.

S. P. Ross (1991) defines financial market as „the market, which allows to individuals and enterprises to lend and borrow themselves." We can observe by the chosen definitions of financial market, that all have common factor. Financial market has an important role, which contains financial resource flowing from subjects with surplus to subjects with deficit. Monetary operations in insurance, by which proceed to life-cycle realization of insurance agreements, are by V. Háčik (2005) "part of the monetary payment operations, which are:

1. Fiscal monetary operations,
2. Credit monetary operations,
3. Insurance monetary operations,
4. Retirement monetary operations,
5. Commodity-money operations."

The systemic ties of individual operations and their concrete forms in insurance are illustrated on figure 1. Insurance companies are prominent subjects in securities monetary operations. They realize these operations through integral insurance activities – the investment of provision monetary resources. This activity has unrepresented role in the process of additional profit acquisition, it realizes by various tools of financial market.

Retirement monetary operations have a holding mediate character. Mutual relationship between retirement and insurance operations is directly proportional; it means that with the growing of monetary incomes, the capacity of gross written premium will also increase.

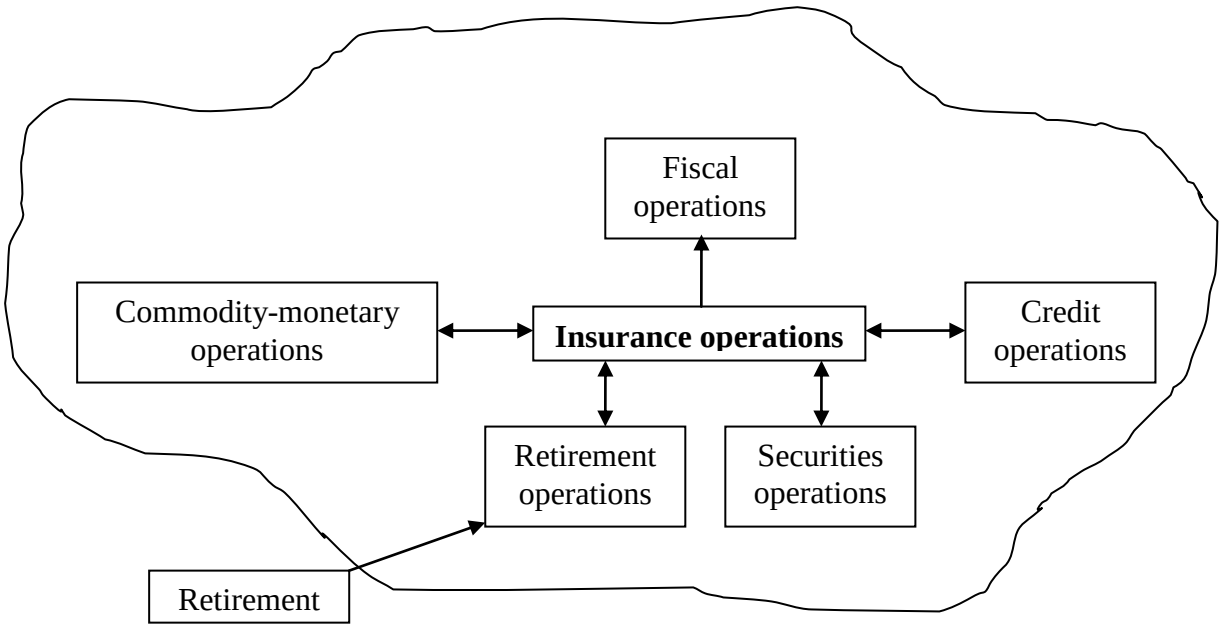

Figure 1
Systemic ties of monetary operations
Source: Own figure

Commodity monetary relations are realizing vicariously, that the means the client gets from the insurance company is a monetary equivalent for the damage done by insurance event. Acquired monetary resources are used for buying goods and services (damaged property, interest or bodily harm). By purchasing for goods and services, the insurant is given into the social-economic situation, in which he was before the insurance event.

Fiscal operations are obligatory operations for all business subjects, regardless of their line of business. Commercial insurance companies, like specific business subjects, are due to pay all of taxes – income tax, vehicle tax and pay insurance premium to Social and Health Insurance Company.

Characteristic feature of credit operations is by V. Háčik (2005) the temporary or return aspect of monetary supply changes of economic subject. Credit operations between insurance companies and banks are realized as mediatory, loan and investment operations, it means, that they refer to group of loan operations and they aren't part of credit operations with emission character.

The conception of insurance and its functions is presented by many scientists such as A. Majtánová (2009), J. Daňhel (2005), E. Ducháčková (2005), D. Bland (1993), J. Holyoake and C. Weipers (1999) and G. E. Rejda (200), J. V. Cummings and M. A. Weiss (1998) who have defined three principles of insurance:

(1) Risk pooling and risk bearing that offers to the customers who face risk security from risk via pool. The insurers collect premiums from the insured and then redistribute the money to those insured that sustained damage.

