

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

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The aim of the journal is to publish the papers concerned with developing of new knowledge in the field of economic theories and its application in business practice. The scope of the journal covers the wide range of research problems of business economics, management, marketing and finance, knowledge economy, innovation policy, etc. The journal contains empirically (experimentally) founded studies, survey studies, contributions to "Discussion" (personal views and attitudes on controversial issues in economics as science, as a professional practice, etc.) and reviews. Integrative studies documented by relevant data from central and east European regions and member countries of European Union are specially welcomed. All papers are peer reviewed. The journal is published twice a year.

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## CONTENTS

### *EMPIRICAL STUDIES*

<b>MEASURING REGIONAL COMPETITIVENESS</b>	4
MERANIE REGIONÁLNEJ KONKURENCIESCHOPNOSTI	
<i>Silvia RUČINSKÁ – Pavol PAŠKA</i>	

<b>WAVES OF MERGERS AND ACQUISITIONS</b>	13
VLNY FÚZIÍ A AKVIZÍCIÍ	
<i>Aneta BOBENIČ HINTOŠOVÁ</i>	

<b>INFLUENCE OF QUALITY COSTS ON THE STRUCTURE OF TOTAL COSTS IN MEDIUM-SIZED COMPANIES</b>	23
VPLYV NÁKLADOV NA KVALITU NA ŠTRUKTÚRU CELKOVÝCH NÁKLADOV V STREDNÝCH PODNIKOV	
<i>Patrycja PUDŁO – Peter MESÁROŠ – František MESÁROŠ</i>	

<b>INTERPERSONAL NEGOTIATION</b>	35
INTERPERSONÁLNE VYJEDNÁVANIE	
<i>Cecília OLEXOVÁ – Alena BAŠISTOVÁ</i>	

<b>OPEN INNOVATION</b>	46
OTVORENÉ INOVÁCIE	
<i>Lenka PELEGRINOVÁ – Mária FARKAŠOVSKÁ</i>	

<b>DIVERSITY AS A BUSINESS CASE OF CORPORATE SOCIAL RESPONSIBILITY</b>	61
RÔZNORODOSŤ AKO ČASŤ SOCIÁLNEJ ZODPOVEDNOSTI FIRMY	
<i>Ana SPERANCIN</i>	

### *SURVEY STUDIES*

<b>PREREQUISITES FOR THE BALANCED ECONOMIC DEVELOPMENT OF COMMUNES PODKARPACKI PROVINCE</b>	74
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PREDPOKLADY PRE VYVÁŽENÝ EKONOMICKÝ ROZVOJ  
OBCÍ PODKARPATSKÉHO KRAJA

*Marek SMOLEŇ – Lidia KALISZCZAK*

**THE ROLE OF THE HUMAN RESOURCES MANAGEMENT** 81  
**(ON THE EXAMPLE OF COMMUNE OFFICE IN**  
**KŁOBUCK)**

ÚLOHA RIADENIA ĽUDSKÝCH ZDROJOV (PRÍKLAD  
OBECNÉHO ÚRADU V KŁOBUCK)

*Jolanta URBAŇSKA*

**TOWARDS FINANCIAL STRENGTH OF TOP THREE** 90  
**BANKS IN SLOVAKIA**

ANALÝZA FINANČNEJ SILY TOP TROCH BÁNK NA  
SLOVENSKU

*Martin KRAČINOVSKÝ – Eva KAFKOVÁ*

**EFFECT OF USEFULNESS OF MACHINES AND** 104  
**EQUIPMENTS ON USABILITY OF COST FUNCTION ON**  
**TPM**

VPLYV UŽITOČNOSTI STROJOV A ZARIADENÍ NA  
VYUŽITIE NÁKLADOVEJ FUNKCIE V KONCEPCII TPM

*Renáta TURISOVÁ – Miriam PEKARČÍKOVÁ*

# MEASURING REGIONAL COMPETITIVENESS

## MERANIE REGIONÁLNEJ KONKURENCIESCHOPNOSTI

*Silvia RUČINSKÁ – Pavol PAŠKA*

### **Abstract**

Nowadays competition takes place not only between companies but also between nations and regions. A principle of a development of national economy is in development of particular regions and their competitiveness. The EU is characterized by substantial regional diversity, in which competitiveness conditions differ substantially across regions. In our paper we want to show what competition of regions is and also we want to determine what presents the competitiveness of a region, specify its factors and possibilities of measuring. The text is part of research project VEGA 1/4639/07 “Role and status of universities in creation of regional networks as an assumption for regional development”.

**Keywords:** region; regional competition, regional competitiveness

### **Abstrakt**

V súčasnosti zastáva súťaž miesto nie len medzi podnikmi, ale tiež medzi krajinami a regiónmi. Princíp rozvoja národnej ekonómie je v rozvoji čiastkových regiónov a ich konkurencieschopnosti. EÚ je charakterizovaná podstatnou regionálnou diverzitou, v ktorej sa podmienky konkurencieschopnosti medzi regiónmi podstatne líšia. V našom článku chceme ukázať, čo súťaž regiónov je a taktiež chceme determinovať čo obnáša konkurencieschopnosť regiónu, špecifikovať jej faktory a možnosti merania. Tento text je súčasťou výskumného projektu VEGA 1/4639/07 “Úloha a postavenie univerzít pri budovaní regionálnych sietí ako predpokladu regionálneho rozvoja”.

**Kľúčové slová:** región, regionálna súťaž, regionálna konkurencieschopnosť

## **Introduction**

Globalization, rising of competition and internationalization helped the expansion of the idea not only firms, but also areas, regions and countries can compete to each other. The competition fight, no matter on subjects, results in the need to determine their ability to compete. In the economic theory we can follow at least 2 basic approaches to express the ability to compete (Ručinská, 2007).

The first approach is speaking about the microeconomic view like about the ability of firms to compete on the market for the best position, for the maximalization of their income and for customers. The second approach define the ability to compete from the macroeconomic view like a competition of regions, nations, countries and especially this approach is becoming more actual only necessary concerning the mission of the EU like a system of regions.

## 1. Competition of regions

If we want to define the region regional competitiveness, it is necessary to deal with the question if regions could be competitors to each other. According to Krugman the competition could relate only to firms and individuals, but not to nations and regions (Krugman, 1994): „Trying to define the competitiveness of a nation is much more problematic than defining that of a corporation“. If there is the argument that the competition between areas, regions and nations doesn't exist, it doesn't mean, there are no relations between countries or regions. Krugman describes the concept of national competitiveness as a dangerous obsession if he argues, the regions don't have same facilities and opportunities like firms, so this is the reason, why there could not exist the competition. Competition between regions is not a game, where only one can win. Firms can entry and leave the market according if they succeed, but regions cannot leave the market and go out of business. Kern (2005) similarly said, in the conditions of free trade and globalization is a strong competition, but it is concerning only to firms, not to nations and regions. Camagni (2002) disagrees with Krugman, he states that economic globalization affects not only companies, but also territories, which increasingly compete with each other. So, countries, nations and regions compete in an international market for products and production factors.

The European Commission offers own view on competition and competitiveness in the European Competitiveness Report. This report (COM, 2009, p.11) defines, that „the competitiveness of a country is essential for the welfare of its citizens. It means output growth and high rates of employment in a sustainable environment. In a fast-moving world economy, one of the keys to competitiveness is adaptability. An economy is adaptable if it can accumulate and redeploy resources rapidly in pursuit of new opportunities, while, at the same time, fully exploiting existing competitive strengths. “

Majority of economists tend to the idea of existence of competition between regions, but it is not as sensible as between firms. On this basis it is possible to define the regional competitiveness.

## 2. The regional competitiveness

The first modern definition of the regional competitiveness appeared in the work of Porter, he defined it like a ability of the nation to innovate and to gain the competitive advantage against other nations. To understand competitiveness according to Porter and Ketels (2003, p.11), it is necessary to define sources of a nation's prosperity. „A nation's standard of living is determined by the productivity of its economy, which is measured by the value of goods and services produced per unit of the nation's human, capital and natural resources.“ Competitiveness then is measured by productivity. Porter

also said the macroeconomic context and also microeconomic factors have the influence to the development and increase of the productivity. The microeconomic context is significant for the productivity of the country, because firms are generators of the value with their production of goods and services. Also the microeconomic dimension of the productivity of the nation depends on the quality of the business environment and on the sophistication of the production.

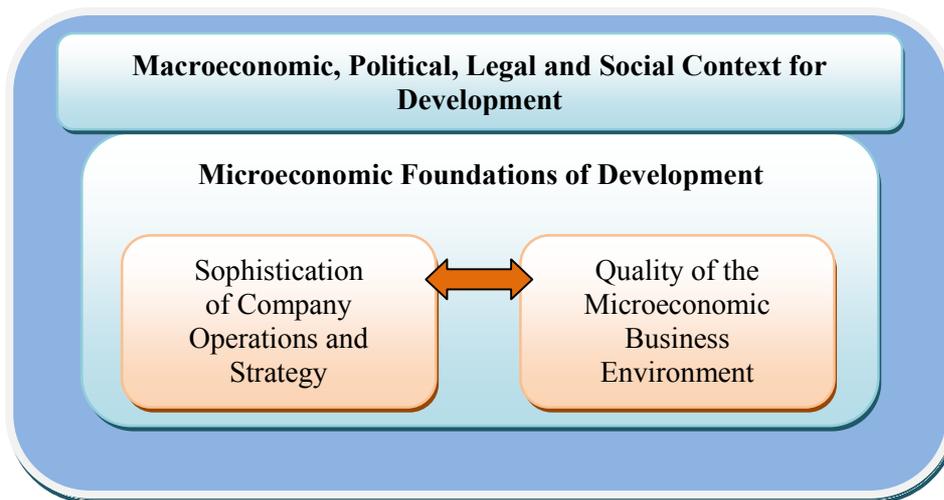


Figure 1  
**Determinants of Productivity and Productivity Growth**  
 Source: (Porter, 2003, p.18)

Porter selected in his diamond four comprehensive variables –factor conditions, demand conditions, related and supporting industries and business context as the forces for national competitiveness. After Porter there are many other authors, who tried to define the competitiveness from other point of view. Porter’s variables in the model are limited, they have no international context and the influence of the politics. To solve this problem, there has been proposed Double Diamond model from Rugman (Cho, 2005). Also Rowthorn (1995) considered trading with international firms like a base for the expansion of the region. He said, the regional competitiveness is determined with the intensity of their export base. Cho made a model of nine factors of competitiveness, in which he worked with Porter’s approach. Cho’s model is more dynamic than Porter’s original diamond model (2005). However in the many studies which have examined, measured and debated competitiveness, there are some areas of consistency. That competitiveness relates to productivity and how successful the economy is, is widely agreed. It is also widely agreed that the goal of competitiveness is to create rising living standards for all who live within the city, region or nation (2007).

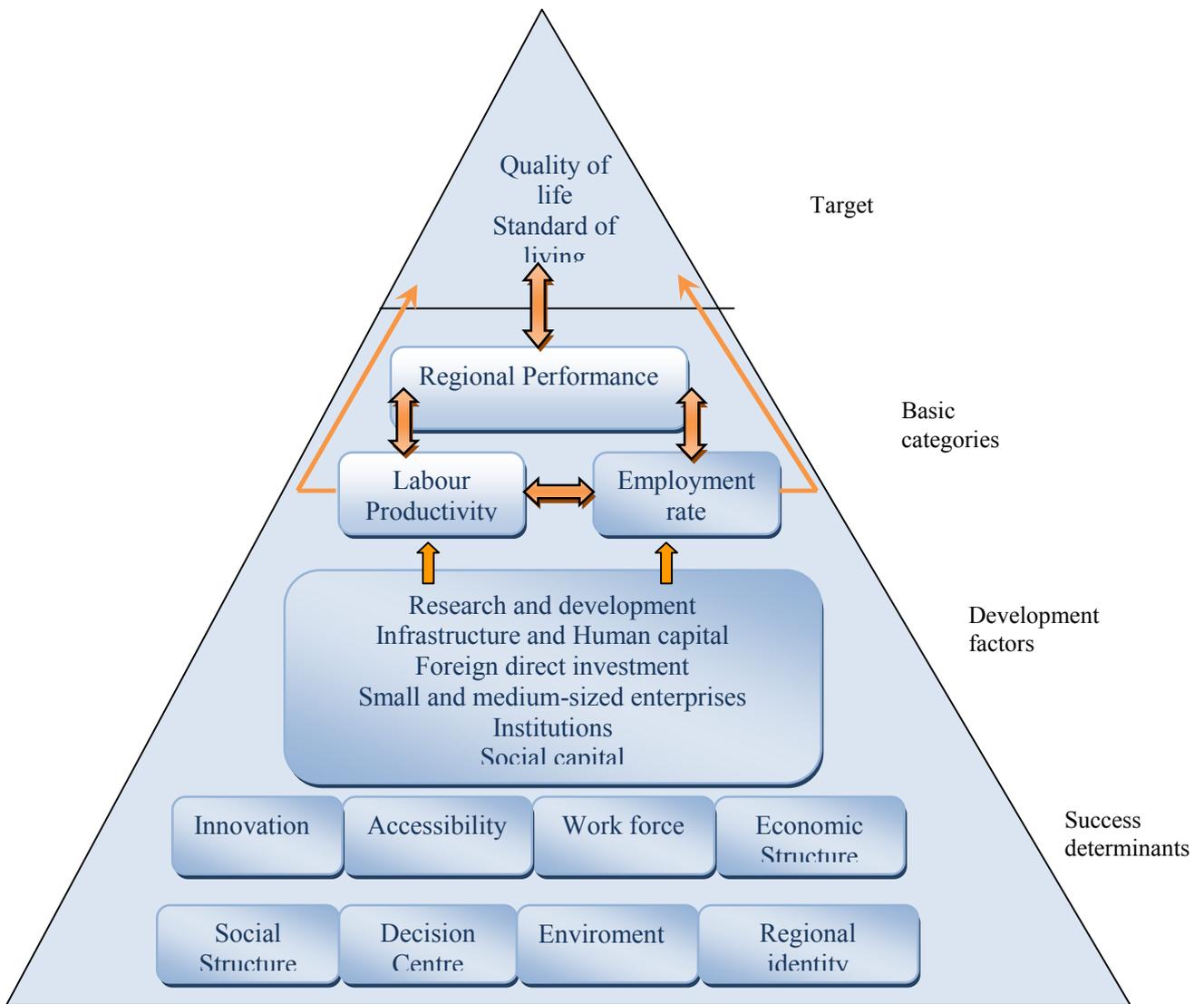


Figure 2  
**Pyramidal model of regional competitiveness**  
 Source: own, according to (Lukovics, 2007 and Trebuña, 2008)

Considerable asset in way how to explain the regional competitiveness is pyramidal model by Lengyel (Lukovics, 2007 and Trebuña, 2008), he defined the regional competitiveness with the goals of region and assets, which are the steps to achieve this goals. The pyramid model is built upon the standard definition of competitiveness selected as the basis of the analysis; it follows the structure of input-output-outcome corresponding to the international recommendations. The elements of the model can be transformed into indicators of competitiveness.

#### 4. Measuring regional competitiveness

The competitiveness can be measured from two perspectives. First takes into account the potential level of competitiveness of nations or regions and this

is so-called ex-ant approach. And there is also second method which is relying on the effect of competitiveness (Bronisz, 2008).

The competitiveness is then defined by indicators, which determine their competitiveness to other regions and by the results of region. For consideration we can differentiate works, which define the regional competitiveness by the outputs, and those which define it by the inputs.

To define the indicators of regional competitiveness is necessary to determine concrete ways how we can measure it. Some approaches measure the regional development with indicators like GNP/head, unemployment, investments and so on. There are also other ways how to measure the regional competitiveness. It is possible to define it like the factors, which influence the regional results. So we focus on the influence to inputs of the region. For the needs of a determination of regional competitiveness we consider to be suitable to execute a combination of both of measurements, outcomes as well as inputs.

Research enterprise ECORYS-Nei (Skokan, 2007) defined the regional competitiveness by the measuring the regional business and investments climate. On their research basis we can mention about seven factors, which determine the ability to compete: clusters, demography, migration and place, enterprise milieu and networks, governance and institutional capacity, industrial structure, innovation – regional innovation systems, ownership.

Interesting approach is creating of annual index of regional competitiveness produced by Centre for International Competitiveness and Cardiff School of Management (Huggins, 2008) which means, the competitiveness of a region depends on its ability to anticipate and successfully adapt to internal and external economic and social challenges, by providing new economic opportunities, including higher quality jobs.

Finnish researchers Huovari et al (2001) defined regional competitiveness as the ability of regions to foster, attract and support economic activity so that its citizens enjoy relatively good economic welfare. Competitive regions have built a production environment with high accessibility that perpetuates and attracts mobile production factors, and results in fostering the economy. These mobile factors include skilled labour, innovative entrepreneurs and footloose capital. Success in attracting these factors creates external economies, such as agglomeration and localisation benefits, that further enhance the economic fortune of a region. The factors contributing to regional competitiveness vary to some extent depending on the type of region and the sectors present in the region.

It is difficult to identify exactly how any particular factor influences competitiveness. This is due to the intangible nature of some factors and because some of them overlap and enhance one another. Cambridge Econometrics and Martin identify three main types of region: production site regions increasing returns regions and knowledge hub regions. Each requires distinct interventions to improve productivity. They note that “the sources of regional competitiveness

may originate at a variety of geographical scales, from the local, through regional, to national and even international.” (Macgillivray, 2005)

For a unification of main factors of regional competitiveness was used a model of „regional competitiveness hat“, created from the regional outcomes, outputs, throughputs and regional competitiveness factors.

In the studies concentrated on regional competitiveness following factors is specified group of factors, which we also think at the most important for the competitiveness of a region (Ručinská, 2007):

- § industrial structure
- § innovation
- § education and universities
- § clusters
- § demography
- § factors of localization
- § local policy and government quality
- § entrepreneurial environment and inter-firm networks
- § foreign direct investments

Other ways how to define regional competitiveness could be for example: to compare inputs and outputs, benchmarking method, analyses of factors, typology of regions.

## Conclusion

In mentioned theories how to measure regional competitiveness we incline to the theory, also indicators and results of the region we can define like a factors of the ability to compete. This factors we can measure, influence and turn to regional needs. The region’s results determine the national ability to compete and the living standard of population. On the basis of analyze we can say, the regional competitiveness is a parameter, we can influence and it is composite of many elements, and every of them is useable to increase the regional development.

**This paper is contribution to the research grant project supported by Scientific grant agency (VEGA), project number 1/0328/09.**

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# WAVES OF MERGERS AND ACQUISITIONS

## VLNY FÚZIÍ A AKVIZÍCIÍ

*Aneta BOBENIČ HINTOŠOVÁ*

### **Abstract**

Mergers and acquisitions have become worldwide phenomena not only in the recent years. It has been proved that mergers and acquisitions tend to occur in waves. Five basic merger and acquisition waves are usually described in connection with history of United States. However, their impact has been obvious also in other parts of the world. The various merger and acquisition waves have provoked major changes in the structure and further development of the world business activity. The article focuses on historical analyses of the five merger and acquisition waves describing significant factors and trends that characterized particular waves.

**Key words:** Waves of mergers and acquisitions, industry concentration, hostile takeovers, international business

### **Abstrakt**

Fúzie a akvizície sa stali celosvetovým fenoménom, a to nielen v posledných rokoch. Bolo preukázané, že fúzie a akvizície majú sklon vyskytovať sa vo vlnách. Päť základných vln fúzií a akvizícií sa zvyčajne opisuje v súvislosti s históriou Spojených štátov. Ich vplyv bol však zreteľný aj v ostatných častiach sveta. Viaceré vlny fúzií a akvizícií vyvolali významné zmeny v štruktúre a ďalšom vývoji obchodnej činnosti vo svete. Článok je zameraný na historickú analýzu piatich vln fúzií a akvizícií opisujúc významné faktory a trendy, ktoré charakterizovali príslušné vlny.

**Kľúčové slová:** Vlny fúzií a akvizícií, odvetvová koncentrácia, nepriateľské prevzatia, medzinárodné podnikanie

### **Introduction**

Corporations tend to seek always new and original methods of growth that would beside more significant market force done by size itself ensure them also source of sustainable competitive advantage. Generally, two sources of corporate growth can be distinguished, namely internal (organic) and external (non-organic) growth. Organic growth is usually defined as a company's growth rate excluding any scale increases from acquisitions or mergers. Growth of this type is also referred to as a company's core growth. Organic growth is generated for example by selling more products to current customers, selling products to new customers or selling products at higher prices (Dalton, Dalton, 2006). Although gradual investing of own resources to develop new competencies and capabilities brings more stable position in the future, it always takes too much time.

Mergers and acquisitions (hereinafter also “M&As”) as typical means of non-organic growth have on the other hand advantage of linkages with a chosen partner who has already developed the appropriate competencies and gained necessary customers. They will also typically be faster – but they are often going to imply higher risk because they involve partnerships that have to be worked out (Thompson, Martin, 2006). In increasingly turbulent and uncertain environment have corporations usually little time to grow organically. Therefore many organizations continue to prefer external means of growth to internal. As Ghemawat and Ghadar (2000) remark you can’t look at the front pages of key economic newspaper without seeing yet another megadeal in the headlines. However, according to them the rush toward huge cross-border mergers and acquisitions is based on a faulty understanding of economics.

Nevertheless, the history shows that mergers and acquisitions gained and lost its popularity in turns. It has been observed that worldwide M&As usually happen in waves (Mueller, 1989) and this phenomenon is explained by nonstrategic as well as strategic explanation. The first one supposes that M&As occur when some common exogenous factor makes them profitable. The second emphasizes the strategic interrelationship among companies and argues that wavelike behavior stems from the fact that companies find it profitable to merge only if competitors also merge. Both explanations are according to Fauli-Oller (2000) correct and therefore they should be considered together in order to attempt to explain takeover waves. Other researchers have explained that merger and acquisition waves tend to be caused by a combination of economic, regulatory and technological shocks (Mitchell, Mulherin, 1996).

The aim of this article is to present and characterize most clearly identifiable waves of mergers and acquisitions that took place in the modern history of forming global corporations. The detailed analyses of factors that initiated and enhanced the respective wave as well as of the preferred type of realized M&A help to understand current trends in M&A activities. Hence, the article focuses more closely on the last M&A wave. The article forms partial outcome of the project VEGA No. 1/0149/08 “The successfulness of concentrations and their relation to competitiveness of Slovak economy on sectoral level”. Further identification and characteristics of M&A waves is processed according to works of North (2009); DePamphilis (2008); Gaughan (2007); Moeller, Schlingemann, Stulz (2005); Baláž (2004); Peck, Temple (2002); Rock, Rock, Sikora (1993) and Stigler (1950).

## **1. First wave: 1897 – 1904**

Mergers and acquisitions have played a significant role especially in the history of American capitalism and development of its modern corporate form. The first wave began in the aftermath of the protracted profit depression of

1873-1895 and reached its climax between 1898 and 1904. This was the period of historic "horizontal" mergers, in which competitors within a single industry were consolidated into a massive monopolistic structure. The most successful M&As were formed in industries where technology and markets permitted reduction in costs, such as heavy industries, mining industry, transportation.