(2) "Real" financial services relating to insured losses. The insurers offer various real services to their insured. The most frequent services in life insurance are financial planning and consultancy. The most popular services in non-life insurance are the expert's reports aimed at identification of the risks that cause extraordinary losses, creation of programmes to cover such risks including recommendations on reductions and limits on insured sum. The insured have gained advantages from the wide experience and specialised expert reports of the insurer that reduced the costs connected with insurable risk by concluding the insurance policy.

(3) Intermediation. The insurers issue insurance policies and invest money resources if they do not need them to settle claim payments. The yields from the life insurance are added directly to the account of the insured. In non-life insurance the insured receive reduction on insurance policy as compensation of contingency costs from funds deposited by the insurers. The money resources from the insured are primarily invested into tradable and also to non-tradable securities.

2 Characteristics of the Slovak Insurance Market

Insurance market is a place for bringing together supply and demand for insurance protection. It is substantially different from other economic markets because players are not fully aware of the demand insurance protection (no clear idea of the existing risky situation). The main purpose of the business on the insurance market is insurance and reinsurance. Insurance includes insurance institutions, insurance and reinsurance, insurance brokers, insurance supervision, the association insurance, insurers, institutions dealing with insurance in addition to its core business (banks, leasing companies, etc.) and others.

On the Slovak insurance market as in other European Union countries and developed world in the highly competitive environment of their customers – insurance, commercial insurance and applying them intermediaries. Formation of high quality products and their price valuation (reasonable price for the optimal insurance protection) is the prerequisite of competition on the insurance market.

National Bank of Slovakia (NBS) has got a specific role to supervise of on the insurance market. NBS directs and supervises the activities of commercial insurance by controlling margin, the volume of technical reserves, but also respects all laws and regulations for governing the insurance sector, in order to create the conditions for fair competition in the era of globalization and deregulation of financial markets.

2.1 Slovak Association of Insurances

On the insurance market operates the Slovak Association of Insurance, which was the legal successor of Czechoslovak Insurance Association in 1993. Nine commercial insurance companies had operated in the Slovak Republic in the time it was founded. It is an association of commercial insurance companies and aims to represent protect and promote the common interests of its members in the relation to body government, other legal entities, and general public and foreign countries.

The activities of the association are primarily focused on the area of insurance economics, education and promotion of the insurance sector as a whole. Slovak Insurance Association is active through extensive coordination, educational, methodological, and presentation departments.

Currently, the Slovak Association of Insurance has the following sections:

- The legislative section, section for fighting insurance fraud,
- The economic section,
- The section for insurance and reinsurance of life insurance,
- The section for insurance and reinsurance of non-life insurance,

- The section for vehicle insurance and reinsurance and for human resources and publications,
- The section of public relations and editorial board of the magazine "Poistné rozhľady" (Insurance outlook)[1].

Slovak Insurance Association is currently registering 20 commercial insurance companies and the Slovak insurers on the Slovak insurance market. In its portfolio of products are offered life insurance and non-life insurance. From 1 October 2008 Generali Slovensko began to operate on the Slovak insurance market, which was established by joining the Česká poisťovňa – Slovensko, a. s. and Generali poisťovňa, a. s.

In Table 1 are given general information about insurance companies on the Slovak insurance market for the years 2004 – 2010. The number of commercial insurance companies for this period is also shown in the Table 1. In 2010, 20 insurance companies operated on the Slovak insurance market.

Table 1
Number of Slovak insurance companies

Number	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**
Total	20	26	25	24	22	20	20
Life	18	22	20	20	18	18	18
Non-Life	17	20	20	19	18	13	14

Source: Annual reports of Slovak Insurance Association 2004 – 2010.

In addition to the Slovak Insurance Association, the Slovak Association of Insurance Intermediaries and Slovak Bureau Insurers are active on the Slovak insurance market. They perform the tasks specified in the compulsory contractual liability insurance for the use of motor vehicle.

2.2 Slovak Association of Insurance Intermediaries

Another important subject of the insurance market is the Slovak Association of Insurance Intermediaries (Slovenská asociácia sprostredkovateľov v poisťovníctve, SAMP) that was created by the transformation of the Slovak Association of Insurance Brokers to SASP on the basis of extraordinary general meeting on 7 October 2005. The purpose of transformation was to create a professional organization in accordance with Act No. 340/2005 Coll. Insurance Mediation covers insurance and reinsurance intermediaries who operate in the Slovak insurance market. SAMP provides an expertise to its members and interacts to increase the position and recognition of broker's insurance market.

SAMP through its sub-activities acts on its intermediaries in order to enhance the protection of clients and also to provide quality and professional services to its clients. SAMP focuses primarily on the following activities:

[1] www.slaspo.sk <dost. 10. 11. 2011>

- To build and improve relationships with all the stakeholders of the insurance market,
- To modify and create relevant legislation,
- To improve relations with non-broker firms,
- To create long-term and mutually beneficial contacts with insurance agents and similar associations abroad,
- Publication activities and relationships with mass-communication means and training activities and information services,
- Entertainment insurance broker activities.