The most significant corporation to emerge from this first wave was US Steel, which at that time accounted for as much as 75 percent of US steel making capacity. During the 1890s mergers had become a standard way of creating large multiunit industrial companies. Further products of this merger wave were DuPont, Inc., Standard Oil, General Electric, Eastman Kodak and American Tobacco Inc. While these companies are major corporations today with large market shares, some were truly dominant companies by the end of the first M&A wave. For example American Tobacco enjoyed a 90 % market share and Standard Oil, owned by J.D. Rockefeller, commanded 85 % of its market. By 1909 the 100 largest industrial corporations controlled nearly 18 % of the assets of all industrial corporations.

By the end of the first great merger wave, a market increase in the degree of concentration was evident in American industry. The number of companies in some industries, such as the steel industry, declined dramatically, and in some sectors only one company survived. Although significant efforts to regulate such tendencies occurred (for example enactment of Sherman Antitrust Act in 1890), financial factors rather than legal restrictions forced the end of the first merger wave. The stock market crash of 1904 followed by the banking panic of 1907, closed many of the nation's banks. Without financial support the first great M&A period came to a halt.

## **2. Second wave: 1916 – 1929**

George Stigler, the Nobel prize winning economist and former professor at the University of Chicago, contrasted the first and the second M&A wave as "merging for monopoly" versus "merging for oligopoly". This wave differed from the first in several key respects: first, a far greater percentage of mergers were "vertical" rather than "horizontal" in character – that is, they combined companies which had a buyer-seller, or vendor-supplier, rather than competitive, relationship. In some cases, as in the formation of Allied Chemical, the merged companies shared similar production processes and marketing strategies, from which strategic competitive advantages were derived.

During the second M&A wave several industries were consolidated. Rather than monopolies, the result was often an oligopolistic industry structure. The consolidation pattern established in the first wave continued into the second wave. During this second wave, the American economy continued to evolve and develop, primarily because of the post – World War I economic boom, which

provided much investment capital for eagerly waiting securities markets. The second merger wave ended with the stock market crash on October 29, 1929. After the crash, the number of corporate mergers and acquisitions declined dramatically. No longer focusing on expansion, companies sought merely to maintain solvency amid the rapid and widespread reduction in demand. In historical terms, the first and second wave of mergers and acquisitions were significant episodes in the rise of American corporations to a position of global dominance.

### **3. Third wave: 1965 – 1969**

The characteristics of the third wave of M&As differed fundamentally from those of the first two waves. It became not uncommon for relatively smaller companies to target larger ones for acquisition. In contrast, during the two earlier waves, the majority of the target companies were significantly smaller than the acquiring company. The aim of the third wave strategy was to maintain growth and build profits by aggressively buying companies only remotely related, or not related at all, to the industry in which the corporation making the purchase was historically rooted. Approximately 80 % of realized mergers and acquisitions in this period had thus conglomerate character. For this reason, the degree of competition in different industries did not significantly change despite the large number of mergers and acquisitions. This new strategy was strongly connected with deepening pessimism of corporate managers about the possibility of generating profit within corporate core industries. Mergers and acquisitions became a central preoccupation of American corporations. The number of such transactions grew from 2000 in 1965 to more than 6000 in 1969. More detailed look at the third wave of M&As represented by number of realized transactions presents the figure 1.

A result of this merger mania was the development of a powerful new business activity - the buying and selling of corporations and thus the creation of "a market for corporate control". This market expanded exponentially in the 1970s. The third merger and acquisition wave was followed by a divestiture wave, as corporations sought to sell off underperforming components of their organizations. To a significant extent, the divestitures were an indictment of previously inconsiderate acquisitions. It was, in any case, a new phenomenon. Prior to 1970, divestitures were quite rare. In the course of the 1970s, it became a common business transaction.

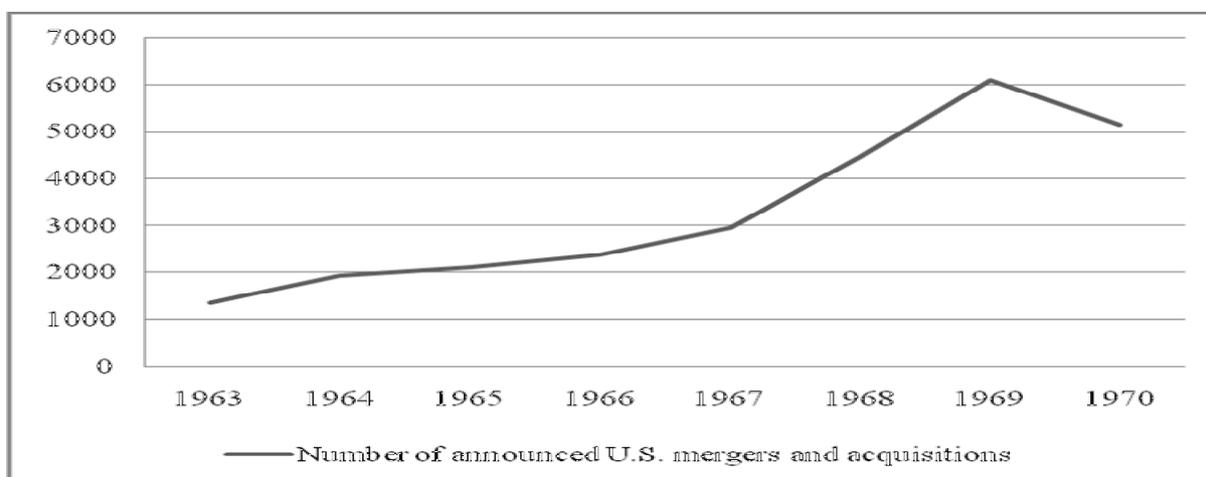


Figure 1  
**Number of announced U.S. M&As within years 1963-1970**  
 Source: Gaughan (2007)

#### 4. Fourth wave: 1984 – 1989

The downward trend that characterized M&As in the 1970s through 1980 reversed sharply in 1981. Figure 2 shows the number of M&A announcements for the period from 1970 to 1989.

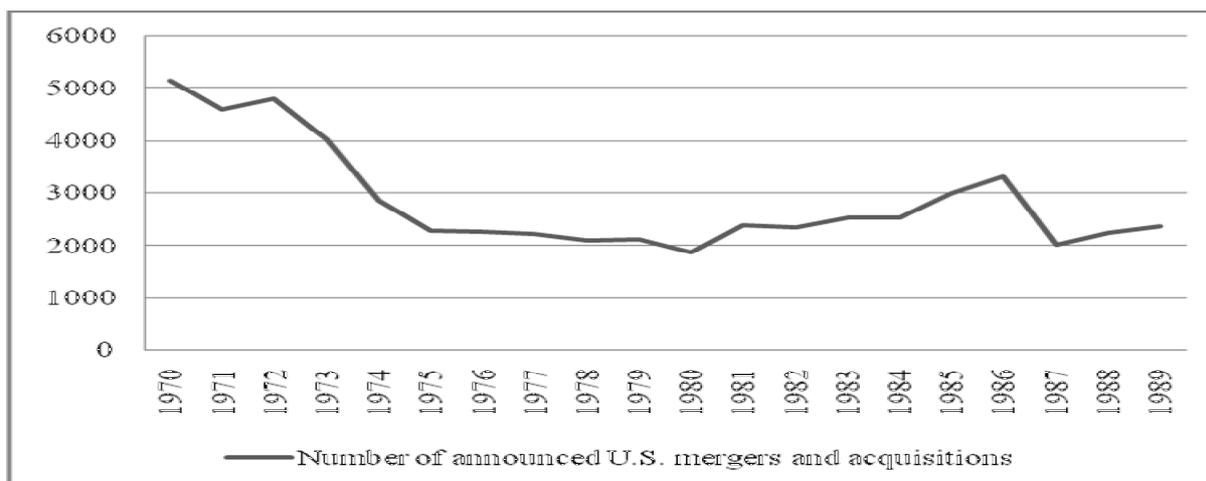


Figure 2  
**Number of announced U. S. M&As within years 1970-1989**  
 Source: Gaughan (2007)

Within fourth wave of M&A the significance of the stock exchange in international business was particularly evident. Central role in this period played investment bankers. Mergers and acquisitions became for them a great source of virtually risk-free advisory fees. Merger specialists at both investment banks and law firms developed many innovative products and techniques designed to facilitate or prevent takeovers. Under the guidance of investment bankers, the

"hostile takeover" assumed unprecedented dimensions. Another significant feature of the fourth wave was the financial scale of the mergers – it became the wave of megamergers. The total dollar value paid in acquisitions rose sharply during this decade. The number of transactions involving more than \$100 million increased more than 23 times between 1974 and 1986.

From the sectoral point of view, volume of M&As was clearly greater in certain industries. For example, the oil and gas industry became more concentrated in this period. During the second half of the 1980s, drugs and medical equipment deals were the most common. One reason some industries experienced a disproportional number of M&As as compared with other industries was deregulation. When the airline industry was deregulated, for example, airfares became subject to greater competition, causing that some air carriers could no longer compete effectively. The result was numerous acquisitions and a consolidation of this industry. The banking and petroleum industries experienced a similar pattern of competitively inspired M&As.

Mergers and acquisitions during the fourth wave were financed with immense amounts of debt. Another term that came into the lexicon of the business community during this wave is the leveraged buy-out or LBO. Many companies financed the majority of the acquisition price with borrowed capital through bank loans and by issuing high-yield bonds. The common practice was to aim acquisition activity at underperforming companies, to restructure them following the acquisition and finally sell off underperforming assets and implement cost-cutting measures. After achieving these efficiencies, the company was usually then resold at a significant profit. Such speculative acquisitions became a far more reliable means of getting money, than the arduous and uncertain process of industrial production.

## **5. Fifth wave: 1992 – 2008**

Although the fifth merger wave featured many large megamergers, there were fewer hostile deals and more strategic mergers occurred. As the economy recovered from the 1990-91 recession, companies began to seek to expand and mergers once again were seen as a quick and efficient manner in which to do that. Unlike the deals of the 1980s, however, the transactions of the 1990s emphasized strategy more than quick financial gains. Figure 3 illustrates the trend in both global and U.S. merger and acquisition activity during the fifth wave.

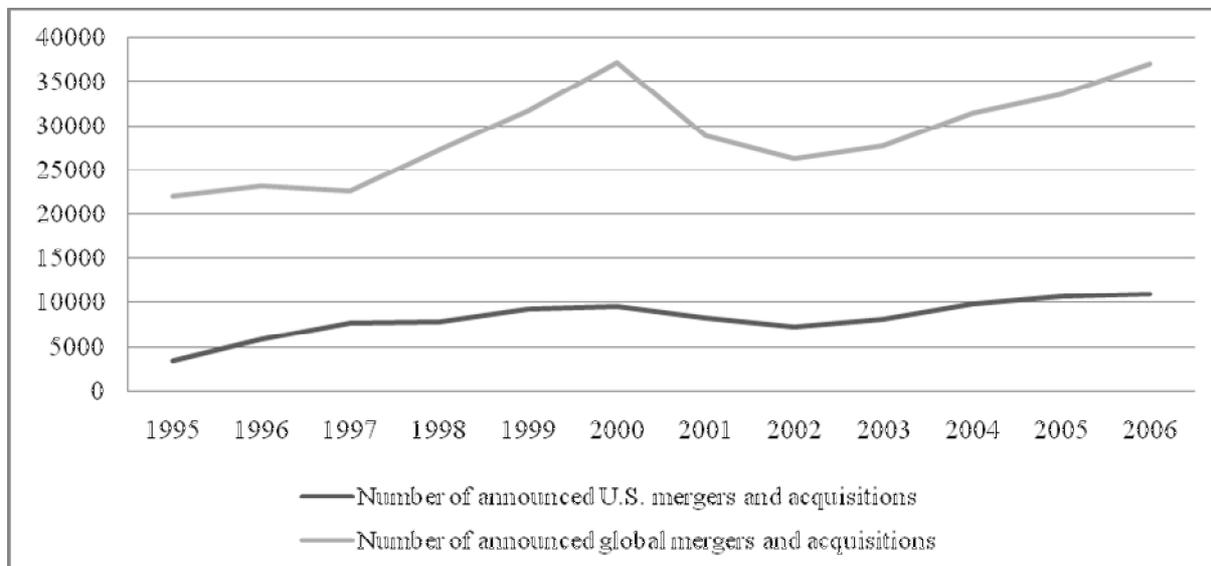


Figure 3

**Number of announced global and U.S. M&As within years 1995-2006**

Source: DePamphilis (2008)

During the fifth wave the M&As tend to be heavily concentrated in banking, telecommunications, health care, utilities and in such commodity industries as oil, gas, and metals. Ongoing deregulation in the banking, telecommunications, and utilities industries has promoted M&A activity in these sectors. Expectations of high commodity prices have encouraged consolidation in natural source industries as a less costly and more rapid means of getting raw materials to market than by developing new mines and engaging in new exploration.

Despite the fact that many of the transactions were marked in the media as creating efficiencies and "synergies", many of them in reality lacked any substantive economic rationale beyond the immediate financial gains eagerly anticipated by the investment bankers, law firms, big shareholders and corporate executives. The results of many of these speculative transactions were disastrous. A large number of consolidated companies eventually went bankrupt. Between 1998 and 2001, the shareholders of companies acquired through mergers and acquisitions lost the staggering sum of \$240 billion. Eighty-seven deals lost acquiring shareholders \$1 billion or more.

The fifth wave of mergers has been significant in yet another respect. It is truly international in scope. Though it began somewhat later than in the United States, the value of European transactions was, by 1999, almost as large as the American deals. Asia also has participated significantly in this wave of mergers. This trend continued into the new century, after a period of slowdown that followed the market contraction of 2001-02. The M&A business picked up steam again and became truly globalized. New potential targets and bidders came on the market as a result of increased privatizations — especially in Eastern Europe, Asia, and Central and South America.

Increasing interdependence of economies across the globe has accelerated the frequency of cross-border transactions to achieve the scale necessary to compete with larger global competitors. Although the developed countries (EU, other developed Europe, North America, other developed countries such as Australia, Israel, Japan) remain most important players in the M&A market, both in term of value of purchases and sales, developing countries and economies in transition (South-East Europe, CIS) are gradually increasing their role as buyers in the global M&A market, as it is obvious from the figure 4.

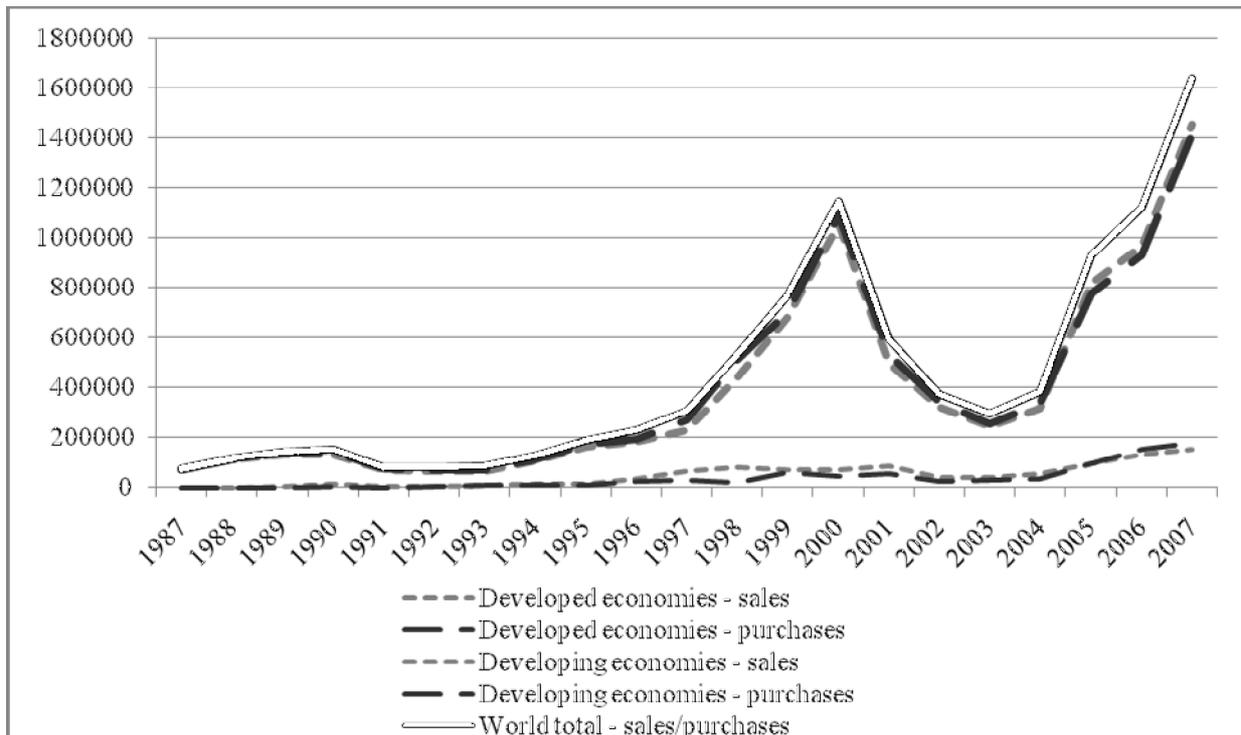


Figure 4  
**Value of cross-border M&As by economy of seller/purchaser in millions of dollars**  
 Source: according to World Investment Reports 1991-2008

## Conclusion

The history showed that each merger movement occurred when the economy experienced sustained high rates of growth and coincided with specific developments in economy. Each merger wave corresponded to the emergence of some key economic factor such as a rising stock market and low interest rate or technological development.

The first merger wave included many horizontal combinations and consolidations of several industries. The second one combined horizontal as well as vertical transactions. The third wave can be characterized as conglomerate area. The fourth wave was unique in that it featured the appearance of the corporate raider, who often used the junk bond market to

finance highly leveraged deals. In addition, the deals of the fifth merger wave were a worldwide phenomenon, with a large volume of mergers taking place in Europe and Asia. In the light of the future it is expectable that companies from developing countries will strengthen their position in the world M&A market.

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# INFLUENCE OF QUALITY COSTS ON THE STRUCTURE OF TOTAL COSTS IN MEDIUM-SIZED COMPANIES

## VPLYV NÁKLADOV NA KVALITU NA ŠTRUKTÚRU CELKOVÝCH NÁKLADOV V STREDNÝCH PODNIKOV

*Patrycja PUDŁO – Peter MESÁROŠ – František MESÁROŠ*

### **Abstract**

Quality and costs which come into beginning during investing into quality are the basic factors which have influence on the market position in global environment. Nevertheless many companies still do not know what the costs of quality are, and do not see the benefit from recording them. This article is focused on the sector of medium size companies from trade, production and service sector. Also in this article we are focus on showing the influence investing into quality on the structure of total costs. We underline the influence of company sector on the interest of recording costs of quality. This article is an attempt of show that investing into quality may bring decrease of total costs or total costs per unit, article explain how companies belonging to individual sector influent the promptness of lowering total costs or total costs per unit as an effect of investing into quality.

**Keywords:** quality, costs of quality, quality improvements

### **Abstrakt**

Kvalita a náklady, ktoré vznikajú pri investovaní do kvality, sú základnými faktormi, ktoré majú vplyv na pozíciu na trhu v globálnom prostredí. Napriek tomu veľa podnikov ešte nepozná čo sú to náklady na kvalitu a nevidí výhody ich sledovania. Tento príspevok je zameraný na sektor stredných podnikov z oblasti obchodu, výroby a služieb. V príspevku sa zameriavame na poukázanie vplyvu investovania do kvality na štruktúre celkových nákladov. Cieľom príspevku je poukázať na to, že investovanie do kvality môže priniesť pokles celkových nákladov alebo jednotkových nákladov.

**Kľúčové slová:** kvalita, náklady na kvalitu, zlepšovanie kvality

### **Introduction**

Medium size companies and small companies play the basic role in economy of European countries. They are the main source of the free workplaces, they inspire the spirit and vision of company. That's why they are special favorable stimulators of competition and unemployment in Europe. Entrance of Slovakia to European Union caused the increase of requirements on this sector, and competition in national, regional and local markets. That's why only high quality ranged products and services may satisfy the customer requirements, and increase competitive position of Slovak companies on the global market. Medium size companies have general problem with getting funds from national and European sources because they are too big, from the other

hand they are too small to compete with big global companies and with small ones whose elasticity and adaptation to changes is general bigger than medium size companies. In this situation investing into quality of product and services is the most profitable road.

## 1. Quality and Costs of Quality (CoQ)

With quality we can meet from the dawn of the history, quality is a part of decision making process. Primitive human who had been searching place to sleep and food was lead by “costs” (understood as a crossing difficulties) and benefits of using surrounded things. Organoleptic impression was for him a basic factor to assessment of quality. Therefore we can say that quality is very subjective concept. In present time we can meet with six main groups of quality definitions: definition based on customer represented for ex. by Juran or Edwards, definition based on manufacturing represented by Crosby, Gimmore, definition based on product represented by Leifer, definition based on value represented by Broh, definition based on transcended approach represented by Pirsie, and definition based on complex approach represented by Feigenbaum<sup>1</sup>. In each group exist plenty of different definitions. Treating quality as a subjective concept is a cause of different approach of individual companies to quality. Quality is also very dynamic concept, during the time for one customer the same product may have different quality, for example 40 years ago people were satisfied having any kind of washing machines. Today customers have more requirements and more possibilities of choice so, they look at energy-saving, time of washing, size, design, possibility of washing all kind of cloths even very delicate. Therefore, monitoring of quality and continuous quality improvement become very important issue in several companies. Assurance the proper level of quality product and services generate costs. Well-known saying says that - "quality costs, but the lack of quality costs much more" (Myszewski, 2005). In professional literature (Baran, 2004a), (Baran, 2004b), (Cole, Mogab, 1995), (Myszewski, 2005) etc. we can meet with different definitions of quality costs, for ex. Juran's definition consider, quality costs as a total of all costs which would be disappear if are not any problems with quality. Crosby for quality costs accepts all costs which are appending to achieving of quality. Connection between two definitions shows that company bears: costs connected with assurance of proper level of quality or costs connected with lack of quality. In this situation the main question which comes into mind is: How much will company pay for assurance high quality products and services and what other benefits can bring quality? How much will cost company the lack of quality?

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<sup>1</sup> More information in P Pudło, Mizla M. *Ekonomía digitálnéj éry*.

How results of assurance high quality can influence on the level of sale and customer loyalty?

Analyzing theory and practical cases show that improve of quality brings to companies all over the world many benefits. First of all increasing company's incomes, and increase of satisfaction external and internal client, increase of competitive position, building loyalty of customers and decrease of total costs, or total costs per unit. These benefits assure company's profitability in long – time<sup>2</sup> period.

## 2. Influence of Quality Improvement

Frequently, the financial analysis divide costs into two types: variable costs and fixed costs. Fixed costs are not depended on the amount of goods or service produced during the period. Fixed costs are usually measured as costs per unit of time, such as rent per month, or salaries per year. Naturally, fixed costs are not fixed forever. They are only fixed over a predetermined time period. Variable costs change as the quantity of output changes, and they are zero when production is zero. Costs of direct labor and raw materials are usually variable. It is common to assume that variable costs are proportional to production (Ross, Westerfield, Jaffe, 1990). Total sum of the production costs are the sum of variable and fixed costs.

In literature we can meet with different definitions of quality, which take into consideration different points of view. In this article we concentrate on approach which is based on customer. This approach is represented by Juran or Edwards and it was presented in norms ISO 9000 (Pudlo, 2007), (Pudlo, Mizla, 2007).

Each fulfillment of consumer requirements is connected with costs. We assume that mostly of costs which are bear by the companies on the improvements into organization are fixed (new technologies, machines, patens, know – how, and some of the wages cost). We have to take into consideration that when company bring for. ex. some new technology into effect, than our variable cost will fall, because the company will not need so many workers and those which will stay will have bigger knowledge and very often wider competence. We can also say that, categories of costs generate after improvement into quality depend on the company's sector. It is necessary to add that, most companies didn't treat quality expenditures as an investment, because there has been no solid basis for assessing financial impact (Rust, Zahorik, Keiningham, 1995).

To check influence quality on fixed and variable costs in company, authors tried answer at question:” If quality improvement can make organization

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<sup>2</sup> More information in P Pudlo Influence improving quality on structure of total costs

more profitable and may lowering total costs? On graph 1 we see situation in company before and after quality improvement.

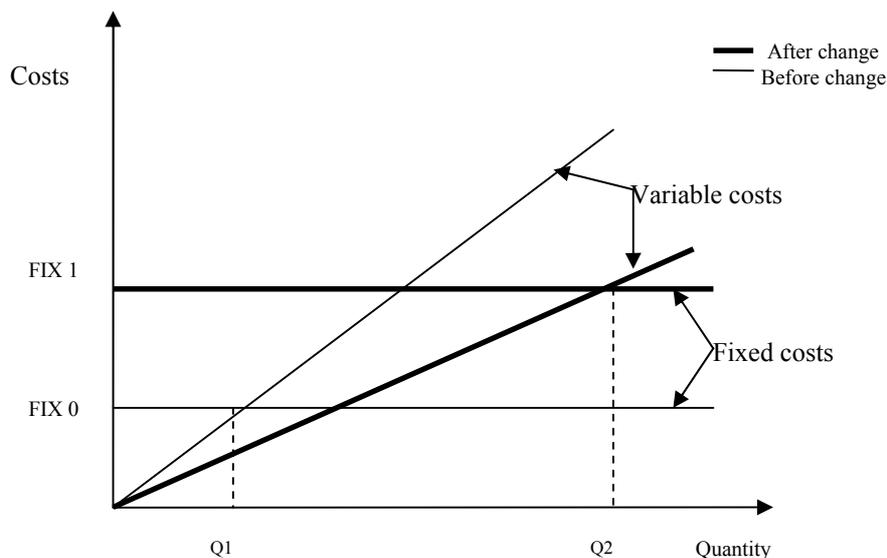


Figure 1  
**Fixed Costs and Variable Costs before and after quality improvement**  
 Source: Own work

During analyzing figure 1 there appears a question, if the sum of higher fixed costs and lower variable costs after quality improvement will cause lowering the total costs before change.

When we analyze company from the short point of view than, the answer is NO because by the same quantity of produced goods variable costs will not fall and increased fixed cost (during quality improvement will cause that total cost after improvement will be bigger than before). But when we analyze company from the long point of view than the answer is YES. Analyzing figures 2 and 3 will be helpful to prove this hypothesis.

It is necessary to add that attention of Slovak managers is still concentrate more on the operative efficiency and orientation of company in short time horizons (Gavurová, 2007). This situation is an important barrier which can slow down an initiation of improvements.

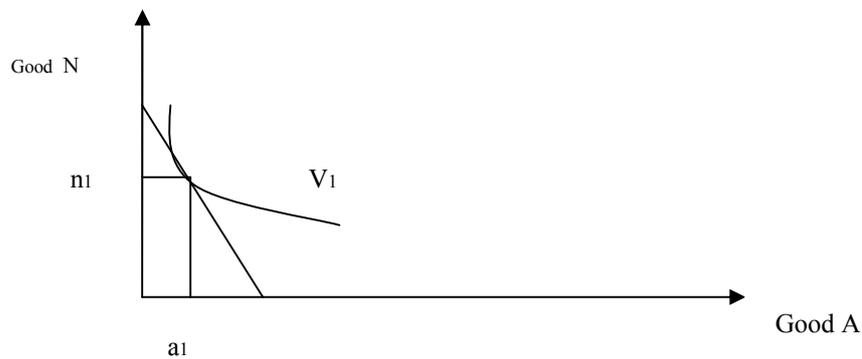


Figure 2

**Net consumer value equilibrium**

Source: Cole W., E., Mogab, J. W.: The economics of TQM, Clashing paradigms in the Global Market. Blackwell business, 1995 p. 150

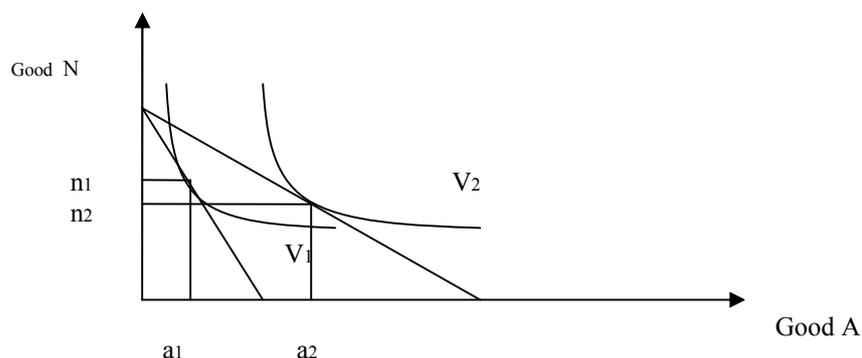


Figure 3

**Customer reaction to improved value**

Source: Cole, W.E., Mogab, J.W., The economics of TQM, Clashing paradigms in the Global Market. Blackwell business, 1995, p. 150

In figure 3 we present a consumer 's indifference curve, V1, showing the combination of a bundle of goods N (representing all other goods or non- A goods), which provide the consumer with a constant net consumer value. The location and slope of the budget line reflect the consumer's income and relative opportunity costs of the goods. The tangency between the indifferent curve and the budget line indicates the combination of good A and good N the customer should purchase to maximize net consumer value (Cole, Mogab, 1995). Good A is produced by company which improves the product, and good N by company which does not improves the product. We also need to add that there is not change in prices each goods. The effect of consumer's decision making process will depend on the type of the product improvement. If the improvement results in less maintainers, repair on other aspects, that reduce the non price opportunity

cost to the consumer, the effect is to alter the slope of the budget line. The budget line become flatter, reflecting the reduced opportunity cost of good A as shown in graph 3. In result consumer will buy more of the good A and less of the good N than previously and more to a higher indifference curve reflecting an increase in net customer value.

If demand of product A which is represented by company which invest into quality is rising then, the variable costs of each unit is falling, company produce more of the qualitative products for the same price, total costs decreased and total profit increased.

The benefits of quality improvements come in two forms. First benefit is visible in improved ability of the firm to attract new customers. The second benefit is connect with current customers, which are more satisfied from the products which they buy, they are starting to repeat purchase, and they became loyal customers. Small increases in retention rates can have a dramatic effect on the profits of a company (Rust, Zahorik, Keiningham, 1995). Researches of Rust, Moorman Dickson, showed that the firms adopting a revenue emphasis (to quality profitability focuses externally- on customer perceptions and attitudes that will lead to more sales) to manage quality profitability may reap the greatest rewards (Rust, Moorman, Dikson, 2002).

Practical experiences show that many factors have an influence on building customer loyalty. These factors are connected with quality of product service or customer service. The way of quality defining (by different customers) is possible to describe by proper communication of company. Currently the most known way of communication with customer is communication by Internet or communication "face to face". It is necessary to add that, investing into quality generate some of the level of quality costs. Proper structure of CoQ assure achievement of savings, savings on complains, and savings connected with low quality. Lowering of the quality costs is transferred on the level of company total costs, and also on the level of profit and price of products or services. From the other hand increased of the company profit gives possibility of increasing workers payments. Earnings are the basis factor influenced on the workers satisfaction them loyalty and quality of them work. This situation is connected with increasing of the workers commitment into work and quality of customer service. In present economical environment called „economy based on knowledge”, very important become human factor. Proper level of customer service - proper approach to client and a professional workers competences more and more determinate the purchase of the potential client. We can add that in new economical environment, leadership puts more and more attention on human factor. We observed change of perception - another words, leadership treats workers not as a source of cost but as a resource, which company have to use in most efficient way. That's why the motivation system of company is very important stimulator, which should assure workers satisfaction and high quality of work. Motivation system is based not

only on proper payment. It should take into consideration of “company culture”, which is showing relations inside company and which illustrate the flow of information between workers and employer (Pudlo, 2007), (Pudlo, Mizla, 2007).

Quality improvements in industry is mostly connected with fixed costs (new technology. machines cars, patents, innovations in production area, some of workers payments). Quality improvements in service are mostly connected with fixed costs (new machines, some of the payments – usually employees get money for time- work f. ex in the sector of banking, hospitals, sector of insurance, in design offices, in the sector of education). We can not forget that exist many jobs from different sectors (trade, production or services) where salary is treated as a variable cost. But currently the fixed part of salary have more than 50% of all salary, the rest is variable part and it's level depend on for example bonuses, number of years overworked in one company, workers experience.

### **3. Influence of Quality Improvements on the Structure of Total Costs in the Sector of Medium-sized Companies in Slovak Republic**

#### **3.1 Research Methodology**

Data presented in the article were got from individual interviews with personal workers in individual companies from area of Eastern Slovakia region. The interview was structured and perpetrated as a questionnaire. The questionnaire had seventeen questions, eleven of them were open and the rest had form closed questions. For faster processing data we used internet. The internet form was available on the university websites (<http://dotazniky.euke.sk/?d=48>). Database was created automatically after completed and sent the survey. Authors collected the data from September 2007 to January 2008. Individual companies from region of Eastern Slovakia (self region of Prešov and Košice) were chosen random selection. Companies which employ 25 to 250 workers took a part in presented research. Research sample contained 61 companies. Figure 4 shows the representation of sectors in our sample.

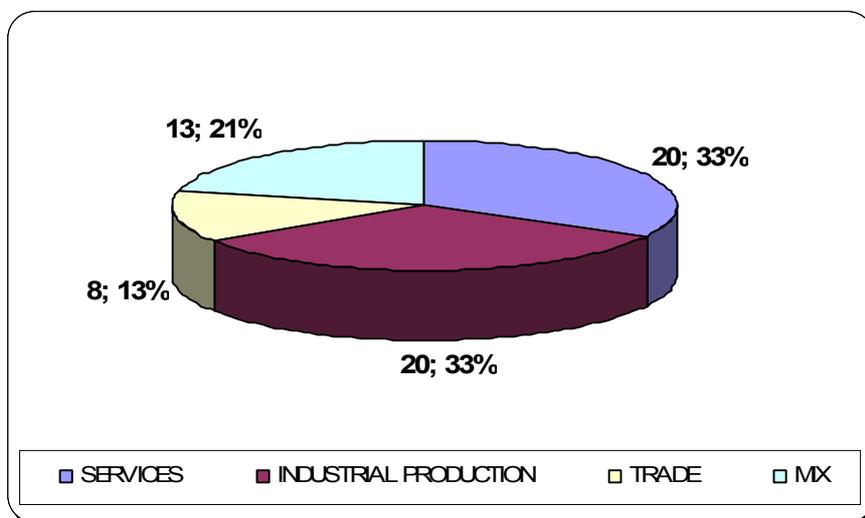


Figure 4

**Research Sample – sectoral view (absolute values and percentage)**

Source: Own research

The main issues of presented survey was to find an answers at questions:

- Ø What is an interest of recording COQ in companies from individual sectors?
- Ø What is the structure of total costs in companies from different sectors?
- Ø What is the structure of total costs in companies which recording the COQ?

### 3.2 Data Analysis and Results

Research conducted at the beginning of 2008 on group of 61 medium size companies from production services and trade sectors in area of Eastern Slovakia shows that problematics of quality costs is still not known. Almost 40 % of all companies declare lake of recording CoQ (costs of quality). For the main reasons of this situation companies showed: not enough knowledge and models which would be helpful with recording CoQ - 25,81 % of all answers, recording this cost do not bring lowering total cost 29,03 %, companies know what are the CoQ but they were not interested of recording them 35,48 %, companies do not know what categories of quality cost they have 9,69 %. If we look at interest of quality cost in individual sectors we see that the biggest interest of recording this costs are present in production and mix companies adequately 70 % and 71,43 % from all examined companies. Less interest we observe in companies from sector of services 57,89 % and the least from trade sector 37,50 % (graph 4). Many answers showed that companies are not interested of recording cost bore during investing into high quality product or

services. Those companies who are interested of recording COQ and want to try record this cost don't have enough of information or there is not enough of accounting solutions which would be successful applicant in practice. This article is an attempt of show how belonging companies to individual sector can affect on promptness of lowering total costs as a effect of investing into quality. This situation may explain why companies from trade and service sector are less interested of recording CoQ.

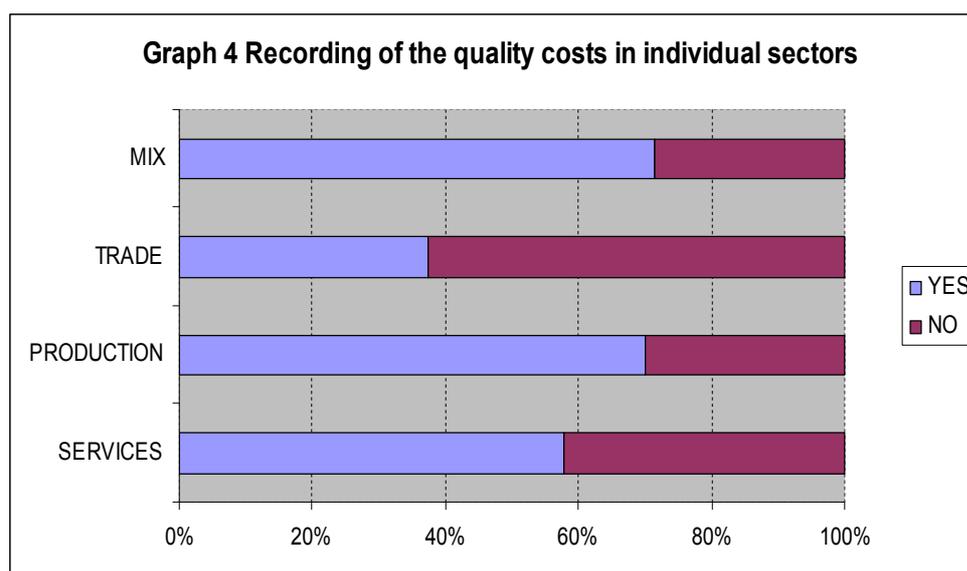


Figure 5  
**Recording of the quality costs in individual sectors**  
*Source: Own research*

Data got from conducted research suggested the identical structure of variable and fixed cost in production and service sector. To check this suggestion authors used Kolmogorov- Smirnov test.

H0: separation probability of variable and fixed costs in both of selected sets is from the same basic set.

H1: separation probability of variable and fixed costs in both of selected sets **is not** from the same basic set.

Kolmogor- Smirn test reject hypothesis H0 on  $\alpha=0,05$ .

Interest of recording quality costs in companies with different structure of fixed and variable costs and from production, service, trade and mix sector is illustrate on figure 6.

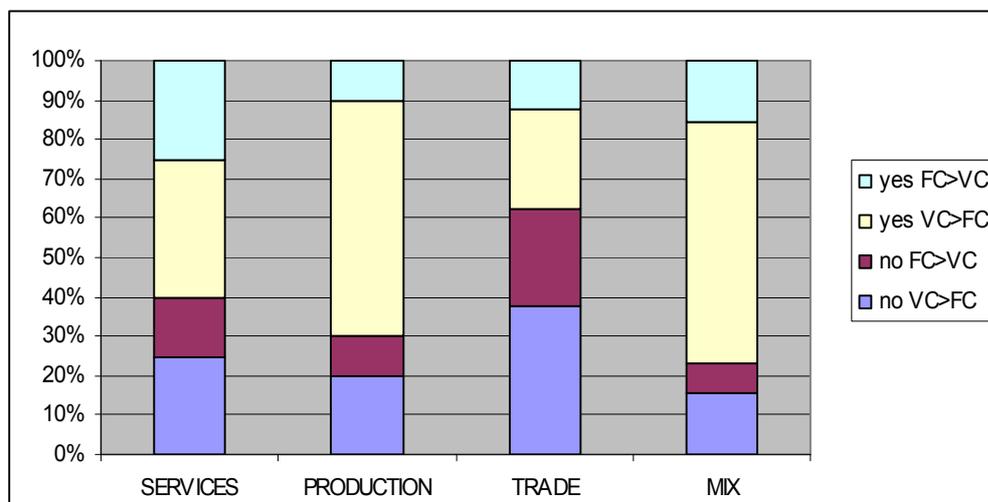


Figure 6

**The interest of recording the quality costs in the companies form different structure of fixed and variable costs presented in individual sectors**

*Source: Own work*

The biggest interest of recording quality costs was observed in companies which had more variable than fixed costs in the structure of the total costs. In companies from production and mixed sector this suggestion was not the most visible. This situation may be connected with presented in chapter 2 general model of variable and fixed costs and changing this model after investing into quality, (assume that mostly costs connected with investing into quality are fixed). Presented model showed that investing into quality changed the structure of total costs. From long point of view the growth of fixed costs may evoke decrease of the variable costs and variable costs per unit, in final total cost per unit (the economy from scale). The biggest interest of recording quality costs was in production sector 70 % of all companies from this sector have evidence of QoC. This situation may be connected with the character of the quality investments in this sector. The automation of production process, new technological solutions are mostly of quality improvements in production sector. Implementation of those improvements saved: materials and energy (main category of variable costs), also time and human work (less workers on basic position). Improvements in area of quality generate first of all increase of the prevention costs connected with assurance of proper level of quality (technical quality and quality required by customers). Instead of this growth we observed decrease of the internal and external failures which are also part of the variable cost. The record of quality costs gives company a transparent view on costs which are connected with quality. Record this costs opens possibility of creating structure of this costs. Less interest of recording quality costs in service and trade sector can be tied with the character of quality improvements in this sectors. Information and new technologies, (software applications and computer hardware) CRM solution, rebuilding (shop, office) can be treat as a fixed cost in mentioned sectors. Nevertheless mostly of improvements in service and trade

sector are connected with human factor. P. Kotler (Kotler, Armstrong, Saunders, Wong, 2002) writes that quality, customer service and value add are the main factors influent on clients. Character of service and trade sector cause that even if we are not convinced to buy some product we are buying it because of the nice atmosphere in shop or nice and professional service. That's why some of the improvements in those sectors can not be clearly define as a fixed costs for ex. (some workers payments, or professional trainings costs), nevertheless new technologies and professional personnel can have influence on the decrease of all employed workers. Those differences between production service and trade sector may have influence on the interest of recording quality costs.

## Conclusion

Quality and the level of production costs are the main factors which decides about place company on the market. A proper structure of the costs have influence on profitability and competitive ability of firm. Presently lowering the total costs is possible by taking into account costs connected with quality, which are called the costs of quality. Nevertheless the character of the costs connected with assurance of the high quality products and services are different in individual companies. Production sector is and always was closely connected with atomization and technological solutions, however success in trade and service sector strongly depend on people. These differences during the time can have influence on the return on quality of the invested assets, and the level and structure of total cost. Our investigation shows that company sector can have influence on the interest of evidence of quality costs and in the final on the structure of total costs. Future directions of research can be focus on the promptness of return on invested into quality assets, and the level of profit in individual companies, from the short and long point of view.

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# INTERPERSONAL NEGOTIATION

## INTERPERSONÁLNE VYJEDNÁVANIE

*Cecilia OLEXOVÁ – Alena BAŠISTOVÁ*

### **Abstract**

The article focuses on the basic level of negotiation, the interpersonal negotiation, and its specifics in banking industry, and the strategies and tactics used within this type of negotiation. The data were collected from the employees of two branches of a Slovak bank in Prešov using a specific questionnaire developed for the purpose of this survey. The survey results show the basic features of interpersonal negotiation and show which negotiation strategies and tactics are preferably used by bank employees in negotiation with clients.

**Keywords:** interpersonal negotiation, competitive strategy, cooperative strategy, tactics of negotiation, banking

### **Abstrakt**

Článok je zameraný na interpersonálne vyjednávanie, jeho špecifiká v bankovníctve a stratégie a taktiky, ktoré sa používajú pri tomto type vyjednávania. Dáta boli získavané od zamestnancov dvoch pobočiek slovenskej banky v Prešove použitím dotazníka skonštruovaného na účely tohto výskumu. Výsledky prieskumu poukazujú na základné charakteristiky interpersonálneho vyjednávania a stratégie a taktiky uprednostňované zamestnancami banky pri vyjednávaní s klientmi.

**Kľúčové slová:** interpersonálne vyjednávanie, konkurenčná stratégia, kooperatívna stratégia, taktiky vyjednávania, bankovníctvo

## **Introduction**

Any time people need to come to an agreement on something, they have to negotiate. Negotiation is important also in banks when negotiating with clients. Bank employees have to know and use different strategies and tactics of negotiation to attract new clients, to maintain them, also to search opportunities and make a deal with clients.

The aim of the paper is to present the results of the pilot survey aimed at basic features of interpersonal negotiation and to show which negotiation strategies and tactics are preferably used by bank employees in negotiation with clients.

### **1. Interpersonal negotiation, negotiation strategies and tactics**

There are many definitions of the term negotiation. One of the simple definitions says that the negotiation is a discussion to achieve an agreement

(Oliver, 2005). According to Pereira (1998), the negotiation is the process of problem solving, which is related to two or more people in a conflict situation or when the negotiating sides have opposite, non-matching interests. Similar definition says that negotiation is the means by which people deal with their differences (Loecke, 2003). As the process is among people, emotions and feelings are always presented (Nosek, 2008). The negotiation is always caused by the existence of aims, common for present parties and also by contrary aims. To negotiate is to seek mutual agreement through dialogue.

**Interpersonal negotiation** is the basic type of negotiation between two participants, who negotiate according to their individual interests (Pereira, 1998).

For the purpose of the survey, we understand the interpersonal negotiation in bank practice as the discussion between a bank employee and a client that should result in achievement of agreement or solution that leads to the contract between the bank and its client.

There are two basic **negotiation strategies**, the competitive strategy (sometimes called also distributive or win - lose strategy) and the cooperative strategy (the terms integrative strategy and win – win strategy are also used).

The **competitive strategy** is when negotiators tend to consider the negotiation as the competition. In this case, they do not create any value, they just claim something. The value at stake is fixed, and each side's goal is to get as much of it as possible, without reference to interest and claims of the second party. Negotiators are unwilling to make concessions. So, one party will be the winner and the other party will be the loser. That is why some authors call this strategy the win – lose strategy or also competitive strategy. A significant problem with this strategy is that the loser will not be interested in future relation with the other side, the winner. This can lead to lose – lose outcome.

**Features of the competitive strategy** (Vocelka, 2007):

- § requirements that are not realizable,
- § concealing the information,
- § using threats,
- § negotiation in style: everything or nothing,
- § too hurried negotiation or giving too much time.

Loecke (2003) presents the advice to achieve success in a distributive negotiation:

- The first offer can become a strong psychological anchor point, one that sets the bargaining range. Studies show that negotiation outcomes often correlate with the first offer. So, negotiator should start at the right place.
- Negotiator should not disclose any significant information about his circumstances – including why he wants to make a deal, his real interests or business constraints, preferences among issues or options, etc. It is advantageous, to let the other side know that he has good options if this deal falls through.