Nowadays, SAMP comprises 20 full members and 2 associates members. The most important of these full member insurance agents are MARSH, Ltd., Maxima Broker, a. p., MBI Marketing Consultancy International Ltd., OVB Allfinanz Slovakia, Ltd., RESPECT SLOVAKIA, Ltd. and further, whose their activities interact in a desirable and necessary development of the insurance market.

SAMP associates 4 ordinary members of insurance brokers: Aon Slovakia, Ltd., Basler, Ltd., MAI-Instar Insurance Brokers, Ltd. and the first municipal Financial, a. p. The insurance market operates not only hedging broker Benfield, which belongs to the leader of the world market premiums scope in the U.S., Asia, United Kingdom, continental Europe and Bermuda. An important subject of insurance market is Euler Hermes, which operates around the world and offers expertise in managing buyer risks to companies. This world-known intermediary works with a database, which contains information of more than 40 million companies.

2.3 Citizens and Entrepreneur Subjects

Extraordinary subjects of the insurance market are citizens and entrepreneur subjects' side and various entities interest associations, which stand on the side of demand for insurance products. Insurance market, as V. Čejková, (2001) says, "Differs significantly from other segments of financial markets in the fact that many operators are not aware of their demand for insurance protection. This is because they do not have a clear idea about the existence of risk situations. When for example, consulting the population as a subject of the market, we find out that his personal "power scale" insurance is often at the end, and despite the fact that ensuring security sources income and property values have the same degree, as the basic needs e.g. food, housing and clothing".

The increase of insurance awareness of citizens helps to introduce of the subject Insurance at colleges and universities as well as frequent promotion of insurance companies on selected segments of insurance market. Commission European Union states that the most of the citizens do not have sufficient information about the financial market and its products, offered to them. Commission of European Union therefore appeals all of competent subjects to

increase their activities, which lead to the elimination of these serious insufficiencies.

2.4 Slovak Insurers' Bureau

Slovak Insurers' Bureau was established by the Law of National Council of Slovak Republic no. 381/2001 Coll. z. the mandatory contract insurance against liability for damage caused by motor vehicle and amending certain laws. It fulfills its mission through the implementation of several important functions, which include in particular:

- The management of insurance guarantee fund,
- The keeping of a register of insurance liability,
- The implementation of border insurance,
- The representation of insurers in international institutions,
- Dealing with liability insurance,
- Concluding agreements with foreign insurers states,
- Cooperation with public authorities in matters relating to insurance responsibility,
- Sharing the prevention of damage to road transport,
- The implementation of information centre operations, including maintaining registry liability insurance.

Slovak insurers Bureau manages the Guarantee Fund and provides it claims for damage in well specified cases, by indicating in particular the damage to health and costs in case of death caused by an unidentified a motor vehicle operation, which corresponds to an unknown person, damage caused by a motor vehicle under the responsibility of a person without insurance liability damage caused by the use of motor vehicle under the responsibility of a person whose responsibility this damage is insured with an insurer who, because of their payment.

Limited insurance refers to those drivers who do not hold of Green card or come from a country that is not in the list of states Green card system and the Slovak Insurers' Bureau does not hold an agreement with them (the green card system was established in 1949, its aim is the mutual settlement of the damage caused by motor vehicle). Demonopolization of mandatory insurance was essential both in terms of the internal market, as in the process of the European Union accession. The distinctive attribute of compulsory contract of insurance claim experience is relatively high, causing inadequacy of the volume of premiums received.

Despite this fact, there is a considerable interest for this product from individual insurance companies in all developed economies, because marketing experts consider this product as "the gateway to obtain customer" and the possibility of providing additional products from which profits can be somewhat compensate for the loss rates for this product.

Ten insurance companies has the licence to provide insurance protection for motor liability insurance on the Slovak insurance market. The largest share had Allianz – Slovenská poisťovňa, a. s. with 32.17%, on second position was KOOPERATIVA, a. s. with 32.14% and the lowest share – 4.87% had Wüstenrot poisťovňa, a. s. in the year 2010.

Slovak Atomic Insurance Pool

Slovak atomic insurance pool (Slovenský jadrový poisťovací pool – SJPP) has operated on the Slovak insurance market since 1997. SJPP has nine members. The most important task of SJPP is insurance and reinsurance risks, which are related to the operations of atomic equipments[2]. They are namely atomic electric works, deposition of atomic waste, research reactors with small output, medicine and industry application radioisotopes and others machine.

EXIMBANKA SR, Export-import bank of Slovak Republic, (Exportno-importná banka Slovenskej republiky) has a special position on the financial market by supplying bank products and insurance products, which cover commercial risks. Insurance product portfolio of EXIMBANKA[3] is created of the following products:

- Insurance of short-term export credits against commercial risks,
- Insurance of short-term export supplier credits against commercial risks,
- Insurance of short-term and long-term export supplier credits against political and commercial risks,
- Insurance of export buyer's credits against political and commercial risks,
- Insurance of manufacturing risk,
- Insurance of investments of Slovak legal entities abroad, etc.