- Information about the other side can be a benefit – it is good to know everything about the other's side circumstances and preferences.
- It is good to exploit the information about the other side in setting the first offer or demand.
- Negotiator should not overshoot, to claim aggressively or greedily, because the other side may walk away.

The **cooperative strategy** is about creating the value and claiming it. Negotiators emphasize elements of possible cooperation, based on the looking for the solutions or possibilities which are mutually contributive for all the negotiating parties. Negotiators are generally more willing to give up, make concessions, and stay honest and open.

**Features of the cooperative strategy** are according to Vocelka (2007, p. 5) the following:

- § willingness to share information,
- § open expressing of the own needs,
- § willingness to give time,
- § interest in partner's needs,
- § suggestions do not contain reasonless pressure,
- § taking into consideration different variants and suggestions of alternatives,
- § in case of refusal some idea, the reasonable alternative is provided, etc.

An integrative strategy encourages negotiators to do the following (Loecke, 2003, p. 9):

- § Provide significant information about their circumstances.
- § Explain the reasons why they want to make a deal.
- § Talk about the real interests or business constraints.
- § Reveal and explain in general terms the preferences among issues or options.
- § Consider and reveal any additional capabilities or resources they have might meet the other side's interests and could be added to the deal.
- § Use what they learn to find creative options that will meet the interests of both parties to the greatest extent possible.

The cooperative strategy is considered to be more effective, as it is more favourable for creating the long-term relationships and future cooperation of negotiating parties.

The strategy used in business reality is usually a mix of both strategies, as negotiators use the cooperative or competitive strategy in partial steps of negotiation.

**The tactics of negotiation** are used as the partial procedures of the selected strategy realization, so we present selected tactics according two main strategies.

#### *Tactics for competitive negotiations*

There are three negotiation tactics for distributive negotiations (Pereira, 1996, p. 30-35):

§ **Compliments.** The main objective of making compliments is to make the other side to be more open to our suggestions. Compliments lead to more emotional climate that is better for dialogue and concessions. This tactic is based on:

- praise,
- agreeing with the opinion and attitudes of the other side,
- doing a favour.

§ **Promises and threats.** The promises are easier and usually connected with a positive result while the threats are related to negative outcome.

§ **Persuasion** is the process of social influencing of the negotiating partner, focused on creation of opinion that the offered suggestions, services and products are profitable for him.

Khelerová (1993, p. 87-89) presents the pressure tactics in competitive strategy. These can be open or hide, when the negotiator considers the other side to be honest. In this case we talk about the manipulation. The pressure tactics are:

§ **Time pressure.** Negotiator pretends lack of time or extends the negotiation about unimportant matter, so there is less time to negotiate about the important things.

§ **Manipulation with competencies.** It is in case of negotiation with the person who does not have competencies to make decision, and at the end different person comes into negotiation – this tactic is usually used with the aim to achieve time or favourable position related to more persons in negotiation.

§ **Numerous preponderance of people** – it disturbs the harmony and self-confidence of the other side.

§ **New information.** The negotiator provides some important information in last step of negotiation when decision should be made.

§ **Referring to competitors.** The negotiator refers to better conditions provided by a competitor although he did not negotiate with any competitor.

§ **Pretending the indifference.** The negotiator pretends he is not interested in the matter of negotiation very much with the aim to gain concession of the other side.

§ **Game with emotion.** The negotiator pretends the despair to achieve better result.

### *Tactics for cooperative negotiations*

Integrative tactics have the advantage that lies in leading to outcome good for all negotiating sides. Although it does not mean that the result is advantageous for both sides in the same measure.

Useful tactics in integrative negotiation are according to Pereira (1996, p. 38) the following ones:

§ **Unspecified reward** means that the side who gained the aimed outcome can reward the other side indirectly – the reward does not have the direct relation to “price” that the other side should pay. When using this tactic, it is important to know what the other side value the most and also to distinguish the emotional and material rewards.

§ **Adjusting priorities** – both negotiating sides make concession in points that have low priority for them but high priority for the other side. Negotiating sides should have information on priorities of other side.

## **2. Aim and methodology**

The aim of the survey was to find out which negotiation strategies and tactics are used in interpersonal negotiation by bank employees when negotiating with clients in a selected bank in East Slovakia. The survey has been carried out using the following methods:

§ From a review of literature, a specific questionnaire has been developed to collect data from bank employees. The main points of questionnaire were:

- preferred strategy of negotiation (opinions of respondents on the features of negotiation strategies used in the bank and the opinions on the importance of these features),
- negotiation tactics used within negotiation strategies (which tactics are used and how often).

§ Statistical methods to describe the information gained from the questionnaire survey.

80 employees of two selected bank branches in East Slovakia were asked to fill the questionnaire. The questionnaire has been anonymous. The sample of the survey consists of 55 respondents, what means 69 % recoverability. The sample consists of 85 % women and 15 % men. In view of the education criterion, 67 % are secondary school graduates, 7 % bachelor and 26 % university educated. The average respondent is 40 years old – 55 % of respondents are younger than 40 years and 45 % are older than 40 years. The average time of employment is 12 years. 41 % of respondents work less than 12

years in the bank, 59 % is working longer. The longest time of employment is 22 years; the shortest time is 1 year.

### 3. Results and discussion

The respondents were asked to determine the type of negotiation and the frequency of its use. 82 % of respondents are involved in interpersonal negotiation daily, 9 % of them weekly. The rest, 9 % of respondents do not use this kind of negotiation. So, the answers of these 9 % of respondents were excluded from the analysis to follow the purpose of the survey.

#### 3.1 Negotiation strategies and the features of interpersonal negotiation

The respondents were asked to determine which features are present in interpersonal negotiation with clients on the scale from 1 to 6, where 1 means not at all and 6 means maximal presence. The results are showed at the graph1.

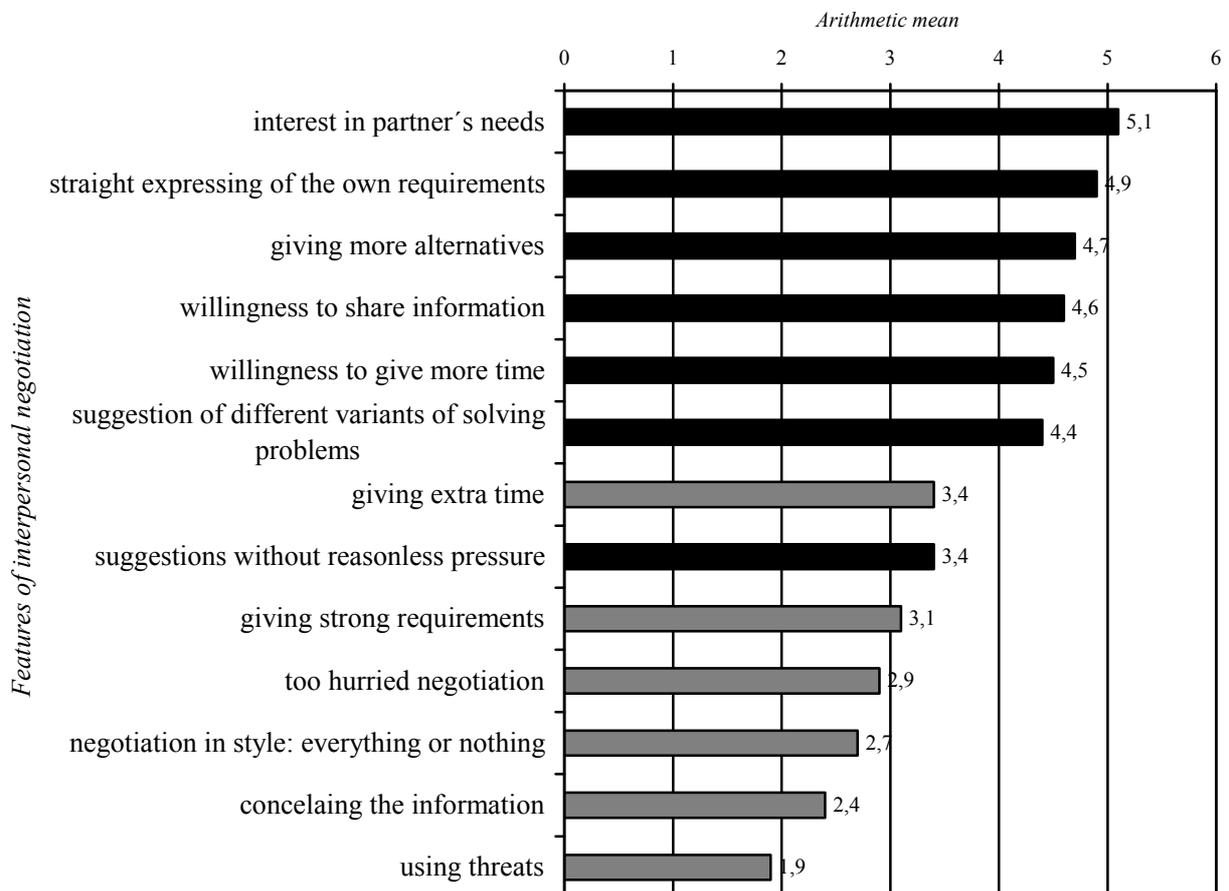


Figure 1  
**Features of interpersonal negotiations**  
 Source: own survey

Asking on partner's needs is the most present feature of negotiation (arithmetic mean 5,1); the use of threats is the least present feature of interpersonal negotiation (arithmetic mean 1,9).

The first six features are the characteristics of the cooperative strategy of negotiation. The features of the competitive strategy occurred noticeably less often. We can conclude that according to the respondents, the cooperative strategies of negotiation are preferably used by the bank employees when negotiation with clients.

We asked respondents to express their opinion on the importance of the individual features of interpersonal negotiation. They had to choose the answer on the scale from 1 to 6, where 1 means less important and 6 means the most important feature.

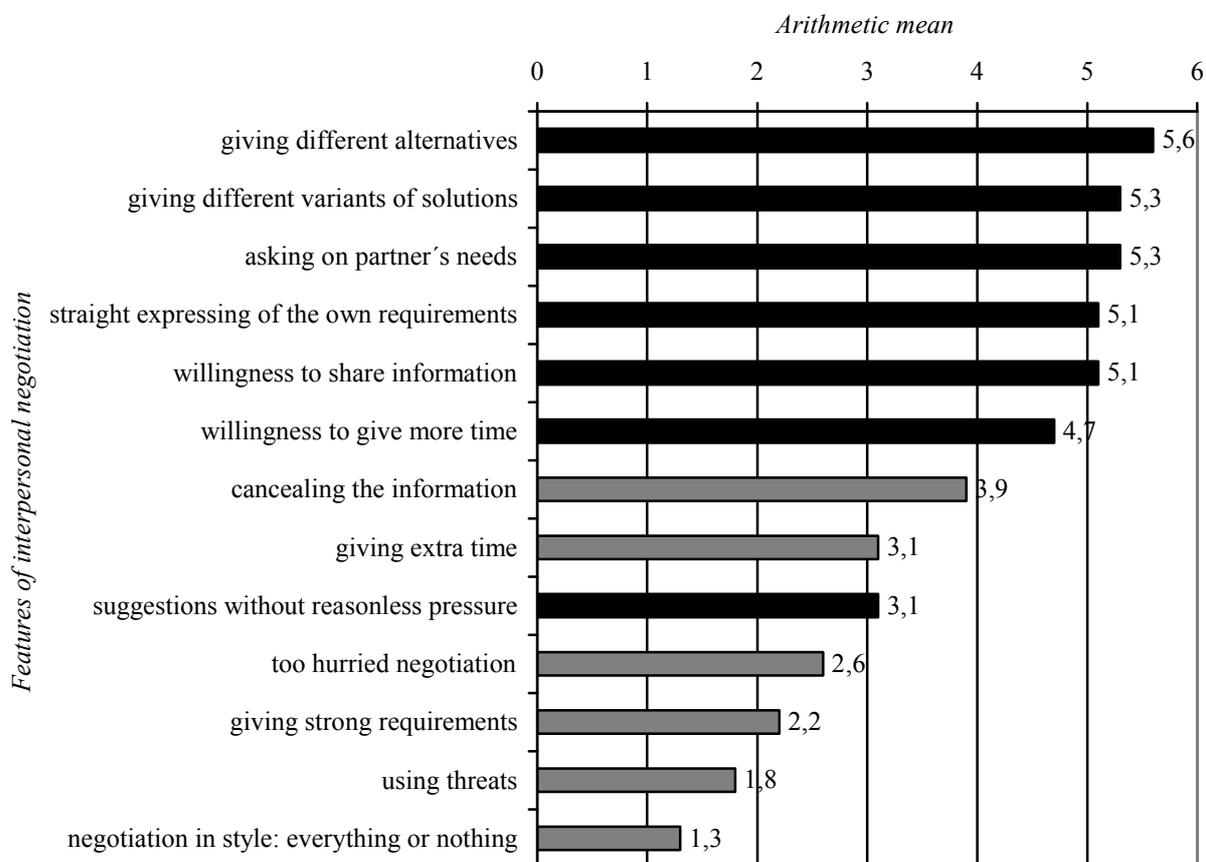


Figure 2  
**The importance of the features of interpersonal negotiation**  
 Source: own survey

The respondents valued the providing different alternatives most (arithmetic mean 5,5). They consider the negotiation in style: everything or nothing as the least important feature (arithmetic mean 1,3). The first five features with the arithmetic mean more than 5 are the features of cooperative

strategy, so we can say the respondents consider the cooperative strategy to be more important to use than the competitive strategy to achieve desired result.

### 3.2. Negotiation tactics

We tried to find out which tactics are used in interpersonal negotiation and how often they are used (graph 3).

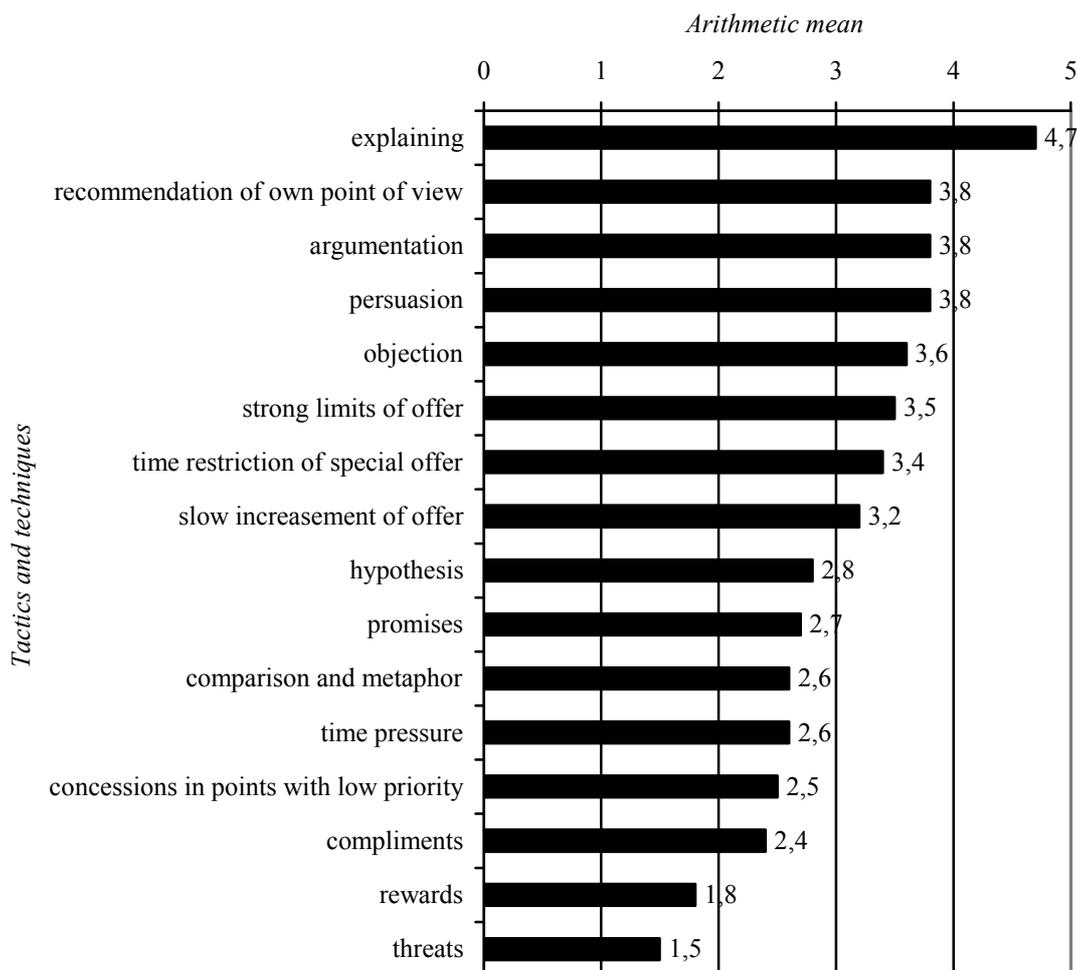


Figure 3  
**Tactics of interpersonal negotiation**  
 Source: own survey

The scale from 1 to 5 was used to express the frequency of the use of selected tactics of interpersonal negotiation (1 means not at all, 2 rarely, 3 not often, 4 almost always, 5 means always). The arithmetic mean for every category was used to present the answers of respondents. Explaining was the most used tactic (mean 4,8 expresses this tactic is used always). The mean of using other tactics were from 1,7 to 3,8. The tactics of using threats and rewards were the rarely used tactics in interpersonal negotiation.

When comparing the cooperative and the competitive tactics separately, we can see that within the cooperative tactics, the explaining is the most used tactic. Then, the tactic of fixed limits of offers and giving the discount and offer of benefits are used. The concession in points with low priority is rarely used and the rewards are used minimally.

The most used competitive tactics are persuasion, argumentation, recommendation of own point of view and making an objection. Time restriction of bargain is also relatively often used tactic. Gradual increase of an offer, hypothesis, promises, comparisons and metaphors, time pressure and adulation belong to less used competitive tactics. Using the threats is the least used tactic in interpersonal negotiation.

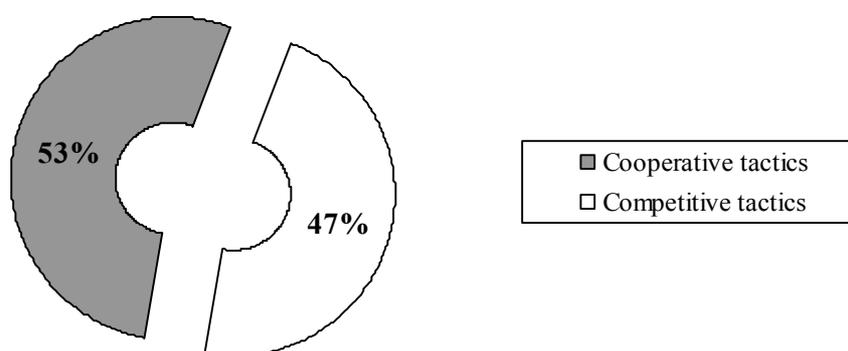


Figure 4  
**Competitive and cooperative tactics**  
Source: own survey

Cooperative tactics are slightly predominate (53 %) in interpersonal negotiation, while the competitive tactics make 47 %, so we can say the cooperative tactics are used more, but not significantly.

## Conclusion

The interpersonal negotiation was assumed to be used the most in bank industry that is why the survey was focused on this type of negotiation only. Employees of the banks assigned the importance to specific features of negotiation strategies in accord to the features of interpersonal negotiation used in the banks. It means that the employees do not feel the pressure from the bank which strategies should be used in negotiation with clients. The cooperative strategies of negotiation are preferably used by the bank employees when negotiation with clients.

There is also a possibility that respondents tried to appear on their best behaviour so they evaluated the negative features of negotiation with low marks. The most important and the most occurred were the cooperative strategies with these features: giving different alternatives, giving different variants of solutions, willingness to share information, asking on partner's needs and the straight expressing of own requirements. We think the bank employees should keep using these cooperative strategies to have good and long-term relations with their clients.

Explaining is the most used tactic of cooperative negotiation. Other, often used tactics (recommendation of the own point of view, argumentation, persuasion, objection) are competitive tactics, what is in contradiction with the preference of the use of cooperative strategy.

There is no universal approach to successful negotiation – specific attention and tactic is required in each negotiation. We cannot direct bank employees to use any strictly defined procedure of negotiation with clients. But for the bank employees it is important to know different strategies and tactics of negotiation with their pros and cons and to be able to react according to the situation and choose appropriate strategies and tactics of interpersonal negotiation.

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# OPEN INNOVATION

## OTVORENÉ INOVÁCIE

*Lenka PELEGRINOVÁ – Mária FARKAŠOVSKÁ*

### Abstract

The commercialisation of technologies and know-how generates an important part of acquiring enterprises innovation capacities. External sources of innovation activities, including new forms of companies' financing and networking in last decades, became known as open innovation. The new innovation paradigm has aroused notice by rapid increase of in- and out- technology transactions and complex novelty of business environment including its specific features as broadly distributed knowledge, or technical assets flows. Henry Chesbrough (2003a) described open innovation as combining internal and external ideas as well as internal and external paths to market to advance the development of new technologies. Thus, this paper deals with the new paradigm and its impact on improving the efficiency of technology and knowledge flows between firms in business environment.

**Keywords:** open innovation, open business model, research and development, networking

### Abstrakt

Komercializácia technológií a know-how tvorí podstatnú súčasť získavania inovačných kapacít podnikov. Externé zdroje inovačných aktivít v posledných desaťročiach, vrátane nových foriem financovania podnikov a tvorby sietí, sa stali známe ako otvorené inovácie. Tento nový inovačný vzor si získal pozornosť prudkým rastom technologických transakcií v rámci nových podmienok podnikateľského prostredia, ktoré sa vyznačuje špecifikami ako širokou distribúciou znalostí, či tokom technologických aktív. Henry Chesbrough (2003a) opísal otvorenú inováciu ako kombináciu interných a externých ideí, ako aj interných a externých kanálov k trhu pre zvýhodnenie vývoja nových technológií. Z toho dôvodu sa tento príspevok zaoberá novým inovačným vzorom a jeho dopadmi na zefektívnenie tokov technológií a znalostí medzi podnikmi.

**Kľúčové slová:** otvorená inovácia, otvorený podnikateľský model, výskum a vývoj, tvorba sietí

## Introduction

The term and the concept of open innovation were developed by Henry Chesbrough on the basis of his research on the innovation practices of US large multinational companies. This term is slowly penetrating also into the modern business language in European countries, including the Slovak R&D (research and development) and business environment.

Even though Chesbrough is known as the master brain of open innovation, his ideas were built on existing innovation theories and current business practice. From Schumpeter, through Marshall and Porter, ending in

Rothwell, not mentioning other significant contributors to innovation theories. We can find roots of open innovation paradigm in Roy Rothwell's (1992) industrial innovation and his theory of five generations (5G) of innovation. Each of these five generations describes impacts of substantial market shifts on innovation development. The generation shift forces enterprises to improve their innovation strategies to develop new position on the market or simply to maintain their competitive advantages.