EXIMBANKA provides insurance of several kinds of credits, which appeal to increase the export-import efficiency of Slovak Republic and simultaneously to increase of the openness of the Slovak economy, which is needful because of our limited natural resources.

3. Slovak Insurance Market Concentration

3.1 Concentration Ratio

Experts calculate concentration in almost all of branches in order to identify the influence of supply and demand on the branch. Concentration Ratio as say L. Mihalčová and A. Hintošová (2004) belong to the oldest tools of the

[2] www.nuclearpool.sk/stranka/organizacn-struktura <dost. 6.10. 2011>
[3] www.eximbanka.sk/buxus/lib <dost. 10. 10. 2011>

determination of the concentration. This ratio is a measure of the development of the concentration in a branch and expresses the percentage share of the first "*n*" enterprises with mostly of the value production on production in total branch.

$$CR_m = \frac{100}{Q} \sum_{i=1}^{m} q_i$$

Where q_i is the value of production,

Q is the value of production of branch.

The interpretation of this formula realized in accordance of American and German schools is the following:

a) Concentration branch if the 4 biggest enterprises have more than 50% of production of branches,
b) Weak-Concentration branch if the 4 biggest enterprises have 25 – 49% of production of branches and
c) Non-Concentration branch if the 4 biggest enterprises have less 25% of production of branches.

Concentration ratio usually follows the share of the market of 4, 8 and 10 entrepreneurs. On the Slovak insurance market operates only 20 insurance companies, that is why we are choosing the quantification of 1, 3 and 5 insurance commercial companies. The values of Concentration Ratio of the total insurance market are presented by written premiums in Table 2.

Table 2

Concentration of insurance market on the Slovak republic

Indicator (in %)	2004	2005	2006	2007	2008	2009	2010
The most insurance	40.68	33.81	33.32	32.53	31.35	30.39	28.94
Three most insurance	67.05	61.56	60.97	61.02	63.42	63.50	66.40
Five most insurance	77.73	72.63	72.49	72.04	75.04	76.42	74.56

Source: Annual reports of SLASPO 2004 – 2010 and own calculations.

From the table above we see that Slovak insurance market is concentrated branch because of 3 insurance companies that have higher value than the recommended value that is 50%. In the first three years the value of

Concentration Ratio decreased (in the period 2004 – 2006), increase was noted in the period 2008 – 2010, namely in case three insurance companies.

The primarily deficiency of this index is that it doesn't tell about the structure of the market because this index eliminates the influence of the smaller enterprises and it values of the concentration only by way four of the biggest enterprises. In the year 1982 was started to use Herfidahl-Hirschman Index in order to eliminate some insufficiency of the index rate of concentration, I. Brezina (1994).

3.2 Herfindahl-Hirschman Index

The most frequent method for gauging industry concentration in practice is Herfindahl-Hirschman Index (*HHI*):

$$HHI = \sum_{i=1}^{n} x_i^2 ,$$

where n is the number of all firms in an industry and x_i is the share of *i-th* firm in total industry sales. The Herfindahl-Hirschman index is based on the assumption that competition grows at a rate equal to the square of market share. The maximum value of 10,000 occurs if the industry consists of a single firm. The resulting index is assigned to one of the three ranges.

1) High industry concentration if HHI is more than 1,800,
2) Medium industry concentration if HHI is between 1,000 and 1,800,
3) Low industry concentration if HHI is less than 1,000.

Table 3 shows that HHI went down in years 2004 – 2010 for the total insurance market. In years 2004 – 2005 insurance market concentration was in high the level and in years 2006 – 2008 was in middle level. In 2008 HHI reached level 1,706 proving assumption that there is not a strong leader in the industry with the share higher than 40%. The biggest market share 28.94% (measured by written premiums) has still the insurance company Allianz – Slovenská poisťovňa, a. s. in year 2010 (in comparison with year 2004 had Allianz – Slovenská poisťovňa, a. s. share on the insurance market 40.57%).
Life insurance market concentration was in a low level Only in years 2004 – 2008. This situation is possible because of life insurance products supply of the most insurance companies on the Slovak insurance market.

Table 3
Herfindahl-Hirschman Index of Insurance Market

Year	2004	2005	2006	2007	2008	2009	2010	$Index_{2010/04}$
Total	2,196	1,828	1,738	1,729	1,706	1,971	1,852	84.34
Life	1,471	1,377	1,397	1,420	1,394	1,639	1,600	108.41
Non-life	3,125	2,532	2,352	2,331	2,371	2,758	2,544	81.41

Source: Annual reports of SLASPO 2004 – 2010 and own calculations.

Table 3 shows that HHI went down during the period 2004 – 2008 in segment total premiums. In 2006 – 2010 insurance market concentration in total and life insurance was in middle level and HHI reached a lower level of lower than 1,800 proving assumption that there is not a strong leader in the industry with the share higher than 40%. The concentration of non-life insurance concentration was in high level.

4. Development of selected insurance indicators

The Slovak insurance market has overwhelmed a dynamic development and important reforms resulting in present modern and competitive system of commercial insurance companies since the establishment of the Slovak Republic in 1993. There operate twenty-two insurance companies with the head offices in Slovakia at present. The fact that 90% of capital comes from abroad proves that the Slovak insurance industry is attractive for foreign investors.

The Slovak association of insurance companies based in 1993 has been performing its activities in Slovakia. Its main task is to represent, protect and pursue common interests of insurance companies in relation to state administration and public. The members of Slovak association of insurance companies represent more than 99% of insurance market (one insurance company is not a member of Slovak association of insurance companies).

4.1 Written Premiums

As shown in Table 4 gross written premiums (in the following text written premiums are mentioned without inflation taking into account) had an upward trend in the period.

Table 4
Development of written premiums

Indicator (in € mil)	2004	2005	2006	2007	2008	2009	2010	$I_{2010/04}$
Total	1596,3	1719,2	1784,4	1915	2107,5	2027,2	2067,1	129,5
Life	641,1	731,3	846,6	956,1	1105,8	1062,1	1126,4	175,7
Non-life	955,2	987,9	937,8	958,9	1001,7	965,1	940,7	98,5
Life/Total (%)	40,16	42,54	47,44	49,93	52,47	52,37	54,49	135,7
Non-life/Total (%)	59,84	57,46	52,56	50,07	47,53	47,61	45,51	76,1

Source: Annual reports of SLASPO 2004 – 2010 and own calculations.

Total written premiums increased by 29.5 % in 2010 compared to 2004, in life insurance by 75.7 % and in non-life insurance decreased by 1.5 %. Year-to-year increase rate of premiums in all segments is shown in the Table 4.

Table 5 is presenting the development of the written premiums in percentage including of average year increase. The highest year-to-year increase rate was in life insurance in year 2006, which had value 115.77%; on the contrary year-to-year decrease rate was in 2006 in non-life insurance, which gained the highest only the value of 94.93% only.

Table 5
Rate increase premium written in period 2004 – 2010

Indicator (in %)	2005/04	2006/05	2007/06	2008/07	2009/08	2010/09	Average
Total	107,70	103,79	107,32	110,05	96,19	101,97	104,50
Life	114,07	115,77	112,93	115,66	96,05	106,05	110,09
Non-life	103,42	94,93	102,25	104,46	96,35	97,47	99,81

Source: Annual reports of SLASPO 2004 – 2008 and own calculations.

The highest average increase was 110,09% in life insurance in the following period, in non-life insurance average increase was 99,81% and average increase in total insurance was in the period 104,50%. Strong decrease in insurance written premium was in the year 2009 as the consequence of financial crisis.

4.2 Indemnity Costs

Indemnity is the compensation of losses to the insured in case of occurrence of insurance event. This recovery is in the form of money compensation but in some cases in the form of replace in kind by E. Kafková (2004). The development of indemnity costs is shown in Table 6.

Table 6
Development of Indemnity Costs (in € mil)

Indicator	2004	2005	2006	2007	2008	2009	2010	$Index_{2010/04}$
Total	573,19	578,18	708,68	790,99	975,2	1031,68	1132,94	197,66
Life insurance	218,18	241,31	312,72	352,84	444,53	548,48	609,07	279,16
Non-life insurance	355,01	336,87	395,96	438,15	500,67	483,20	523,87	147,56

Source: Annual reports of SLASPO 2004 – 2010 and own calculations.

The volume of indemnity costs of commercial insurance companies has grown in all indicators during this period. Total indemnity costs have grown about 97.66%, in life insurance about 179,16% and non-life indemnity costs about 47,56%.

4.3 The Creation and Placement of the Technical reserves

Since 1996 the Slovak Ministry of Finance Act No 136/1996 Coll. regulated the formation, allocation and use of technical reserves. As amended J. Daňhel (2005) understands technical reserves primarily as the reserve system laid down by a legislative and economical framework in order to eliminate the time mismatch between premium income and delayed payment of insurance claims and to cover contingent swings in the damage process (fluctuation of a random variable around an average), plus a so-called insurance reserve in respect of life and pension insurance policies designed to recover future liabilities of an insurance company when policies mature.

The Slovak Act on Insurance No. 24/1991 Coll. determined insurance activities for contracting insurance policies, administration of insurance policies, settlement of claims, and reporting of the insurance. Development of insurance practice including such activities as using and placement of technical reserves created conditions to alter the Slovak Government Act on Insurance No 186/2004 when the business activity of placing technical reserves became the part of determined business activities for the first time. All insurance companies, which operate on the Slovak insurance market, have to create all kind following of technical reserves:

- Provision for Unearned Premium is established for both life insurance and non-life insurance.
- Provision for Claims for both life insurance and non-life insurance,
- Provision for Bonuses and Rebates,
- Equalization Provision,
- Provision for Life Assurance Premium,
- Provision for Life Assurance,

- Provision for Non-Life Insurance Premium, which are detail described in Act NR SR No. 8/2008 about insurance.