Especially the last of Rothwell's generations – the system integration and networking – that set in 1990s served as a foundation for open innovation. System integration and networking were supposed to ensure the flexibility and hi-speed development. Enterprise processes were automated through business sources planning and maintaining information systems. A business ecosystem was in the centre of attention; and advantage of strategic partnerships, together with collaborative marketing and R&D activities have risen on importance. (Rothwell, R., 1992, pp. 231-236) The fifth generation of innovation had formed a framework for the open innovation concept that is directly linked to integrated business processes. We find the evidence of Chesbrough linkages to Rothwell's systemization of innovation development. Thus, we can consider open innovation as the sixth generation of innovation development as it present a reflection at latest structural economic changes at the beginning of 21. century. The previous generation could be therefore reduced to what Chesbrough marked as closed innovation that puts an emphasis on internal innovation sources instead of the networking, on immediate results as revenues instead of creating a value added, quality and non-financial revenues.

According to H. Chesbrough (2006, pp.2) open innovation is “the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively. [This paradigm] assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as they look to advance their technology.” He describes a new paradigm for the management of industrial innovation in the 21st century, in which firms work with external partners to both commercialise their internal innovations and to obtain a source of external innovations that can be commercialised. (Chesbrough, 2003a)

Open innovation is according to these definitions assigned particularly for high-tech industries as the ICT (information and communication technologies) or the pharmaceutical industry. Yet, this paradigm could be successfully applied also in lower-tech industries (automobile, chemical, heavy industry), SMEs or even in local/regional/national administrative as it indicates the creations of networks suitable for efficient acquiring and exploitation of innovation advantages.

## **1. Closed vs. Open Innovation Paradigm**

The aim of this chapter is to introduce the open innovation concept as contradiction to more traditional grasp on the closed innovation concept. A technological strategy, market as the closed innovation strategy, refers to strong constraints of interactions of enterprises with their environment. In general, industrial enterprises were usually oriented toward internal R&D, developing new technologies and applying them in their own products. The closed innovation strategy began to change in 1980s as it was no longer effective for most of enterprises to invest into internal R&D, when they could increase at least some of the acquired knowledge from external sources to complement their technology portfolio. Since this trend has continued and has gained on significance in efficient technology maintaining, many enterprises acquire now their technologies by means of in- and out-licensing or strategic alliances.

At the beginning of 21<sup>st</sup> century, the acquisition of external technology and technology exploitation represent a standard strategic move mainly of large multinational corporations. While this external technology acquisition became a substantial part of corporation inventive activities, firms across industries started to actively commercialise technology assets also. Today, high-tech corporations simultaneously carry out often more than 100 technology acquisition alliances. For instance, many pharmaceutical firms spend more than 25% of their Research and Development (R&D) budgets on services provided by other organizations, and this figure will likely increase to 40. (Lichtenhaler – Ernst, 2009, pp.38-39) Active commercialisation of technologies by licensing or selling technology is perceived as opportunity to achieve strategic and also monetary advantages. But still most European enterprises neglect these opportunities because of limitation of external technology exploitation to specific settings (e.g., licensing to enter foreign markets).

Concerning monetary opportunities, various pioneering firms, e.g., IBM and Dow Chemical have generated hundreds of millions of dollars in annual licensing revenues. (Chesbrough, 2006; Lichtenhaler – Ernst, 2009) Considering strategic benefits, enterprises may establish own technologies as industry standards or gain access to external technology. The prior research has reflected on and stimulated these trends. Numerous recent works have suggested open innovation strategies, which imply minor restrictions on interactions with a firm's environment. (Lichtenhaler – Ernst, 2009, pp.39)

### **1.1 Erosion factors of closed innovation concept**

Closed innovation model suggest that research and development activities together with marketing of new products is realised within the firm boundaries (Figure 1). However, H. Chesbrough (2006) points out several essential factors of business environment, which impose obstacles in efficient closed innovation

development (Figure 1). Usually, in closed innovation model, research and development activities and marketing of new products realises within the firm boundaries. However, latest trends suggests that raising mobility of highly educated workers within sectors and also between them have started an erosion of traditional innovation concept as workers take their knowledge with them. This simple model indicates the driving force of knowledge mobility among enterprises, even if the real impact of workers mobility isn't captured in relevant research yet.

The factor of workers mobility is supported by the factor of increased availability of venture capital that supports new perspective ideas and technologies outside of the company, for example in the form of spin-offs, business incubators, or licensing. In connection with the first erosion factor, venture capital enables outflow of qualified workers from large corporations into new business forms with a help of venture investors. Venture capital represents one of new forms of business financing as an alternative to traditional finance acquiring. The development of this new form of capital transfer from flourishing corporations into new projects or businesses could become the most significant investment source in the future of European business environment.

The third essential erosion factor is new ways and opportunities of technology exploitation that stays in companies uncommercialised for several of reasons. The idea of commercialisation of technologies lying on the shelf isn't quite new, though new is the way and channel of they transfer to the market. These technologies still remain in companies' safes because of the traditional innovation approach and it's impossible to determine their real number and potential value. Anyway, this approach can in the current market environment restraint company's growth as increasingly shorter product life cycles activate the demand after newer and improved products, while competitors could fill the gap un-shut by the company. In such a case, if company struggles with some limitations in inventive technology commercialisation, it should consider their release to market at some determined price before alternation is discovered by competitors. The deeper problem remains in evaluating these potential ideas and technologies as there is a shortage in research dedicated to unused technologies.

The last factor of closed innovation reverse is constantly improved and effective capability and capacity of external suppliers. Efficient technology and R&D outsourcing was enabled with intensified engagement of universities and R&D institutions as a partial outcome of first two erosion factors (mobility of highly educated workers and venture capital availability). The quality of external station outcomes increased in such a way that it allows to shorten time and costs for technology development in companies' laboratories. The other side of this new advantage is availability of these services, which are equally accessible to all market subjects as well as increase of pressure to disclose unused technologies in shorter time.

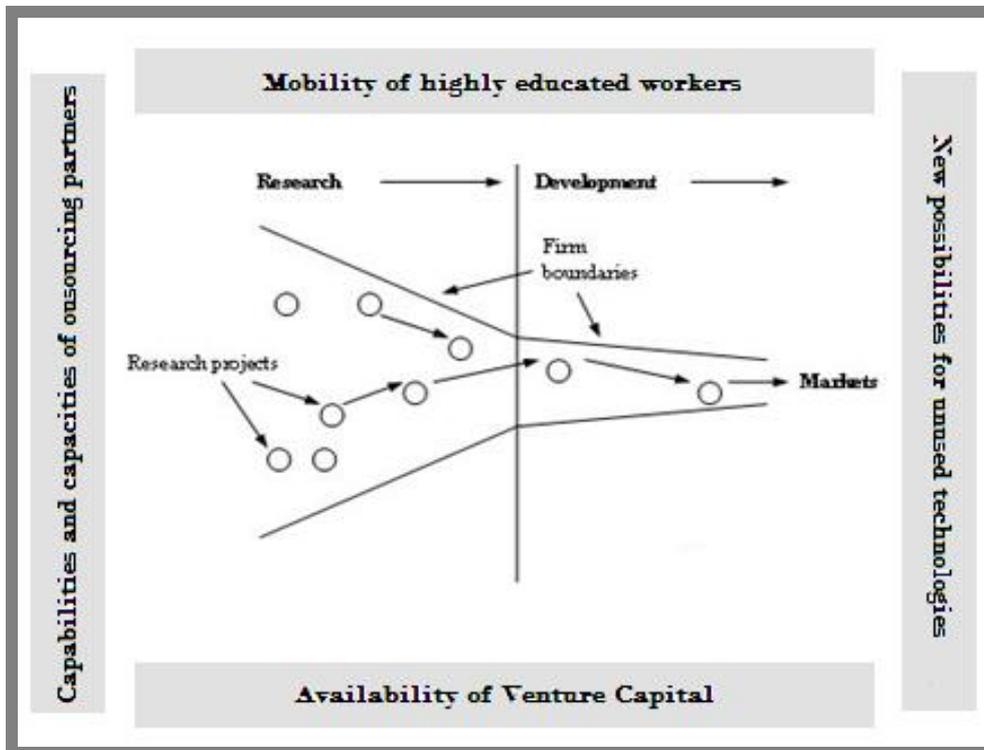


Figure 1

### Closed innovation and erosion factors of closed innovation

Source: Chesbrough, 2003a

## 1.2 Open innovation and open business model

The open innovation concept tries to overcome and even to exploit these markets trends described above. To reverse negative aspects of knowledge flows, enterprises have begun to seek different ways to improve the effectiveness of their innovation processes, for example through active search for new technologies and ideas outside of the firm, but also through cooperation with suppliers and competitors, in order to create customer value. (Available at: <http://www.openinnovation.eu/openinnovatie.php>). Another important aspect of open innovation model is the possibility of further development of ideas and technologies that do not fit the strategy of the company in the form of spin-offs, eventually their out-licensing to competitors at determined price or technology exchange. Most of the open innovation channels are illustrated in the Figure 2.

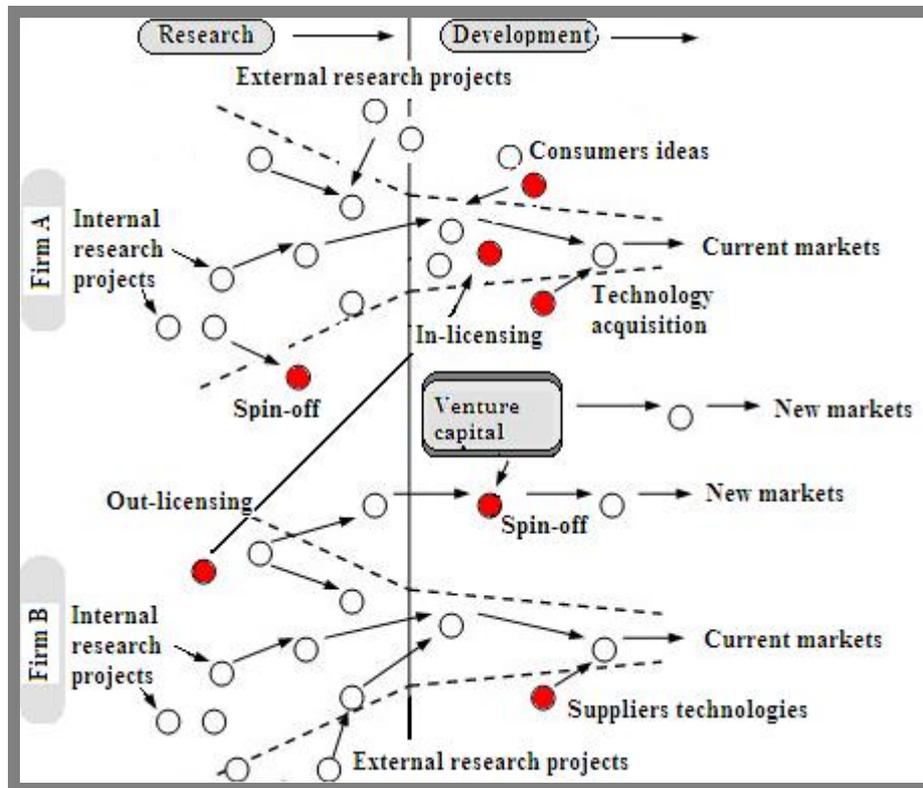


Figure 2  
**Open innovation**  
 Source: Chesbrough, 2003a

Open innovation describes innovation processes, in which organizational boundaries are porous. Enterprises strongly interact with their environment, and this leads to large extents of external technology acquisition and exploitation. (Chesbrough, 2003a). This revolutionary idea refers to general shift in thinking about business and its environment. Not only as about competitive struggle for advantages, but as about place of opportunities of finding new ways and methods for creating customer values.

H. Chesbrough (2003b, pp.5) indicated that involving other parties, not only enterprises in the sector but also suppliers, universities or end-users, could be a great opportunity for the firm in innovative market. Ideas can come into the process, for example, from internal research investigations, from external research, from licensing in another company's technology, or from an acquisition of a company's product. Similarly, ideas can flow out of the process to market in numerous ways. Many go to market through the company's own channels, while others may be licensed out, or spun out into a new venture, or into a new joint venture.

On the contrary, enterprises have to be also cautious when opening up their business models as they have to find the balance point between the open and the closed innovation model. The open business model creates not only new perspectives and competitive advantages, but leads also to higher expenditures

into innovation processes. It concerns mainly expenditures into the in-licensing, strategic alliances, the venture capital or the R&D, which may not be as productive as it is assumed. And not excluding expenditures into firm's own transformation. Open innovation can work successfully only in an environment that is efficient in organisation of firms capabilities. There are few main principles summarized in Figure 3, which should be taken into consideration in firm's decisions on open strategies.

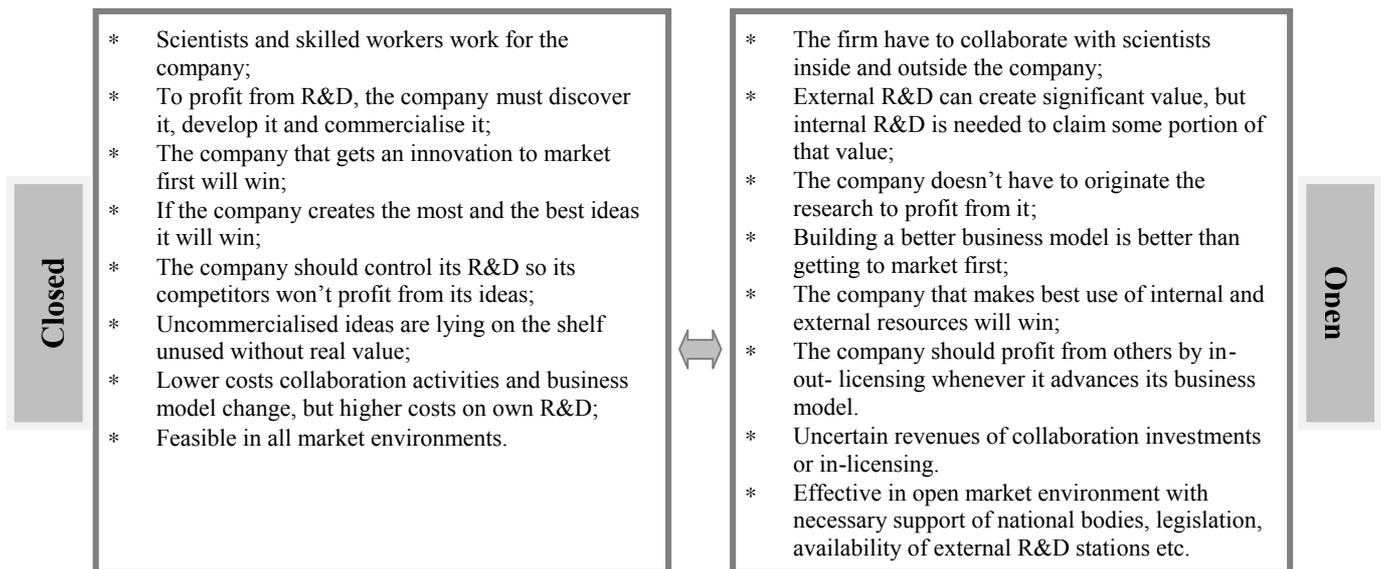


Figure 3  
**Contrasting principles of closed and open innovation**  
 Source: Author (according to Chesbrough, 2006)

## 2. Current Research on Open Innovation

In accordance with Chesbrough definition of open innovation, a researches aimed specially at business openness are still quite rare not only in conditions of European entrepreneurship, but also of US entrepreneurship. Most of the related researches are dedicated to innovation in various forms, eventually elementary fractions of open innovation as investments into R&D, networking or business processes innovation. Mancinelli, S. and Mazzanti, M. (2007) for example realized a research on complementarity relations of investments into R&D and networking with effect on business performance. Their research indirectly points out insufficient linkages between enterprises and their environment, R&D institutions, universities, suppliers or competitors in European region. Present research together with others doesn't argue against Chesbrough theory, but they neither confirm the erosion of traditional innovation concept that suggests intensification of business linkages with environment including outsourcing of highly technical services and products.

The mentioned research from Italian region is supplemented by research outcomes of Cooke, P., De Laurentis, C., Todtlinga, F. and Trippi, M. (2007) about clusters situated in Austria and Great Britain. Their effort to find out if business performance is better within clusters or outside them in different environments was aimed at innovative sectors of information and communication technologies as well as biotechnologies. Both of the sectors are leading sectors of open innovation promotion thanks to knowledge and technology concentration on specific geographic location. The transfer of innovation and technologies is far more significant and smoother in clusters or other formal and informal alliances than outside them. The concept of open innovation can thus gather more outstanding features in new context.

Authors Van de Vrande, de Jong, Vanhaverbeke and de Rochemont (2008) searched in cooperation with H. Chesbrough the original concept of open innovation in small and medium sized enterprises (SMEs), which are not exactly typical representatives of open innovation. Authors however point out a difference in enterprises adaptation to open innovation depending on their size. According to the research, larger SMEs are more flexible, the adaptation to open innovation is more professional and structured than smaller enterprises. In general, the research refers to SMEs open innovation strategies that are aimed more to accomplish market-oriented objectives than to fulfil customers requirements or to increase competitiveness. Outcomes of the research called an attention toward most considerable obstacles respondents were facing in connection with organizational and cultural differences in collaboration with partners, as well as important administrative, financing and knowledge transfer barriers.

The study of Kolk and Puman (2008) refers to the other side of open innovation development in current market conditions as dynamic capabilities of enterprises and their progress. Companies' growth is dependent on suitable management of innovation strategies openness as well as on dynamic capabilities management. Authors are seeking to find the balance between these two strategies, both inevitable for the company, which would maximize business performance. Their work is highly scientific with exact outcomes, however is less usable in business practice.

The issue of open innovation is frequently analysed in economic journal *R&D Management*, even latest issue (Volume 39, Issue 4, 2009) is dedicated to newest researches of prestigious authors on this subject. Lichtenthaler (2009), for example, part with traditional outside-in open innovation approach. Instead, he leans toward inside-out activities and their influence on business performance through analyses of 136 industrial enterprises. Results of the analyses demonstrated a positive effect of technology turbulence, number of technology transactions and intensity of technology competition on companies' performances.

Keupp and Gassman (2009) focus on reasons and ways enterprises differ themselves in accordance with the extent of open innovation activities. Authors were able to explain, on the basis of their research, external activities of analysed enterprises as results of internal innovation insufficiency. These results generated a basis for identification of four business archetypes diversified in width and depth of open innovation activities, and importance of internal barriers. We find this analysis more practically business-oriented, with possible utilisation not only in enterprises but also in national legislatures.

Open innovation from the Ebner, Leimeister and Krcmar (2009) community engineering point of view are proved on one of the leading software company SAP, which is systematically addressing its end users to create and develop innovations. The SAP concept leads to initialising of ideological competition supporting technologies within virtual communities. Fichter (2009), on the other side, uses case studies to develop the concept of promoter networks. Within this promoter theory, the quality of interactions among innovative communities is evaluated in term of the role of promoters and their networks for open innovation. These two researches show the potential of open communities for innovation generation and development, even if it shows that incremental innovation are more outstanding in these cases than radical ones.

On the work of Holmes and Smart (2009) we can observe, as a contrary to more traditional economic aspects of open innovation issue, another interesting attitude towards voluntary partnerships between corporative and non-profit organisations. Authors distinguish two generic approaches to open innovation. The research approach leads to generation of new innovative processes. The second one, focused and predetermined research activity is aimed at exploitation of non-profit partners' sources. Authors were able to respond on social need in the field and demonstrate the value of open innovation at some extent. Neyer, Bullinger and Mösslein (2009) interlock with their research of medium enterprises, innovators types they integrate and integration practices they use. The research is trying to prove, that company can fully profit from integrators knowledge only with suitable integration practice. Both researches are more preoccupied by social interactions and human capital of open innovation, that has its own value but misses economical impact on business structures.

Partially critical approach is integral of Pénin (2008) analyses of open innovation seeing that he reassessed the concept and definition of openness, and identified new requirements of access to knowledge within distributive character of innovation. Author is not opposing to positive function of openness but he insists on stricter definitions of openness requirements base on three basic features: enterprises voluntarily transfer their knowledge; this knowledge is free to all concerned without discrimination; dynamic interactions among concerned are generating to enrich open knowledge basis. We think that Pénin's approach should be taken into consideration at least at defining the degree of openness

forasmuch as the concept of open innovation by itself is yet quite rough and uncompleted in its definitions.

We can find more economical approach and implications of open innovation in work of Lichtenthaler and Ernst (2009) who are dealing with technological transactions in and out of enterprises as a mainstream of open innovation. Moreover, they analyse technological aggressiveness that represents essential dimension of business technological strategy and they identify it as a main determinant of open innovation. Authors have examined 154 industrial enterprises to verify three hypotheses related to technological aggressiveness; external technologies acquiring; and external technologies exploitation. Both authors are reputable in the field of open innovation and their study is a meaningful contribution to theoretical and practical exploitation of open innovation even though only in high-tech sectors.

Wincent, Anokhin and Boter (2009) are also trying to examine open innovation effectiveness in SMEs. They handle open innovation as alternative way to innovation organization that can be effective also in small enterprises networks within the management of research and development activities. Five year research in 53 strategic small enterprises networks has shown the way these activities should be organized to improve innovative position of network partners. Authors stress out a set of tools for effective organization as well as the effect of continuity on innovative performance of businesses.

Increasing importance of open innovation in global perspective is a part of analysis of de Backer, Lopéz-Bassols and Martinez (2008) who dedicated their research on internationally comparable data on open innovation. They have used existing data on R&D investments, innovation survey data, patent and licence data to demonstrate increasing importance of open innovation and at the same time the differences in open innovation features between enterprises, sectors and countries. The described research keeps up with few years older research of Gassman and Enkel (2004) that discovered through an analyses of 124 companies that open innovation is more typical in high product modularity and high speed sectors where explicit knowledge and complex interconnections are required to positive externalities generation. The progress of open innovation outside-in is more important in lower-tech industries with highly modular products where competitive advantage is based on know-how. Opposite process inside-out is more significant in enterprises and industries based on R&D.

Researches mentioned above as a lot of others dedicated to the issue of open innovation, open source software, innovation, clusters and networking are substantial sources of empirical findings for enterprises, which are trying to find the most appropriate strategy between the closed and open innovation.

## Discussion

Small and medium sized enterprises are currently in the centre of diligence of economic development of most countries and entire European Union as they represent a majority of the number of enterprises and they also employ most employees in all western economics. This category of enterprises represents the most effective, flexible and the most important part of these economics and thus, they should be the driving force of innovation activities. The practice of their share on innovation outputs is nevertheless pitifully low. EU reflects the need to support participation of SMEs within European innovation development in its framework programmes and various initiatives assigned for SMEs. Open innovation could become an efficient tool to improve shortages of SMEs through creating an environment suitable for networking in formal or informal ways. Accordingly, a steady legislative framework for clustering, venture capital and other necessary complements of open innovation would be the suitable step forward innovation development in Slovakia.

The main problem of open innovation concept lies still in different adaptation of this concept between manufacturing and services firms, and between larger corporations and smaller SMEs. Larger enterprises have more dynamic capacities to smoother and quicker adaptation to open innovation than smaller ones. But there are also other significant barriers standing behind the concept. SMEs often struggle with organizational and cultural differences in the networks, as well as with administrative burdens, financing and knowledge transfer problems. But at first, enterprises need to become aware of the increasing importance of open innovation because its concept isn't completely established outside of USA yet.