Some insurance companies on the Slovak insurance market could create the others reserves only with the agreement of National Bank of Slovakia since 2006. There are particularly these technical reserves: reserves on the growing old, reserves on the cover of the deficit in life insurance, reserves on the contribution for Slovak Office Insurers, reserves on the business risks, reserves on the insufficient of the premium, etc.

Commercial insurance companies have to administer also of the argument for using these technical reserves National Bank of Slovakia determines structure of financial placement. The financial placement shall include 18 various kinds of the placements from which we have chosen following:

- Bonds issued by the Slovak Republic or by the National Bank of Slovakia and bonds for which the Slovak Republic has assumed a guarantee,
- Bonds issued by banks,
- Publicly tradable corporate bonds,
- Treasury bills,
- Publicly tradable municipal bonds,
- Loans, credits and other receivables secured by a bank guarantee,
- State bonds issued by Member States of the European Union or by the central banks of these states and bonds issued by the European Investment Bank, the European Bank for Reconstruction and Development, or the International Bank for Reconstruction and Development and others.

This number of kind's technical reserves influences of the optimal of the investments portfolio of each insurance commercial company. Investment managers are obliged to abidance of the limits for the financial placement financial means on the domestic and foreign financial market too. Beside of using of the basic principles for the financial placement of assets the source of which are technical reserves, insurance or reinsurance undertaking is obliged principle of safety, profitability, liquidity and diversification. All insurance companies create individual kinds of technical reserves include their placement on the domestic and foreign financial market in accordance with the directives European Union.

These basic kinds of technical reserves create all insurance companies, which have operated on Slovak insurance market since 1996 when was the negotiation of the Public Notion about the creation, settlement and using of means of the technical reserves. The use of technical reserves depends predominantly on loss ratio, distribution of life and non-life branches, and further on separate risk groups that are now compatible with EU Directive. The development of technical reserves volume as a whole and separately in both branches is demonstrated in Table 8.

Table 8
Volume of Technical Reserves (in € mil)

Indicator	2004	2005	2006	2007	2008	2009	2010	$Index_{2010/04}$
0Life Insurance	1,884.1	2,204.3	2,505.6	2,805.8	3,037.8	3,326.6	3,401.6	180.54
Non-life Insurance	697.6	783.0	941.0	956.2	893.1	932.3	1,012.5	145.14
Total	2,581.7	2,987.3	2,446.6	3,762.0	3,930.9	4,258.9	4,413.1	170.94

Source: Annual reports of SLASPO 2004 – 2010 and own calculations.

The volume of technical reserves of commercial insurance companies in all indicators has grown during this period. There were allocated € 3,401.6 mil in life insurance in 2010 and created 77.10% from total volume of technical reserves. The technical reserve in non-life insurance in 2010 created 32.90% from total technical reserves.

The volume of technical reserves in life and non-life insurance does not copy the volume written premiums. Line of life insurance belong technical reserves created of insurance product. The consequence of this fact is that the volume of technical reserves in life insurance is much higher than the technical reserves in non-life insurance (compare Table 4 and 8 where are presented written premiums and technical reserves).

4.4 Investment Activity

As an integral part of their activities insurance companies make financial investments. Spare technical reserve funds (resulting from the delay between premium collection and the occurrence of insurance claims and indemnification) are placed in the financial market in compliance with the applicable legislation.

Investment activity (IA) is an important indicator of the quality of commercial insurers' investments. It is defined as a ratio of investments to technical reserves in percentage terms. Standard & Poor's recommends a minimum value of 100%, claiming that investments should reach at least the level of technical reserves. The trend in investment activity is shown in Table 9.

Table 9
Volume of Insurance Technical reserves (in € mil)

Indicator	2004	2005	2006	2007	2008	2009	2010
1I/TR*100 (in %)	95.12	82.64	92.48	**107.49**	**113.20**	94.44	97.40
Investment	2,323.2	2,743,1	3,069.8	3,568,1	3,757.6	4,021.9	4,298.1
Total TR	2,581.7	2,987.3	2,446.6	3,762.0	3,930.9	4,258.9	4,413.1

Source: Annual reports of SLASPO 2004 – 2010 and own calculations.

In this period 2004 – 2010 investment activity did not lagged behind the recommended rate. This undesirable situation was partly the consequence of the failure by several insurance companies to comply with the new forms applied, limits and rules for investment of technical reserves in the financial market.

An overview of investment portfolio held by SLASPO member insurance companies displays some negative features mainly in debt securities/fixed income securities ratio which despite of ongoing growth falls short of the European average of 38 – 40%. The unsound investment portfolios held by Slovak association of insurance members in 2004 – 2006 can be explained by several factors as reported, in particular:

- Shortcomings in former legislation on allocation of technical reserve funds which restricted the number of different types of assets to 8 (at the present the number of different types of assets to 16);
- Calculation of premiums with higher technical interest rate that appeared in shortcoming of technical reserves (considering some dumping prices the supervisor NBS on insurance has restricted technical interest rate at today's 2.5%);
- Absence of complex management of assets and liabilities;
- Underdeveloped capital market in Slovakia;
- Short-term experience of investment managers in evaluation of technical reserves in the financial market;
- Inconsistent compliance with the principles of profitability, diversification, security and liquidity in placement of technical reserves in some investment operations etc.

Due to origin of their funds investment activities of insurers are regulated and scrutinised by the supervisor – National Bank of Slovakia that promotes integrated supervision according to the Slovak National Council Act No. 747/2004 Coll. on Supervision upon Financial Market. The primary objective of this regulation and supervision is to protect consumer against default on obligations arising from insurance policies. To that end it stipulates the types of technical reserves as well as the forms and limits of their market placement.

Conclusion

The global financial crisis has hit all sectors of national economy, including the previously dynamically developing insurance. The growth of this important sector is determined by internal and external factors, GDP, inflation, unemployment and people´s average income affect the fundamental characteristics of insurance – particularly written premiums, the cost of claims, technical reserves, investment activity, freezing, and more.

Decrease values of macroeconomic indicators is inevitably reflected in the slowing growth rate premiums written as a basic indicator of power, the change is inevitably reflected in the change of other variables. Assuming that the impact of financial crisis will peak in 2010, we can expect a significant reduction in the rate of growth in premiums written in life insurance. The main reasons are:

1. Continued growth in purchase of insurance contracts, induced typical behaviour of the insured at the time of financial crisis,
2. Reduced of demand for new insurance products.

In non-life insurance written premiums volume will affect particular segment of the engine line due to high concentration of this segment (the number of insurance products offered by insurance companies. only 8, but is not expected in the near future to increase their number). The share of the first three largest insurance companies was 79.96% in 2008 and is a prerequisite for the substantial increase. Increasing premiums will be slowed down by the strong concentration, which were 2,544 measured by Herfindahl-Hirshman index in non-life insurance in 2010. Middle concentration was in life insurance by HHI with a reached value only 1,660.

A positive trend can be expected in the credit insurance business and citizens as individual entities in times of crisis, when want to insure against defaults on loans to various reasons (in particular the loss of employment, disability, temporary incapacity and business entities as insolvency).

A prerequisite for growth in the volume of technical reserves is written premium growth, which in accordance with Act No. 8/2008 about insurance are different types of reserve in life insurance and non-life insurance. In 2010, the total amount of technical reserves was 4,413-mil euro. Technical reserves grew faster in life insurance, which corresponded to the nature of the provisioning in the industry (long-term nature and the different calculation of premiums). The life insurance has the largest share of the technical reserves for Life Assurance Premium with a share of 77.10%, with an annual increase of 3.59%. The volume of technical reserves in non-life insurance was 1,012.5 million €, with the biggest increase of 9.66%.

Significant changes are expected in the investment business of insurance and in particular reducing the yield of TR location for domestic and foreign financial markets. In 2010 the gross volume of TR was 4,413.1mil € (less technical reserves for the coverage of liabilities from an investment made of behalf of the insured) and cover the assets was 94.44% (in 2007 it was 107.8%). We can predict that from 2011 to 2012 no increase will be reached, the turn may be due to the impact of financial crisis and debt crisis, culminating with the recorded decline in income from investment activities.

Reinsurance as an important activity in achieving stability of insurance companies will continue to show a downward trend. This trend is affected mainly due to catastrophic events that caused the change in the soft market, premiums for reinsurance market hard. In addition, some risks are very difficult

to be hedged for most reinsures in the world market premiums (in particular natural and environmental hazards, but also Third Party Liability Insurance, Motor Vehicle damage or loss insurance).

References

[1] BLACK. J.: *A dictionary of Economics*. Oxford: Oxford University Press. 2. vyd.. 2002. 507 s. ISBN 0-19-860767-9.

[2] BLAND. D.: *Insurance Principles and Practice*. London: Chartered Insurance Institute. s. 2-10. 1993.

[3] BREZINA. I.: Hodnotenie vývoja koncentrácie v odvetví. In *Ekonomický časopis*. Bratislava: SAV. 1994/3. ISSN 0013-3035.

[4] CUMMINS. J. V.. WEISS. M. A.: Analyzing Firm Perfomance in the Insurance Industry Using frontier Efficiency Methods. 1998. Philadelphia. PA 19104-64-218.

[5] ČEJKOVÁ.V. – NEČAS. S.: *Pojistný trh*. Brno: MU ESF. 2005. 105 s. ISBN 80-210-3661-3

[6] DUCHÁČKOVÁ. E.: *Principy pojištění a pojišťovnictví*. Praha: Ekopress. 2003. ISBN 80-86-119-67-X

[7] DAŇHEL. J. a kol.: *Pojistná teorie*. Professional Publishing. Praha 2005. ISBN 80-86419-84-3.

[8] HÁČIK. V.: Platobné peňažné operácie. In *Financie a mena*. Bratislava: Ekonómia. 373 s. ISBN 80-8078-031-5.