Slovak enterprises are also often too conservative and too concerned to develop perspective ideas outside own boundaries. Even though in-licensing became relatively standard practice, mainly in collaboration with R&D centres or within strategic alliances, most of the companies refuse to transmit technologies and knowledge that lies on the shelf uncommercialised. This strategy is though counterproductive when enterprises loose their potential profit from out-licensing. So the continual problem of open innovation is to reveal the real impact and effectiveness of open business model. This can't be done in a simple model, as each in- and out-licensing may have different value for seller and for purchaser, including impact of externalities as market environment.

The issue of effectiveness can be perceived for example from the point of the percentage of sales spent on R&D. (Lichtenhaler – Ernst, 2009, pp.39-40) But this view often captures only the spending on internal R&D, neglecting investments of other parties (suppliers, customers, third parties). Another possible way of finding out the efficiency of opening up innovation processes may be the number of patents generated from internal R&D. It is better to discover how many patented technologies are used in one's products, as well as

in other companies' products. (Lichtenhaler – Ernst, 2009, pp.39-40) We see a perspective also in finding out a suitable method, as putting more attention to actual transformation of inputs into outputs, or simply emphasize the input side of knowledge creation. We can go even further by analysing factors of closed innovation erosion and find a relationship of complementarities among them in connection with enterprises performance.

## **Conclusion**

According to H. Chesbrough (2003b), open innovation refers to systematically relying on a firm's dynamic capabilities of internally and externally carrying out the major technology management tasks along the innovation process, i.e., technology exploration and exploitation. Open innovation processes therefore involve a variety of internal and external technology sources and a variety of internal and external technology commercialisation channels. In this context we consider open innovation an essential part of contemporary innovation activities of most industrial sectors. We can see the potential implications of open innovations and open strategies in wider scale, from high-tech to lower-tech industries, universities and R&D institutions, from profit to non-profit organisations, from private to public sector in all European countries, including Slovak republic.

Nevertheless, there are still wide gaps in open innovation and open business model researches that would explain the whole open up process, its full implications and that would help also SMEs to find the appropriate open methods. The crucial feature of opening up innovation process remains concrete business model and business strategy. These two elements are essential at identifying forms and possibilities of external knowledge and internal technologies combination for the purpose of creating an innovation value.

Open innovations have different impacts and implications depending not only on business model but also on external environment of the firm and other internal features. There are significant differences in open innovation development and purposes between various business forms, depending on their size, national conditions, relation to profit, R&D and various other aspects. Small and medium businesses are often discriminated not only because of relatively high investments into opening up, but also because a higher risk they bear or a lower impact on strategic partners. Many firms are despite opening up unable to really commercialise all of innovation gained through different open strategies. The value of these innovations represents not only lost on opportunity benefits but risk of direct costs.

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# DIVERSITY AS A BUSINESS CASE OF CORPORATE SOCIAL RESPONSIBILITY

## RÔZNORODOSŤ AKO ČASŤ SOCIÁLNEJ ZODPOVEDNOSTI FIRMY

*Ana SPERANCIN*

### **Abstract**

Corporate Social Responsibility (CSR) is still a young discipline in the business agenda. Its main goal is to ensure that companies adhere to law and ethical standards in order to include public interest into corporate decision-making. Companies are not just accountable for financial performance as in the past but also for social impacts they cause in the community where they operate. It is not yet a mainstream approach taken for granted for all businesses because some doubts and questions still remain about how to balance the profit, as the main interest of a corporation, with the new task of articulating social demands. More than attending the shareholders' pressure, managers gained the social responsibility of their actions, and so, need also to respond and report to other not less important stakeholders: community, government, employees and others. Actually, the "s" in CSR calls the company's attention to look after all their stakeholders. More challenges require managers to act as multiple actors in all atmospheres and fields. It is like a 3-dimension scenario with pressures from all sides and stakeholders which make them heroes to deal with all of the forces and demands of their environment. Regarding the stakeholder management theory, this article is about the workforce. It focuses on getting to know the emergency of the theme diversity as a business case of CSR approach in the last thirty years, which has gained more importance and strategic point of view from many managers.

**Keywords:** corporate philanthropy, social contract, stakeholders, diversity, discrimination

### **Abstrakt**

Corporate Social Responsibility (CSR) je ešte mladá disciplína v obchodnom rokovaní. Jej hlavným cieľom je zabezpečiť, aby podniky dodržiavali právne a etické normy tak, aby zahŕňali verejný záujem do firemných rozhodnutí. Spoločnosti nie sú zodpovedné len za finančnú výkonnosť rovnako ako boli v minulosti, ale aj za sociálne dôsledky, ktoré spôsobujú v komunite, kde pôsobia. Zatiaľ nie je bežné brať za samozrejмый prístup pre všetky podniky, pretože niektoré pochybnosti a otázky sú stále o rozdeľovaní zisku, ako hlavný záujem spoločnosti, aj s novou úlohou, zahrnúť sociálne požiadavky. Viac ako tlak akcionárov, aj manažéri získali sociálnu zodpovednosť a tak je tiež potrebné reagovať a vykazovať správy iným, nemenej dôležitým subjektom: obciam, štátnej správe, zamestnancom a ďalším. V skutočnosti, "s" v CSR znamená pre spoločnosť starať sa o všetkých jej účastníkov. Ďalšie problémy vyžadujú, aby manažéri pôsobili viac ako aktéri vo všetkých oblastiach a v prostredí. Je to ako 3-rozmerný variant s tlakom zo všetkých strán a hlavne zainteresovaných strán, ktoré sa musia vysporiadať so všetkými požiadavkami ich prostredia. Čo sa týka zúčastnených strán teórie riadenia, tento článok je o pracovnej sile. Je zameraný na poznávanie núdzových tém rozmanitosti, ako prístupu CSR v posledných tridsiatich rokoch, ktoré získalo väčší význam aj zo strategického hľadiska mnohých manažérov.

**Kľúčové slová:** firemná filantropia, spoločenská zmluva, subjekty, rozmanitosť a diskriminácia

## **Introduction**

Corporate social responsibility (CSR) is a current topic in the business agenda and has been well debated and gained more emphasis in the past few years as an important issue to take into account when making any strategic decision. The greatest attention for this topic started as a result of the pressure of the media which exploded worldwide the major management disasters and scandals in recent years, concerning mainly the violation of human rights and damage in the environment, harming their customers and society in general. Although CSR emerged to better control the company's reputation in the market in order to avoid such bad exposure in the media, this topic, even being still a new concept has been discussed since the 1950s.

From that time on, different meanings and ways of conducting CSR can be verified in different organizations. It became a multidisciplinary study with a great plurality of approaches by academics, businessmen and public representatives considering inputs from sociology, psychology, biology, economics and business point of views. Thus, different corporate social practices occur due to the need of the company to contextualize its operations in the relevant social environment, with their specific social need, culture, characteristics, laws and governmental regulation.

However, no matter the approach done by corporations, or the name that labels these activities such as Corporate Social Responsibility, Sustainability, Business Ethics, Corporate Citizen and others, the essence of CSR is having the consciousness that business activities have a wider impact on the society. And because of this, companies need to respond to social needs and so enhance social well-being of those whose lives are affected by the company's economic operations (Frederick, 2008, p.522). Indeed, it is a voluntary action that goes beyond the law and the concept of philanthropy with the aim to align social and economic responsibilities by managing the externalities that their operations caused in respect to the needs and interests of their multiple stakeholders. It is expected that a company enjoys mutually beneficial relations with its host communities, obeys laws and public policies, balances stakeholder claims and conducts business with integrity to be considered socially responsible.

### **1. Definition of CSR**

There are lots of definitions for CSR according to different contexts and point of views. Some of them can be described as the following:

*“The voluntary action that business can take over and above compliance with minimum legal requirements address its own competitive interests and interest of wider society.”(UK government)*

*“A concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis.”(European Commission)*

*“The continuing commitment by the business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their family as well as of the local community and society at large.” (World Business Council for Sustainable Development)*

The definition of CSR can vary a lot from simple managing the stakeholders' interests to often assume charitable efforts and volunteering for social causes. As a consequence, CSR has different formats and priorities in different countries, for instance. The context, as mentioned before, interferes a lot and somehow models the social practices. In developed countries where the government has an acting role in providing social welfare, it is requested more corporate social actions that go beyond the minimum that the law asks for, to contribute in other social terms for the society. This level of maturity and commitment is different in developing and poor countries as well as The United States where the government doesn't play enough role in dealing with all social needs and /or have less political and economic influence than many companies. These conditions generate an increased expectation to address social awareness to private corporations (Frederick, 2008, p.524).

Many approaches proliferated in this field arguing the main reasons why companies, as being private institutions, have also to be involved in public issues. According to Garriga (2004), ones say that its social activities are only a mean to achieve economic results; others concern their responsible use of power in the political arena; some agrees that corporation also focus by nature on the satisfaction of social demands; while others rely on ethical responsibilities that corporations owe to the society.

As described by Carroll (1991), “CSR includes the idea that the corporation has not only economic and legal obligations, but ethical and discretionary (philanthropic) responsibilities as well. Their principal role is to produce goods and services that consumers need and want complying with the laws and regulations and doing business in an ethical way to avoid or minimize harm to stakeholders acting at the end as a good corporate citizen with contributions to improve the quality of life of the society.”

## **1.1 Arguments against CSR**

Some writers as Friedman (1970) for instance, consider the social term as a not efficient corporate issue once the main goal of the business is to make profit and not promote social ends. Moreover, the financial control systems can't either evaluate the social responsiveness nor the process for evaluating and rewarding managers is designed to recognize performance in areas of social concern. In fact, managers don't have legitimacy and preparation to be a social agent as they are not elected by the society, but just by some shareholders. Furthermore, there is also lack of trust in organizations due to some illegal behaviors we face every time such as antitrust, violations, kickbacks, illegal rebates, illegal political contributions, fraud, tax evasion and others.

## **1.2 Arguments pro CSR**

Despite those arguments against the CSR, much more evidences are in favor of this concept bringing certain level of benefits to the organization that at the end results in a better performance of the company and consequently higher profits and dividends for the shareholders. Muchlinski (2003) agrees that CSR is good for the business as well as that human rights must be protected in every circumstance. Mintzberg (1983) on the other hand, described that CSR was first known as "noblesse oblige" which means that someone with power and influence should use their social position to help other people and later in some cases it was seen as a smokescreen, hiding the truth about something in order to divert attention from the shareholder control. He argues that the market is willing to reward socially responsible with an increase in the value of the company's equity, but only to a certain point. At the end concludes that treating the employees and community well enable companies to make more money.

All together, broadening relationships between corporation and their multiple stakeholders is also a marketing game to improve their image and reputation in the market. Consequently, it becomes a good competitive advantage for business by using their social contributions to provide a subconscious level of advertising.

As Thomas Hobbes argued in the Social Contract Theory, due to the impact companies caused in the environment, they should be accountable to a wider audience than just the shareholders. This social contract determines the conditions required for the society to business operates where the benefits should outweigh the detriments for the society.

### 1.3 Legal framework regarding CSR

Between the 1960s and 1980s, most of the predominant regulations and laws that embedded the main CSR practices were institutionalized in many countries. This new legal framework had the purpose of enforcing ethically and socially responsible organizations' behaviors.

In The United States, for example, important regulatory agencies were founded to create greater disclosure and transparency of the corporate actions: Occupational Safety and Health Administration, Equal Opportunity Commission, Consumer Product Safety Commission and the Environmental Protection Agency.

Internationally speaking, some organizations advocated a broader notion of corporate responsibility creating codes and guidelines for the companies to compromise to social causes and exercise goodwill in the society where they operate. Nevertheless, they are just soft laws, that is, don't apply any coercion if not respected. Some of these initiatives are the Draft UN Code, OECD guidelines and UN Global Compact which are briefly described below:

*“The Draft UN code expresses these concerns: The Draft UN code of conduct for transnational corporations contained obligations ranging from respect for the sovereignty and political system of the host state, respect for human rights, abstention from corrupt practices. Full disclosure or observance of tax and competition laws, to obligations on TNGs not to abuse their economic power in a manager damaging to the economic wellbeing for the countries in which they operate.” (UNCTAD)*

*“Duties to contribute to sustainable development of the countries in which they operate, to respect human rights, to encourage local capacity-building and to refrain from seeking or accepting exemptions to local regulatory frameworks in the areas of environment, health and safety, labor taxation, financial incentives or other issues.” (OECD guidelines)*

*“Respect of human rights as defined in the Universal Declaration of Human Rights, the International Labor Organization (ILO)'s Declaration on Fundamental principles and rights at work which requires respect for freedom of association, recognition of collective bargaining, elimination of all forms of forced and compulsory labor, the effective abolition of child labor and elimination of discrimination in respect of employment and occupation, the Rio Declaration of the UN Conference on Environment and Development.” (UN Global Compact)*

## 1.4 History of CSR and emergence of the diversity concern

The history of CSR can be explained in four chronological phases since this topic appears in the business agenda. Not all companies pass through all of them but some of them who detain well developed actions in this area manifest all of these phases simultaneously (Frederick, 2008, p.525).

<b>Characteristics</b>	<b>Corporate Social Stewardship</b>	<b>Corporate Social Responsiveness</b>	<b>Corporate / Business Ethics</b>	<b>Corporate Global Citizenship</b>
<b>Period</b>	1950s - 1960s	1960s – 1970s	1980s – 1990s	1990s – 2000s
<b>Guiding CSR Principle</b>	Corporate managers are public trustees and social stewards	Corporations should respond to legitimate social demands	Create and maintain an ethical corporate culture	Accept responsibility of corporate global impacts
<b>Main CSR Action</b>	Corporate philanthropy	Interact with stakeholders and comply with public policies	Treat all stakeholders with respect and dignity	Adopt and implement global sustainability programs
<b>CSR Drivers</b>	Executive conscience and company reputation	Stakeholder pressures and government regulations	Human rights and religion-ethnic values	Globalization disruptions of economy and environment
<b>CSR Policy Instruments</b>	Philanthropy and public relations	Stakeholder negotiation and regulatory compliance	Mission statements, ethic codes and social contracts	International code compliance and sustainability policy

Table 1

### **CRS Phases**

Source: The Oxford Handbook of Corporate Social Responsibility (p. 525)

According to Moran (2000): *“the world economy today is undergoing its deepest restructuring since the Industrial Revolution. A fundamentally new system for creating wealth is emerging. It is not based on “First Wave” agrarian toil in the fields ... nor on muscle work in “Second Wave” factories. The revolution is based instead on “Third Wave” knowledge-work that*

*substitutes ideas and information for the transitional economic inputs of land, labor, capital and energy.*” Creating wealth by corporations’ side is much more related to the impact of their decisions rather solely the products and services they offer to the society. Being socially responsible is the order and strategy nowadays to better allocate resources.

Diversity as a corporate issue emerged in the 1960s alongside with the second period of CSR approach. When companies started structurally responding to social demands, racial and sexual discrimination in the workplace, for instance, were illegal practices very noticeable in the society. That’s why new regulations about human rights we created to become obligatory doctrines in the business life. At this time, companies moved their behavior from passive responsibility to active social response.

The corporate culture also changed their normative principles to adapt to the new regulations and concerns about being ethically correct and in favor of the non-discriminatory attitudes. These principles, which guide the company’s policies, strategies and decisions, strive the organization to create an ethical climate based on rights, fairness and justice with all employees, society and stakeholders in general.

The laws that we have concerning CRS topics can establish obligations for enterprises but they aren’t the end of the process neither enough to guarantee success and good practices. Therefore, laws are important to set some standards requesting the minimum commitment to social causes, but are inefficient as change agents. Moreover, when there are recommendations or codes, in practice, the adoption has remained in a poor level and didn’t make so much progress (Ross, 1992). Actually, the law just starts the process, but there are many other reasons for embracing diversity in the workplace.

The aim of the legislation about diversity is to eliminate unfair discrimination, which means abolishing stereotypes assumptions that become later prejudice against a certain group in order to avoid what is called “social dumping”.

The ILO (International Labor Organization) convention n.111 for instance, defines discriminations as including any distinction, exclusion or preference based on some characteristics of the individual based on some individual characteristics which has the effect of nullifying or impairing equality of opportunity or treatment. There is also the concept of “indirect discrimination” which involves conditions or requirements that effectively exclude certain groups with any reasonable justification, as in a job advertisement for example.

In the United States, there are government initiatives that enforce companies to give priority to this theme of diversity. The Equal Opportunity Employment has the aim to ensure that everyone should have the same access to opportunities while the Affirmative Action is related to action plans to increase the participation of minorities and women in the workplace. Both concepts focus

on employment activities. However more attention is needed to guarantee acceptance of differences and individual attitudes to behave in favor of the diversity bringing up the inclusion in the workplace in order to maximize the potential of all individuals.

## **2. Diversity as a business case of CSR**

CSR as a meaning of corporations being accountable of their impacts in the society has great to do in the respectful of human rights. This concern calls the management of diversity in the workplace to be conducted in an ethical way as well as according to the laws. If companies consider and conduct both approaches – CSR and diversity – in a strategic way, we can consider managing diversity in the workplace as part of the CSR initiatives once their principles match: treating employees fairly and without any discrimination in order to build a bigger reputation for the organization. However, some managers prefer to lead with diversity separately from the CSR activities, once diversity is not a “nice to have” initiative comparing to the CSR. But this argument is just valid when CSR activities are not more than volunteer actions with the philanthropy goals which characteristics fits in the first phase of the history of CSR, as showed in the table above. Once the activities of corporate social responsibility turns to a strategic tool for the organization, the issue of diversity management at work turns as well to the area that concerns the employees as part of the stakeholder management. Managing diversity is based on the principle of equality, which is assured in the Declaration of Human Rights. The maturity level and strategic weight differs from each organization, but the basis and principles embrace the diversity issue as a social commitment of the corporations to the society in general.

Most of the companies report in their social statements, results regarding diversity as a program of CSR. Some examples can be checked in their homepages such as: Starbucks, Cisco, Sony Ericsson, IBM, Coca-Cola, Kellogg's, McDonald's, At&T among others.

Another example is the first European Survey of Consumers' attitudes towards Corporate Social Responsibility conducted by the CSR Europe – the leading European business network for corporate social responsibility. This survey shows that consumers care most about how companies are looking after their employees and protecting the health and safety of workers which are elements of the whole diversity management approach.

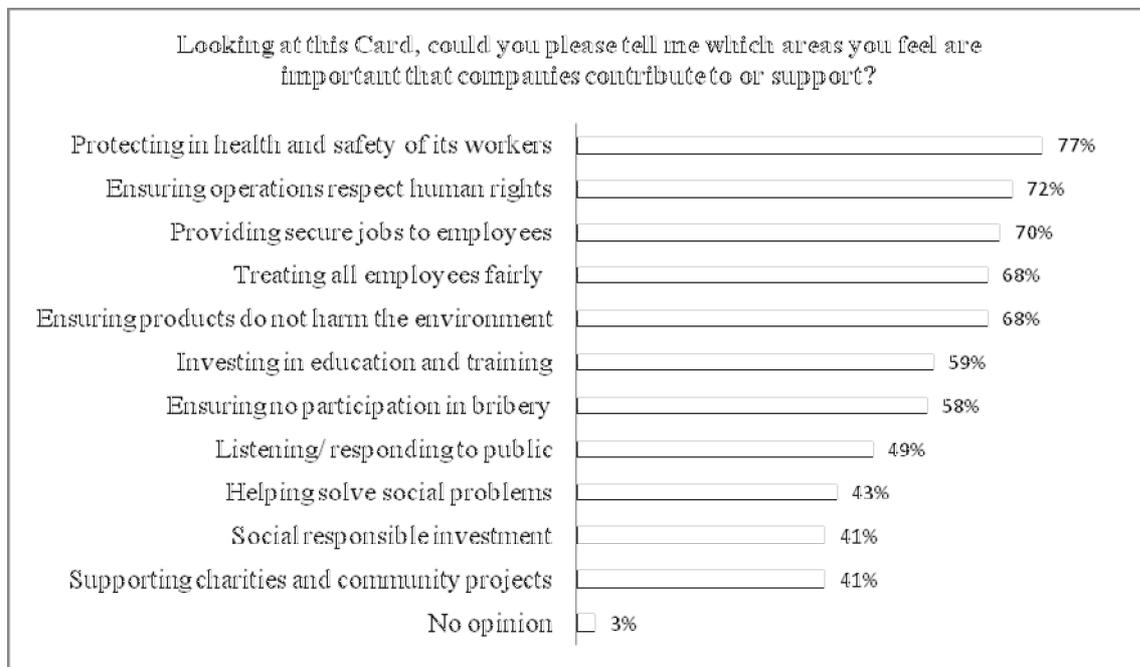


Figure 1  
**Consumer’s preferences regarding CSR activities**  
 Source: All “European” public (12,162). September 2000.

Managing diversity is, thus, a social business responsibility to ensure not only good conditions and opportunities for their workforce but also to reflect in their framework the contemporary society where the company operates.

It is a part of the whole concept of CSR that companies need to take care of all their stakeholders. And diversity is a new business topic in the CSR umbrella that concerns mainly with the employees as a reflection of their society. Therefore, worries about working conditions, human rights, equality of opportunity, health and safety, work-life balance, anti-harassment, trainings, participation in decision-making process are important aspects in business environment and subjected of reputation in the society. It came on to the business agenda due to the globalization, increasing population movements and demographics changes. Managing diversity requires a workplace environment free from discrimination, hostility and harassment with respect to the differences. It means not only non-discrimination and equal opportunities but also efforts to foster inclusion among the employees. It is about understanding the differences and moving beyond simple tolerance to embracing and celebrating the rich dimensions of diversity contained within each individual.

There are many ways that an individual can manifest differences comparing to the other. Dimensions of diversity include, but are not limited to: gender, age, sexual orientation, race, ethnic heritage, mental and physical abilities, geographic location, military experience, work experience, income, religious beliefs, first language, organizational role and level, communication style, family and work status, education background, marital and parental status.

But of course, each human being is unique and our basic differences stem from our perceptions of one another, influenced by our cultural backgrounds.

The CRS benefits, as described before, are very similar to the diversity ones and can be summarized in the following gains for the companies which have good practices in diversity management: better utilization of talent, improved employee satisfaction, enhanced creativity and innovation, better decision-making process, improved corporate reputation and attraction of talent, which gives a better preparation for meeting varied stakeholder needs. In order to congratulate social initiatives regarding diversity management, there are innumerable benchmarking and awards sponsored by businesses and governments to share best practices and stimulate more and more companies to keep their good path in managing diversity as well as increase the number of enterprises adhering to this cause. Moreover, there are also some regulations behind this topic.

Globalization has been transforming the worldwide workforce from homogeneous to heterogeneous groups. To deal with such differences in a workforce group, in order to avoid conflicts and counteract racism and prejudice, companies are more aware of their responsibility to find out mechanisms to promote more interaction and less discrimination among the employees. This phenomenon of growing diversity in the work environment makes employees as one of the stakeholders, one of the most complex groups to deal with. It became a great challenge for managers to not only be customer-oriented as it is a cliché in business, neither focusing on the shareholders interests nor just respecting the laws and having a good relationship with suppliers and society in general, but in-house, the attention to their workforce has demanding more and more diligence to look after them.