[9] HOLYOAKE. J., WEIPERS. C.: Insurance 4th edition Canterbury. Kent: Chartered institute of Bankers. 1999. 344 s. ISBN 80-225-1362-8.

[10] CHOVANCOVÁ. B. a kol.: *Finančný trh*. II. prepracované vydanie. Bratislava: Eurounion. 2002. 584 s. ISBN 80-88984-31-9.

[11] KAFKOVÁ, E.: Technické rezervy a investičná činnosť komerčných poisťovní na Slovensku. *In* Ekonomický časopis/Journal of Economics, *52*, No. 2, pp. 166 – 180.

[12] MAJTÁNOVÁ, A. a kol.: *Poisťovníctvo*. Bratislava: Iura Edition. 2009. 327 s. ISBN 978-80-8078-260-3.

[13] PASTORÁKOVÁ. E.: *Javové podoby globalizácie na poistnom trhu v Slovenskej republike*. *In* Ekonomický časopis č. 8/54/2006, s. 785-802. ISSN 0013-3035.

[14] REJDA. G. E.: *Principles of Risk Management and Insurance*. Addison Wesley. International Edition. Ninth Edition. 2005. 345678910-CRW-08070605.

[15] ROSE, S. P. *Commercial Bank Management: producing and selling financial*. 1. vyd., Boston: Irwin, 1991. str. 325. ISBN 0-256-03451-6.

[16] SULKOWSKA, W. a kol.: *Ubezpieczenia*. Krakov : Akademia Ekonomiczna. 2007. 211 s. ISBN 978-83-7252-334-1.

[17] ŠLECHTOVÁ, J.: SOLVENCY II – Očekávané nové přístupy v pojišťovnách. In Proccedings of the International Conference, 26. – 27. Máj 2007, Univerzita Tomáše Bati ve Zlíně, Zlín, ISBN 978-80-7318-536-7.

[18] Zákon NR SR č. 381/2001 Z. z. o povinnom zmluvnom poistení zodpovednosti za škodu spôsobenú prevádzkou motorového vozidla a o zmene a doplnení niektorých zákonov.

[19] Zákon NR SR č. 95 z 1. februára 2002 o poisťovníctve a o zmene a doplnení niektorých zákonov.

[20] Zákon NR SR č. 747/2004 Z. z. 2. decembra 2004 o dohľade nad finančným trhom a o zmene a doplnení niektorých zákonov.

[21] Zákon NR SR č. 8/2008 Z. z. o poisťovníctve.
[22] www.slaspo.sk [ročné správy 2004 – 2010]. www.swissre.com/resources/d901cb004a24e38e9426d71e1eec54e8sigma3_2008_e_rev.pdf [19. 11. 2009].
[23] www.eximbanka.sk/buxus/generate_page.phf?page_id=198 [dost. 27. 11. 2011].
[24] www.nbs.sk [dost. 22. 12. 2011].
[25] www.allianzsp.sk/index.phf?s-cv-contentID=82167&t=print [dost. 27. 11. 2011].

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BOOK REVIEW

ČARNICKÝ, Š., KRUPA, K. W., SKOTNYY, P. et al.: *Business Intelligence: Theory and Practice.* Rzeszow: Publishing House of Rzeszow University, 2011. ISBN 978-83-7338-692-1

As the consequence of acceleration of various changes in the business environment can be deemed the need to change managerial work especially at the strategic level of management in terms of increased complexity of problems solved, their dynamic growth and impact on the rate and time horizon of decisions taken. Nowadays managers are overwhelmed by large volume of information, however their relevancy and suitability for strategic decision making process is often dubious. On the other hand, enterprises increasingly need to recognize the strategic value of information stored in their information systems. As important issues seem to be prediction, analysis and handling with relevant information that is enabled by Business Intelligence.

Tools of Business Intelligence are designed especially for monitoring of business environment conditions as well as key internal processes and subsequent processing of data to the position suitable for the decision-making on the strategic level. The reviewed book deals with wide range of issues connected with concept of Business Intelligence not only from technical point of view but especially from wider business aspects. It contents analysis of such topics as innovation process, intellectual capital and knowledge economy, clusters, strategic management and scanning, quality management, etc.

As the most significant contribution of the presented book can be considered its complexity and presentation of various theoretical approaches and viewpoints certainly also due to international composition of authors. Because of connection of theoretical background with practical examples and cases the book can be used not only in the learning process but it can be very useful also for business managers.

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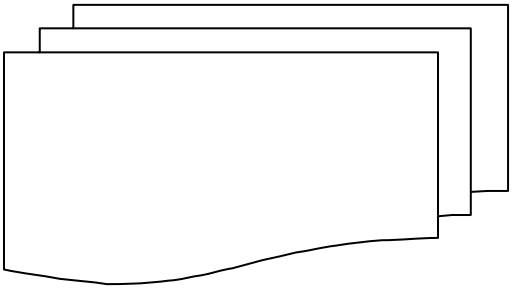

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