The changing in the workforce demographics has been a result of many different movements such as the globalization itself that has been leading to the increase in the legal and illegal immigration, social integration in the European Union for instance, mergers and acquisitions among different companies in different contexts, skill shortages and difficulties in filling vacancies. The increasing demand for skilled and qualified labor is forcing somehow companies to also search talents in the minorities groups (Ross, 1992).

Women, in special, are becoming a great source for employment. Due to the increase in single parent families and divorces, they need to provide money at home. There are also more women in higher education which shows their willingness to work and so to become more competitive in the labor market. Moreover, the values are changing gradually once the majority of women want to give priorities to both careers as professional ones and good mothers that differs a lot same years ago, when they were satisfied just dedicating their time for motherhood.

All in all, attitudes in general regarding working are changing. Workers want challenges in their career but also more time for their home life. Private

and public lives are getting different priorities than before. All of these changes in society influence companies' practices to hire and retain talents. The likelihood to have a better attractiveness for being a desirable place to work for depends on the companies' understanding about these changes in order to match both business and private interests offering good working conditions and up-to-date human resources policies.

## **2.1 Diversity management**

Generally speaking, we could say that in the internal environment managers are facing challenging in dealing with diversity in their workforce as well as in the external level attempting to respond to the interests of the diversity regarding the whole stakeholders. According to Maclagan (1999), one way to get more support for doing this is increasing the empowerment, and so, the worker participation as the diversified labor may actually be representative at least of the society. In this way, not only dealing with discrimination, managers would provide more inclusion and opportunities for employees to give their maximum potential as individuals, no matter their differences, to contribute to a better social cause. It would improve the satisfaction and motivations and better interaction among workers. When power is shared, employees are able to devote tremendous energy in the work. Diversity training is another important tool companies must acquire in their developing process. Discussing about the differences within a legal and social framework is very relevant for managing the changing behavior expected for the employees to better accept differences in the workplace as well as raising their awareness of this topic.

Diversity programs and initiatives, indeed, impact positively on the organization productivity. Numerous studies have been taken place to search about the benefits diversity policies bring to the organization. More efforts should be done to attempt quantifying the results, however, even with not so clear tools and concepts in how to justify and monitor financial returns through these initiatives, it is well known and not more contestable that they for sure are very beneficial and contributes somehow to increase productivity, efficiency, leading to a positive impact on the business. Therefore, companies are nowadays trying to adapt their procedures regarding recruitment, training, internal and external communication and performance evaluation, as just some examples, considering diversity related matters. Promoting integration, creating policies regarding anti-bullying and offering a good concept for work-life balance are some relevant goals in the diversity topic that companies must work with to maintain their performance and long term success.

## **Conclusion**

Diversity is an internal CSR accountability around employees and a powerful tool for helping the advancement of minorities in the workplace. Although this topic has been debated strongly, there are still some companies just facing diversity as a legal and moral concern. Active diversity policies can ascribe to enhance corporate reputation, attracting and retaining talented employees and improve creativity, motivation and productivity inside the organization besides other benefits.

It is just part of the whole social responsible activities companies are supposed to deal with as CSR is much a wider concept that means engagement with all the stakeholders, change management, sustainability and fulfilling promises and expectations according to the social contract.

There is legal and ethical framework approaching this topic, but it is more than acting as volunteer and attending the minimum requests, it is a way of survive and gain competitive advantage.

## **Summary**

Diversity in its essence is just a modern concept that emphasizes people are different from one another. All the individual external characteristics and intrinsic ones are subjected of discrimination. Since the whole humanity history, we had prejudices and rejections of some minorities groups that led to conflicts, combats and even wars. The prejudice is inherent in the human life. Even with first human rights declaration and some attempts to increase the consciousness of the society that people are different in many aspects, we still are facing problems regarding the non-acceptance of some groups.

It is actually a social concern and the responsibility of the government to ensure the non discrimination at all. Rules and laws were created to guarantee the respect of human rights and then it turns out that diversity becomes also a business issue. As the big role companies play in the society, they must act in accordance to the laws and so be also accountable for discriminatory activities.

Nevertheless, companies have much more to do for the society. Diversity is just a theme inside the concept of Corporate Social Responsibility (CRS) which is part of the psychological contract between the company and the community in which it operates. And diversity in the business context means employing people who are representative of the local community as well as treating and offering equal opportunities for all the employees based solely in the meritocracy regardless of any other characteristic.

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# PREREQUISITES FOR THE BALANCED ECONOMIC DEVELOPMENT OF COMMUNES PODKARPACKI PROVINCE

## PREDPOKLADY PRE VYVÁŽENÝ EKONOMICKÝ ROZVOJ OBCÍ PODKARPATSKÉHO KRAJA

*Marek SMOLEŇ – Lidia KALISZCZAK*

### **Abstract**

An assessment of the prerequisites for the economic development of communes in Podkarpacki Province with respect to relying on their own resources for local development was undertaken.

**Keywords:** prerequisites, development, Podkarpacki Province

### **Abstrakt**

Príspevok hodnotí predpoklady pre ekonomický rozvoj obcí Podkarpatského kraja s rešpektom spoliehania sa na ich vlastné zdroje na lokálny rozvoj.

**Kľúčové slová:** predpoklady, rozvoj, Podkarpatský kraj

### **Introduction**

Economic development is a process of such social and economic transformation of a country or region that leads to the creation of a society which seeks ways of improving their economic situation in such a way that enhances or encourages its citizens to invest in material, human as well as intellectual resources being indispensable for a continued capital accumulation.

The outcome of the political transformation is the formulation of some macro-economic premises for rural development.

- A dynamic economic growth – it is a known truth that rural development takes place when the GDP grows. In situations of economic recession however, the rural are acts as buffer by absorbing poverty and unemployment of urban areas,
- Restructuring the various sectors of the economy – through the expansion of the service sector, which creates avenues for rural economic growth including rural co-operatives. These are however, potential opportunities which can be transformed into real regional economic growth through rational economic practices (Hunek T. 1997).

It is a generally accepted fact, that both growth and development do not run at par under market economies. They are usually characterised by changes,

which are manifested in growths and decreases following each other in a cyclic manner. The efficiency of use of factors of production changes. Their utilisation increases during periods of boom, which is driven by them (Szlachta J., 1994).

## **2. Aims of the Research**

The main aim of economic development is to ensure the citizens the highest level of living. This is achievable through the creation of new values at the level of a commune.

The geographical backwardness of regions can be overcome mainly through processes of social mobilisation. Analysis of factors that effect development has shown that some communes are by nature of things perpetually dependent to the government's developmental strategies.

There is the dire need to, using various methods and at various levels (village, commune etc.), undertake steps to identify and systematise the varied social / economic processes and phenomena occurring in rural environments. Undertaking a comparative research, within territorial and time perspectives, will permit the identification of current development tendencies prevailing in rural areas a factor that is in deed need to be able to forecast and plan their further development.

The importance of the foothills and mountain areas to the society goes beyond regional levels which calls for the necessity of preparing a concept of complex system for the functioning of family farms that will allow for a suitable level of existence for families resident there.

Development is a process of positive changes, both quantitative growth and qualitative improvement. It is a complex concept that consists of various activities, being the result of varied aims that development is meant to serve. The term "regional development" has no definite interpretation and it is often associated with other terminology like localism, local, local society, local authority, local action and local connection (Parysek J., 1993).

The economic development of the local area involves first and foremost, the development of individual and group initiatives through the utilisation of local resources such as raw materials, labour, scenery values as well as existing technical and social infrastructures.

Local development at the social level involves the ability to articulate the interests of groups, the formation of associations, as well as accepting responsibility for their daily life including services in the area of education, health and social services. This ought to rely on the economic returns of the local economy nonetheless, it can in some situations external financing may become indispensable. This is aimed at equalising basic living standards and qualification for the whole country.

Local development in the area of culture involves the possibility of using one's own channels of social communication, independent of national institutions and the mass media such as the local print media, radio and cable television.

Locality is understood to mean a distinguishing feature and with three meanings (Trojanek M., 1992):

- Locality is a feature characterises the peculiarity of a given set-up in a system of inter woven surrounding and superior authorities (the commune within this system is local with respect to the Province which is itself considered local in relation to national authorities),
- Locality is a substitute dimension of a part of the whole, meaning a relatively small part on the basis of which it can be said that locality is something larger than a primary unit but smaller than a region,
- Locality expresses a distinct autonomous way of functioning of a given system in a class of similar systems.

Local societies could enhance local development through their proneness to business initiative, technological advancement, innovations as well their acceptance of reform measures.

The local authority is a given territory that is governed by an entity which combines the feeling of belonging through which needs in the area of daily life are satisfied. This is either a commune or a small town.

Local development could be said to take place only when harmonised and systematic are undertaken in a local community with the participation of interested partners and are aimed at meeting the needs of the local population and enhancing overall advancement. This advancement is taking place simultaneously and harmoniously at many levels and it is accompanied by the support of public institutions.

Development ought to be based on a small scale and stimulated by the region's internal needs.

The concept of endogenic development assumes that innovations are local and that the local populace is actively engaged in actions beneficial to the generality.

A characteristic feature of rural areas is that they are differentiated socially and economically. The Polish rural area is classified into the following basic structural units in accordance with OECD's criteria. They are as follows:

- Territories that are economically integrated, that are developing economically and demographically. They are generally located close to urban areas and they make up about 20% of rural areas,
- Semi-rural areas that are agriculturally dominated with a weak economic development and demographically stagnant. They make up 60% of rural areas,

- Peripheral rural areas with a weak and sparse population that is generally economically regressive – 20% of rural areas (Agricultural Adjustment and Diversification, 1996).

A majority of peripheral areas that are distant from economic centres are characterised by:

- Unemployment, the outcome of closures of non profiting companies, the scraping of state farms as well as agricultural production co-operatives that were unable to adapt to requirements of market economies,
- Lack of capital and the inability of its investment in economic activities,
- Out-dated agricultural systems,
- A visible insufficient and under-developed infrastructure which guarantees investment opportunities, reduces initiative costs, affects efficiency, profitability as well as the ability to attract new forms of business,
- Lack of modern institutions such as banks with good networks, regional employment offices, notary public, legal and economic advising agencies, agricultural marketing companies and agencies that facilitates a modern service of agricultural production processes e.g., in the area of supply and sales of agricultural products as well as enhancing an increased economic life of rural areas,
- An out-dated social and occupational structure in which farmers and persons that are engaged in simple non agricultural activities dominate,
- An over bearing importance of traditional attitudes, in the form of lack of initiatives, that are characterised by lack of faith in one's abilities and at the same time jealous of those that have made it.

The above mentioned problems and difficulties of rural areas have led to a change in the implementation of social -economic policy blueprints. In this way attention is being drawn to the need for a complex approach whose practical realisation is the concept of multi-functional rural development.

### **3. Pre-requisites for enterprise initiatives**

Enterprise initiative as a process involves the setting –up units and development of enterprise economic activity. The essence of economic activity, from the point of view of entrepreneurship, is the engagement of existing productive machinery in future expectations with the attendant risks and insecurity but allows for the release of initiatives as well as the creation of new enterprise attributes. A way of making entrepreneurship real is through innovation, which brings to life new ways of using existing resources and also creates new ones. Enterprise attitudes and enterprise processes are interwoven. Companies will only be successful in their fight with co-competitors when they

positively respond to chances that result from changes in their environment and are able to steer clear of threats.

Finding the most suitable way of development and place in the market, innovative activities, depends on how a company is managed. Entrepreneurs are more efficient in management; they undertake varied initiatives and initiate advancement.

The activation of non-agricultural enterprise initiative whose manifestation is the development of small and medium-scaled rural industries is an important function of rural economic transformation.

The essence of enterprise activity is such a behaviour, which is based on knowledge not intuition and leads to actions that offer resources new possibilities for creating wealth.

Enterprise initiative according to Wiatrak (1998), is a kind of behaviour in economic activities and it includes issues connected with processes of organisation, undertaking such activities as well as accepting resulting risks. This calls for an active behaviour of those involved in economic activities, which through their action stimulate or change it to achieve complex, often better, material benefits.

A man that is involved in enterprise activities is not left alone to himself but is embedded in some interactions and dependent on others which results in the formation of interpersonal relationships.

Researchers have worked out various kinds of interpersonal relationships such as:

- Instrumental links describe instrumental relationships such as sales and supply related contacts (public relations). These relationships develop during working periods and involves the exchange of job related resources like information, expertise, professional advice and resource materials.
- Personal links in which interpersonal contacts are the result of sympathy to friends, club contacts or mutual supports, information exchange as a source of mutual inspiration. The relationships are based on social support and it's characterised by a high level of intimacy and trust. Majority of interpersonal relationships is generally instrumental and expressive in nature.
- Symbolic or moral interpersonal relations, which originate from approaches to specific aims, (political, ethnic, religious or moral), and they bind members together.

Enterprise initiative is first and foremost a kind of human approach to the environment where he lives and works. This approach is made up of many factors such as being active, innovative, susceptibility to risk taking, adaptable, the desire to develop etc.

An entrepreneur is considered in economics as a person who organises factors of production (land, work, capital) with the aim of reaping profits (Wilkin J., 1997).

In economic terms, enterprise means strength and commitment to create new material resources and services, which means the desire to achieve quantifiable goals. Ideas might touch on different forms of economic initiatives such as in organising business organisations, co-operatives, and associations, starting individual activities or in partnerships.

An entrepreneur is not just someone who manages a business successfully, but one who is very active, initiative, even beyond typical business circles e.g., in school, university or office.

A real entrepreneur is such a person who seeks changes, is responsive to them and exploits them as opportunities for social and economic innovations. Sustaining the spirit of entrepreneurship is first of all being fast. An efficiently produced good, a fast market turnover, as well as better response to the needs of customers leads to faster development.

## **Conclusion**

Interesting methodological situations, in which economic development indices are averaged at the regional level exist in Poland. Intra regional differences are smaller than differences within a region.

The economic state of a commune ought to be the base for all analyses which consider agent – stimulation factors or that limits possibilities for development. The location of the commune as well as the degree of its economic backwardness are important factors that differentiate both the state and directions of economic development.

Communes which are economically poorly developed with a higher concentration of its population in small farms under unfavourable conditions for agricultural production, ought to entice a lot of investors into creating new job places, because the inflow of modern technology and organisational options enhances economic development, being the life wire of all advancements. This kind of macroeconomics of local authorities also aims at improving the economic competitiveness of the commune.

As a result of on-going economic transformations rural unemployment is on the increase, twin jobs are becoming smaller while excess employment on individual farms can't be productively utilised. This helps to limit the demand for agricultural products due to falling purchasing power of non-agricultural population, lack of new markets, uncontrolled import of agricultural raw materials and food products. There is therefore, as a result of the fore going, the dare need to develop of rural non-agricultural functions, to seek new non-agricultural job places and to promote models of farms with two source of incomes. This concerns first and foremost the development of local processing industries for farm and forest products, craft, commerce, services, and rural

tourism. This is the only way of increasing labour efficiency, economic stimulation, and increasing the incomes of the rural populace.

The buying power of agricultural products dropped successively in relation to a continuously richer though costlier production inputs in the nineties. Polish agriculture, especially of the region covered by the research, is a sector of the nation's economy that requires fundamental changes. The low absorbing power of local markets causes that many food producers have problems with sale of their products as demand limitations are largely determined by the income levels of the agricultural populace.

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# THE ROLE OF THE HUMAN RESOURCES MANAGEMENT (ON THE EXAMPLE OF COMMUNE OFFICE IN KŁOBUCK)

## ÚLOHA RIADENIA ĽUDSKÝCH ZDROJOV (PRÍKLAD OBECNÉHO ÚRADU V KŁOBUCK)

*Jolanta URBAŃSKA*

### **Abstract**

Human resources management plays a special role in local government organizations. Presented in this study procedures which are in force in Kłobuck Commune Office and show that employees are a strategic resource for the organization which is an adequate to needs approach.

**Keywords:** Human resource management, organizational culture, HR policy, promotion system

### **Abstrakt**

Riadenie ľudských zdrojov zohráva osobitnú úlohu v orgánoch miestnej samosprávy. V tejto štúdii sú prezentované postupy, ktoré sú platné na obecnom úrade v Kłobuck a ukazujú, že zamestnanci sú strategickým zdrojom pre organizáciu, ktorá je dostačujúca pre potreby prístupu.

**Kľúčové slová:** riadenie ľudských zdrojov, organizačná kultúra, personálna politika, podpora systému

## **Introduction**

Efficiency of labour in local government administration sector is not measured with obtained profits, but with the worth of people employed and satisfaction of customers. Human capital through its creativity and intellectual potential is able to determine comparative advantages over other local government entities. Increase in demand for knowledge requires changes of processes and structures which in consequence will lead to changes in employment area and in broadly defined human resources management.

### **1. Human resources management**

Modern economy becomes to a greater and greater degree global, computerized and based on knowledge. These changes and global tendencies influence and induce modernization of IT systems, systematic transformation in Poland and labour resources management. Changes in area of personnel management are visible; human capital becomes a strategic value in enterprises in fields such as marketing, sales, production and finance (Pocztowski,

Wiśniewski, 2004). In modern approach to management, the role of personnel employed in the enterprise as the most valuable capital is exposed. This personnel is perceived as a capital, which in individual or collective way contributes to the realization of targets of whole organization (Armstrong, 2000). Human resources management is also a method of employment management that is aimed at obtaining competitive advantages through strategic arrangement of engaged and qualified employees with the use of cultural and personal techniques. Qualifications of employees become the capital of enterprise if company abilities and skills are distinguishable, complex and sophisticated or can hardly be imitated by competition. These skills create value for the company and assure a relatively permanent competitive advantage. The tendency of human resources management in all institutions or enterprises is oriented mainly on transformation of human resources into capital, which subsequently determine the quality of the whole enterprise. This capital is represented by personnel, which is permanently associated with the company and its mission, and prepared for cooperation on different fields and in various situations. Human capital constitutes a significant element of improving company image and contains enormous motivation possibilities, which appear as a result of effective organization management that is oriented to its mission and strategic targets (Sajkiewicz, 2000). Efficient human resources management through a proper planning of employment, appropriate choice of HR, permanent development and training, adequate motivating, and development and cultivation of work culture contribute to increase in human resources significance in enterprise value.

Human resources management is a relatively new concept in comparison with personnel management and treats human capital as a basic resource of organization. It is associated with such issues as effective communication with employees or including employees in current problems of organization (McKenna, Beech). A strong pressure in personnel management is put on strategic approach associated with solicitation and employment of new people, but also with motivating or controlling. Personnel management includes mainly a topic of strategy, whereas economic issues represent changes which appear and which are adopted by employees. The process of adoption is realized through their best efforts, which simultaneously develop abilities necessary in new strategy (Armstrong, 2000).

## **2. Labour resources in local government entities**

Human resources management in new economic and social conditions gains special importance in local government entities. Public and local government administration have perceived that employees are the most significant capital in their structures and investments in personnel development

on every level of organizational hierarchy is a foundation of running local government offices. In Polish local government entities, some activities directed towards increase in strategic management of human resources are visible. HR departments are being transformed from personnel sections responsible only for administrative actions associated with employees, which were typical for previous system of centrally planned economy. These changes are introduced in order to create modern human resources divisions with much broader range of activities and which are able to satisfy needs of human resources management that arise in competitive social and economic conditions. HR policy, which is an element of human resources management, encompasses such fields as:

- recruitment,
- promotions and professional development,
- motivation systems (material and intangible),
- safety and work hygiene,
- training,
- employees' participation in management of the company,
- non-competitive agreements (not disclosing to public any technical, technological and organizational information or any information which may have an economic value for competitors) (Popławska, 2005).

Efficiency and success of organization are determined not only by realization of appropriate market strategy, but also by creating a “well” structure, effective motivation and supervisors' competence, and ability to cooperate which is a very valuable skill both for individuals and groups.

### **3. Organizational culture**

Every organization is characterised by intangible features – style, character, specificity of actions, which even more than authority and formal solutions determine processes that occur inside the organization and their contacts with external environment (Chudak, 2002). Organizational culture is a “personality” of organizational entity, office or local government. It is visible in behaviours and reactions of social entities and groups, in subscribed by them views and attitudes, or methods of solving problems. Organizational culture is ubiquitous and this is one of the very typical features of the culture. It is an inseparable element of interpersonal relations and is present on every level of organization. Organizational culture is extremely important in public administration entities. It fulfils many functions and many targets, which can be classified in two groups:

1. Concerning problems associated with external adjustment – enables to understand the mission and the strategy of organization, identification of basic targets of organization among participants. By offering consensus in targets resulting from the firm's mission

and strategy, it influences integration of participants. A culture offers to participants, unified criteria of measurement and effects assessment. It helps to evaluate the progress in realization of targets and their potential modification or change. Thanks to the existence of culture, participants are able to work out a change strategy together and think about directions and methods of organization development and improvement.

Concerning problems associated with internal interrelations in the organization. In order to effectively introduce a strategy in organization, a cooperation of all employees is necessary; therefore an internal integration process is very significant. Among issues connected with internal integration, the culture offers such functions as common language or memory system. Organizational culture enables to avoid conflicts around authority and power, reduce negative emotions and aggressive attitudes (Witkowski, 1998).

The act on commune self-government from 8 of March 1990 created new opportunities for local government community by entitling them to self-determination, decide on priorities and development directions, effectively exploit resources and minimize threats associated with social, economic and technological transformation (Ustawa, *O samorządzie gminnym*).

#### **4. Kłobuck Commune Office**

Kłobuck Commune as a result of administrative reform since 1 January 1999 has become a county – local government and municipal Office gain new rights, but also new responsibilities. Kłobuck is a town with the rights of a county – Commune authorities fulfil also functions of county authorities. The town has also a legal personality, therefore it executes public tasks in its own name and on its own responsibility. The range of its activities includes all public affairs with local significance, which is not reserved by other Acts for other entities. The aim of the Commune is to satisfy common needs of inhabitants, create conditions for rational and harmonious Commune development. The range of Commune activities encompasses: organization of public life of local community, representation of interests of Commune inhabitants towards country authorities, fulfilling public administration, economic and social development of the Commune.

In order to introduce targets described in the statute, a Commune performs its own tasks and tasks assigned by the government administration or taken over from government administration on the basis of agreements. The commune acts with the help of authorities:

- Town Council (is a constituting and controlling authority in the Commune).
- Mayor of the Commune (is a executing authority in the Commune).

The activity of Commune authorities is public. Any restrictions of the publicity may result only from acts. The publicity of Commune authorities actions include particularly a right of inhabitants to obtain information, enter the Town Council sessions and meetings of commissions, access to documents connected with performance of public tasks. In significant issues for the Commune, inhabitants can express themselves through referendum, and every inhabitant of the Commune can apply to the Office and make it reveal public information.

With regards to tasks performed by the Commune Office, the following content-related departments can be distinguished: Architecture Department, Investment Department, Economic Ventures and Commune Services Department, Service departments: Client Service Office, Town Promotion Office, Education Department, Human Resources Department; Recording departments: Geodesy and Cartography Department, Registry Office, Ownership Supervisory Department.

In organization structure, the realization of personal functions is delegated to Organizational Department and Human Resources Department. The Human Resources Department performs policy connected with issues such as wages, training, service and preparation of recruitment procedures, organization of competitions associated with managerial positions. Organizational Department is responsible for issues connected with quality system, and with assurance of organizational and administrative conditions of employee's performance.

## **5. Targets of HR policy**

The modification of the structure of the department responsible for employee's issues was in place in 2002. The document of choosing strategic targets of HR organization policy was developed. The following targets, which constitute the approach to employees as a human capital, can be distinguished:

1. Recruiting and keeping qualified employees in organization.
2. Development of employee's competences and skills.
3. Creating an atmosphere, which favours positive relations between employees and supervisors?
4. Supporting creative attitudes of employees in order to improve the quality of services which are performed for inhabitants.

In the area of human resources management, some behaviour procedures were developed. They are related among others with:

1. Employment planning.
2. Recruitment and employees selection.
3. Adaptation of new employees.

4. Work results assessment.
5. Systems of employee's evaluation.
6. Wages systems.
7. Personnel administration.
8. Analysis of costs of work position.
9. Analysis of productivity of operational positions.

All people employed in local government organization are treated as strategic resource. The management of the office pays special attention to the quality of social potential. The Office takes efforts in order to optimally choose the HR structure, regarding both the amount of people employed and the level and kind of professional competences. New recruitment plans are constructed every year, and procedures associated with them are included in official documents. Standards in recruitment advertisements are a tool, which regulate and standardize the way of informing potential candidates about vacant positions and recruitment procedures. The level of fluctuations in the office is low – protective activities include movement between different positions, or giving recommendations for future employers. Recruitment and selection of employees are conducted through internal recruitment based on the office's database about candidates from external labour market. External recruitment is performed with the use of press advertisements, office's webpage or job intermediaries. Recruitment process consists of interview, practical tests, written tests and analysis of candidate's references. The Office runs an Offer Bank, where or applications of candidates who want to work are placed. Recruitment of new employees is performed according to sieve model – high competences, certificates and diplomas are conditions, which entitle to apply for a position.

### **5.1 The system of training in Commune Office**

Newly employed people experience a period of adaptation, when they are trained in occupational health and safety or position and quality system. Indicated employee with a longer work experience performs a care on every new employee, except by supervisor. Young employees describe areas of their interests and aspirations associated with the work; it becomes one of the basis for assessment of motivation level of given candidate which is done by HR division (later in assessment system used in horizontal and vertical promotions). The training system was created in 2002. The need of training is reported by department directors and by directors of divisions supervised by Commune Office. Except department specific training, all employees are trained in operating new IT systems or rules of quality policy. The control over training effectiveness is performed by a series of procedures, among others: exams, assessment of changes in employee's behaviour, assessment of training influence on work effects and results of organizational unit. The Office keeps

the rank of training companies, collecting data about their services quality. The majority of budget expenditures is allocated to external training and postgraduate studies. Remaining forms of training and HR development encompass:

- internal training performed for groups of people and training sessions designed specially for employees of one of the department,
- instruction on work position,
- transfer of experience,
- consultation with supervisors,
- substitution and rotation on work positions,
- participation in conferences and seminars,
- psychological training

Innovative form of improvement in employees' qualifications is their participation in project works – although in the beginning employees have demonstrated reluctance to that kind of activation, after few months since introduction employees display a very active engagement in project works.

## **5.2 Promotion system**

Since 2002, Commune Office in Kłobuck has begun activities designed to build carrier paths for young employees. Directors choose people with great potential; present those opportunities for development and conditions necessary to make particular targets come true. However, carriers in these kinds of institutions are somehow restricted – the highest positions are filled through local government elections – therefore restrictions in carrier planning occur. One of the most original ideas introduced in the Commune Office are research associated with observation of relations between employees in organization. Results may improve the functionality in the organization through prevention of conflicts, modification of behaviours, or finding people with high level of creativity.

## **5.3 The system of wages, assessment and motivation**

Since 2000, by the agency of external company, the Commune Office has introduced a system of employees' assessment, which is under permanent modification. Between 2001 and 2003, a system of management through targets has been introduced. It serves as a measure used for assessing quality of work of particular employees, complete organizational entities or separate task teams. These assessments are performed once a year and include three elements:

- self-assessment,
- assessment by supervisor,
- assessment by organizational cells (for special employees).

The results of these assessments are used to update personal data, planning appointments, planning trainings, promotions and salaries. Nevertheless, the most important feature of those systems is to assess the use of knowledge and abilities of employees in performed work and duties. Therefore, the assessment is of developing character – it results in decisions about methods and directions of employee development (transfer, promotion, and training). Apart from assessment system, a safety feeling and work stability are strong motivating incentives. The results of research of personnel satisfaction reveal that also a possibility of participation in interdisciplinary task teams and a possibility of introducing own ideas as additional incentives. Engagement and creativity of employees is stimulated also by organization of competitions (or instance, a competition where new concept of efficient internal communication needs to be developed or a best local government employee is being chosen). The Commune Office has developed its own standards of HR policy, which are based on an assumption that all employees contribute to the most important capital of the organization.

These modern HR solutions contradict with a stereotypical view of local government as a bureaucratized institution, which kills innovativeness and is unfriendly for inquirers. Within boundaries set by law, the Office creates salaries in order to make them a motivating element for potential and existing employees. Many initiatives associated with improvement of information flow in organization are sourced in activity concepts of commune authorities and in involvement of employees who jointly decide about the shape of the Office. Implemented personnel solutions are very effective and, as indicated and confirmed by quantitative analysis, has real influence on realization of social mission of the Office.

## **Conclusion**

Every organization owns some resources, from which people are considered to be the most influential and valuable. People are generating a work, skills, abilities and creativity. Without involvement of employees, no enterprise has chances to succeed. Local government entities should to a larger extent concentrate on efficient exploitation of human resources – actually it represents a condition of a good shape and financial standing of the structure. In changing and volatile conditions of external environment, fossilized and stable institutional structures are dysfunctional and need to be replaced by forms that are more flexible. Modern technologies force the employees to present different skills. Organizational structures by becoming more liquid and unstable require from people a greater amount of flexibility in approaches towards work division and effective communication on all management levels in organizational hierarchy.

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# TOWARDS FINANCIAL STRENGTH OF TOP THREE BANKS IN SLOVAKIA

## ANALÝZA FINANČNEJ SILY TOP TROCH BÁNK NA SLOVENSKU

*Martin KRAČINOVSKÝ – Eva KAFKOVÁ*

### **Abstract**

Banking industry has great importance in each national economy. It consists of banking institutions, which carry out important functions. In order to maintain sound and sustainable banking system it is necessary for banks to keep competitive and financially strong. In this paper we deal with financial strength of three biggest banks in Slovakia and with main factor that have influence on it. The aim is to determine bank's financial strength of these banks, determine key factors and identify possibilities for its improvement. Financial strength of bank is actual theme especially in present time of persisting global economic crisis and management of banks stands in front of not easy decisions.

**Keywords:** bank, efficiency, financial strength, financial analysis

### **Abstrakt**

Bankový priemysel má veľký význam v každom národnom hospodárstve. Pozostáva z bankových inštitúcií, ktoré vykonávajú dôležité funkcie. V záujme zachovania zdravého a udržateľného bankového systému je nevyhnutné, aby sa banky udržiavali konkurencieschopné a finančne silné. V tomto príspevku sa budeme venovať finančnej sile troch najväčších bánk na Slovensku a hlavným faktorom, ktoré majú na to vplyv. Cieľom je určiť finančne silnú banku z týchto bánk, určiť kľúčové faktory a stanoviť možnosti ich zlepšenia. Finančná sila banky je aktuálna téma najmä v súčasnej dobe pretrvávajúcej globálnej hospodárskej krízy a riadenie banky stojí v popredí a nie je jednoduchým rozhodnutím.

**Kľúčové slová:** banky, efektívnosť, finančná sila, finančná analýza

### **Introduction**

The situation in Slovak-banking industry rapidly changed after the crisis from the second half of 90s and sanitation actions of government fulfilled their purpose. As banks grew, they became attractive for foreign investors who own more than 90% of capital. At that time nobody could anticipate another crisis banks need to confront after approximately thirteen years. Global financial-economical crisis has hit Slovakia in 2008 and its negative impacts still persist. Such a situation tests Slovak-banking industry and will show if sanitation actions from late 90s were

definitely effective or whether banks were and are managed inefficiently or will require further assistance.

This article is dedicated to determination of financial strength of the largest three commercial banks in Slovakia (they are Slovenská sporiteľňa, a. s. (SLSP), Všeobecná úverová banka, a. s. (VUB) and Tatra banka, a. s. (TB) in the period of 2001–2008) based on selected financial-economical indicators. Along with this main objective we will try to identify factors, which have important impact on the banks' financial strength and an outline of possibilities focused on improvement of financial strength.

## **1. Financial strength of banking institution and its determinants**

Financial strength of banking institution is and always has been one of the key questions especially in current globalizing, dynamic, and highly competitive environment. Banks' financial strength depends on top management's approach, professionalism, and financial strength, which is also determining factor for success of bank as a market participant.

Financial strength of banking institution depends and is influenced by combination of selected indicators. The financial strength was determined by utilization of modified and slightly simplified of Moody's "Banks financial strength rating". Slovakia is considered as a mature market and this situation was fully respected.

Key factors which Moody's evaluates are financial and qualitative factors with balanced weights. Qualitative factors are for example market share and sustainability, stability of revenues, liquidity management, credit risk concentration economic, stability of country, law system as well as regulation level. Qualitative factors are complex and for correct determination it is necessary to conduct deep research of crucial factors. That is why the research restrained to financials factors only, which are fully in banks competence and bank has direct influence over its results. Such factors are rentability, liquidity, assets quality, efficiency and capital.

## **2. Capital of bank**

Bank's capital is very important category. It carries many functions such as loss coverage function, financing functions and with capital is close connected capital adequacy. Capital is also from the accounting point of view important category and according to IFRS the equity (own capital) is considered accounting unit's propriety lump sum after deduction of all its debt (*IFRS* – International

Financial Reporting Standards). The meaning of commercial bank's capital lies in protection of bank from insolvency.

In the Slovak accounting practice equity is structured in registered capital, capital funds (e.g. capital surplus), reserve funds (legal reserve fund), other funds created from the profit, the result from the previous years, and the result of current period. However Basel agreement does not accept the profit of current period as a component of equity and EU directive allows including such profit under condition that it is adjusted for dividends payout. In further text we apply to the EU directive (Directive no. 86/635/EHS of 8.12.1986 about annual statement of finances and consolidated statements of banks and other financial institutions).

## 2.1 Capital strength

Moody's rating agency assigns the best rating to a bank where the equity ratio (equity to total assets) reaches 10% and more. Well-known World banks are able to conduct their activities with relatively lower equity ratio (e.g. an average equity ratio in Belgium was 2.7% in 2005). It requires maintaining adequate structure of both sides of balance sheet, appropriated diversification of products', clients' portfolio and, of course compliance with rules of cautious enterprising.

Three biggest banks in Slovakia have equity ratio floating from 5 to 8%. From the development of recent years we can assume, that equity ratio should not change rapidly in the future.

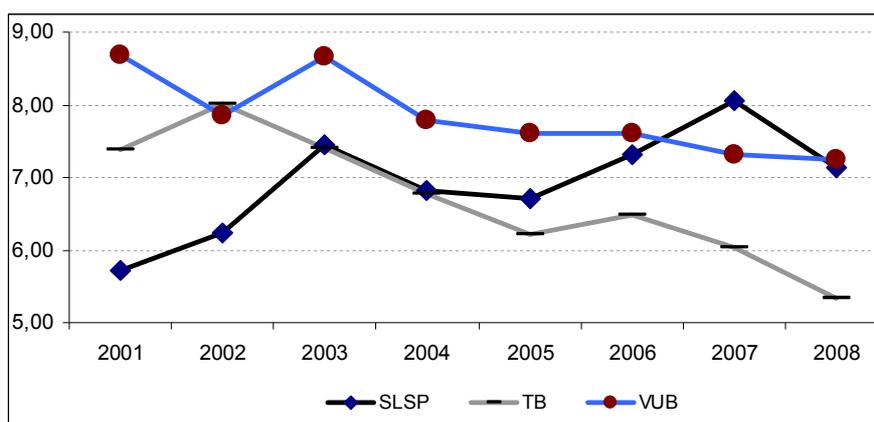


Figure 1

### Equity ratio (in %)

Source: Annual reports of banks and own calculations.

## 2.2 Profitability of bank

Profitability of commercial bank belongs to initial and main indicators of its business activities along with maximizing the shareholder's value. Banks and any other companies try to achieve the more profit the possible and their activities tend that way. We can identify three reasons of profit incentives of banks (SELVAVINAYAGAM, 1995):

- Ø to provide an appropriate return to the shareholders,
- Ø to give confidence to the depositors that the business is sound and competently managed,
- Ø to maintain and expand the bank's capital base, in order to satisfy prudential criteria and facilitate business growth in real terms.

Despite of common feature of selected subjects, which are largest, and account for more than half of Slovak banking industry we cannot consider ROA as well as ROE as identical. Significant differences were recorded especially in 2001 (ROA and ROE; see Tab 1). In 2001 Tatra banka reached ROE of more than 33 % but other two biggest banks not even 10 %. Since 2004 the profitability of top three banks has converged, however there are still certain differences. Elementary factors that influence ROE are net profit and amount of equity. Profitability depends on the additional factors as well. One of them is financial leverage which states, that the higher equity the lower profitability (under presumption of preservation constant volume of net profit).

Indicator	Bank	2 001	2 002	2 003	2 004	2 005	2 006	2007	2008
ROA	SLSP	0.57	0.60	1.31	1.13	1.30	1.29	1.39	1.26
	TB	2.77	2.14	1.50	1.34	1.23	1.34	1.26	1.14
	VUB	0.80	0.83	2.33	1.42	1.70	1.58	1.27	1.29
ROE	SLSP	9.93	9.62	17.60	14.78	17.19	15.95	16.18	16.42
	TB	33.35	23.66	18.04	17.39	17.06	18.22	17.06	18.22
	VUB	9.15	10.59	26.92	18.30	22.35	20.71	17.37	17.85

Table 1

### Selected rentability indicators of TOP 3 banks (in %)

Source: Annual reports of banks and own calculations.

## 2.3 Liquidity of bank

We can characterize liquidity as an ability of economic subject to fulfil agreed liabilities on agreed due date. Liquidity of commercial bank expresses ability to pay out deposit of depositors in time and in full scale (interests included) on demand (HORVÁTOVÁ, 2000).

Liquid assets are closely linked to liquidity of bank and are such assets, which are possible to convert into cash in a short time and without heavy loss of value in case of resale. This definition rises from the liquid assets characteristic according to Rose who mentions, that “liquid assets have three characteristics: <sup>(i)</sup>transformation to cash without delay, <sup>(ii)</sup>price stability (sale of assets must cause an increase of cash in hand without the decrease of its value due to market fall), and <sup>(iii)</sup>reversibility (assets buy-back with a minimum risk of loss)” (ROSE, 1991).

From the results indicated in Tab. 2 it is possible to point out that all these banks are liquid, dispose of sufficient volume of liquid assets and are able to pay out almost one third of deposits. Liquid assets ratio should float above 20%. Analyzed banks do not have problems with that ratio either. The same situation is with the second indicator (Ability to pay out deposits) because the lower line (30-40%) was exceeded in all banks.

Indicator	Bank	2 001	2 002	2 003	2 004	2 005	2 006	2 007	2 008
Ability to pay out deposits	SLSP	35.42	43.38	29.73	41.42	45.99	52.68	43.33	48.17
	TB	67.60	40.67	33.59	31.41	31.17	35.61	66.54	48.10
	VUB	31.38	38.12	36.18	38.41	32.63	32.28	32.71	33.52
Liquid Assets Ratio	SLSP	30.31	36.98	24.66	30.71	32.01	38.09	33.59	33.42
	TB	50.46	33.00	26.07	21.80	22.63	27.32	49.23	34.25
	VUB	26.08	31.14	30.61	33.58	25.20	28.36	29.48	29.59

Table 2

**Selected liquidity indicators of TOP 3 banks (in %)**

*Source:* Annual reports of banks and own calculations.

## 2.4 Efficiency of bank

Efficiency of banking activities is key presumptions of being successful on the market. Efficiency is category as a result of different external and internal factors. Why is efficiency so important? The low cost level allows to maintain bank's profitability even if higher competitiveness decrease gross profits. Another advantage is that bank with low cost base is able to survive temporary price war

with competitors and will have enough time for restructuring of its activities regarding the new price long term changes on the market.

Efficiency of bank is possible to express by means of aggregate indicators. Most often is used an indicator about relation between operating costs and operating revenues, so called Cost-to-Income Ratio (Efficiency ratio, respectively). Efficiency ratio is a percentage formulation total operating costs from total operating revenues. Other indicators for calculating of efficiency are net interest margin, net interest spread, index of operating costs to total assets etc.

Graph 2 shows efficiency ratios of top three banks in 2001-2008. It is obvious that there has been significant change in operating efficiency of banks in last five years. The change is positive because efficiency ratio has declining tendency since 2006. In comparison with average of EU 15 the efficiency ratio was 61.5% within years 1996-2003. The best values were recorded in Luxembourg, where average value operating costs to operating revenues floated around 43.1%. The worst results in efficiency were in Sweden banking sector (Cost-to-Income ratio over 70%).

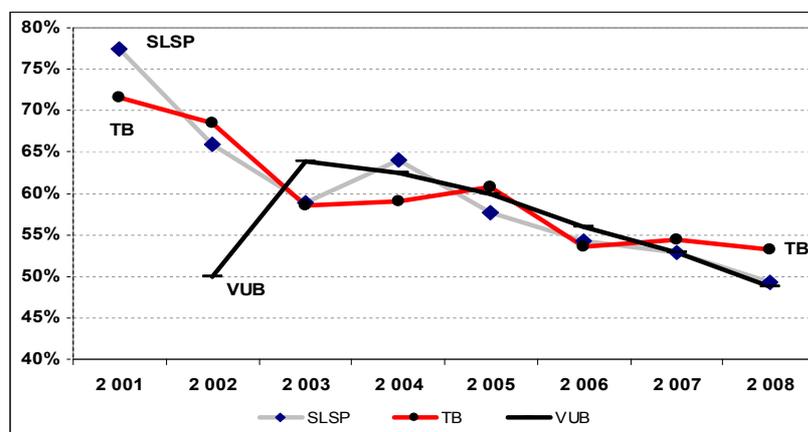


Figure 2

### Efficiency ratio (v %)

Source: Annual reports of banks and own calculations.

## 3. Financial strength of top 3 Slovak banks

For the purpose of financial strength determination indicators showed in Tab. 3 were selected. We used also recommended weights but divided them the way in order to the sum equals 1 we multiplied them by number two.

The development of first three indicators (ROA, Liquid Assets to Total Assets and Equity Ratio) is able to consider as positive if their values grow. In our

particular case we used some restrictions related to the best values and are linked to the previous indicators. In order to systematic and independent exploration of financial strength we considered value under rating “A” as a maximum value which can particular bank achieve. It means if bank reached 3% of ROA, only 2% (maximum) enters in the calculation. This measuring range disables compensation, i.e. worse results in one indicator can not be compensated by better results in other indicators.

	Weight	A	B		C		D		E
<b>Profitability</b>		>=	>=	<	>=	<	>=	<	<
ROA*	0.2175	2.0%	1.7%	2.0%	1.3%	1.7%	0.6%	1.3%	0.6%
<b>Liquidity</b>		>=	>=	<	>=	<	>=	<	<
Liquid Assets Ratio	0.2175	25%	22%	25%	19%	22%	16%	19%	16%
<b>Capital</b>		>=	>=	<	>=	<	>=	<	<
Equity Ratio	0.2175	10%	8%	10%	6%	8%	4%	6%	4%
<b>Efficiency</b>		<	>=	<	>=	<	>=	<	>=
Efficiency ratio	0.13	45%	45%	55%	55%	65%	65%	80%	80%
<b>Assets Quality</b>		<	>=	<	>=	<	>=	<	>=
NPL ratio**	0.2175	0.8%	0.8%	2.0%	2.0%	5.0%	5.0%	12.0%	12.0%
<b>FINANCIAL STRENGTH</b>		<b>8.34</b>	<b>7.19</b>	<b>8.33</b>	<b>6.01</b>	<b>7.16</b>	<b>4.75</b>	<b>5.95</b>	<b>4.71</b>

Table 3

**Modified rating range of bank’s financial strength**

Source: Moody’s Investors Service: *Bank Financial Strength Ratings: Global Methodology*. New York : Moody’s Investors Service, 2007 a own processing.

\* Return on Assets

\*\* Non-performing Loans to total Loans

The second group of indicators (Efficiency ratio and NPL ratio) means better results for bank if their values are as low as possible. For their calculation we used follow relation:

$$U_{ij} = \frac{100 - X_i}{100},$$

where  $U_{ij}$  is adjusted value of achieved indicator  $j$ -bank in  $i$ -year for the needs of rating evaluation and  $X_i$  is real achieved value before adjustment.

Table 4 shows values of particular rating grade which are results based on above mentioned conditions and procedure. Each bank had opportunity do achieve maximum value of 8.34 with highest rating grade “A”. Such bank dispose of the biggest internal financial strength, excellent balance sheet management, maintains extraordinary rentability, minimizes classified loans, is liquid, and able to withstand possible negative changes of environment.

On the opposite site we can find bank with rating grade “E” which is an antipole to a bank with the best results; it has insufficient financial strength required for growth and for settle up with unfavourable changes of external environment, it has low liquidity ratio, low rentability and weak operating efficiency.

<b>Bank/Rating</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>SLSP</b>	6.97	7.12	7.48	7.40	7.43	7.57	7.76	7.54
Rating	<b>C+</b>	<b>C+</b>	<b>B-</b>	<b>B-</b>	<b>B-</b>	<b>B-</b>	<b>B-</b>	<b>B-</b>
<b>TB</b>	7.71	7.85	7.62	6.75	6.79	7.40	7.29	7.11
Rating	<b>B-</b>	<b>B+</b>	<b>B-</b>	<b>C+</b>	<b>C+</b>	<b>B-</b>	<b>C-</b>	<b>C+</b>
<b>VUB</b>	n/a	7.58	7.99	7.69	7.02	7.70	7.57	7.57
Rating	n/a	<b>B-</b>	<b>B+</b>	<b>B-</b>	<b>B-</b>	<b>B-</b>	<b>B-</b>	<b>B-</b>

Table 4

**Financial strength of TOP 3 bank in Slovakia**

*Source:* own calculations.

Top tree banks in Slovakia cannot compare to the most successful world banks indeed, but they achieved relatively good results in our evaluation. It is important to emphasize the fact that the largest does not need to mean the most successful. Naturally the size of bank could be a theoretical assumption but wide range of other (external and internal) factors must be taken into account, which offer more comprehensive overview of bank as an entity and a part of certain economic system.

In financial strength’s evaluation Slovak three biggest banks reached average but mostly above the average results. Only in 2006 all three banks achieved the same rating grade, however there was only slight difference among them in 2003. Based on the eight years development of bank’s financial strength it is possible to declare that their financial strength has stabilized with slight tendency for improvement. This situation was cause predominantly by dynamic development on the banking market and in Slovakia as well. It is known that banking industry is dependent on the national economy – if one grows, the other acts the same.

#### 4. Financial strength problems

We can identify several reasons why Slovak top three banks did not reach the best score. First it is the strictness of rating methodology and related unfeasibility to compensate evaluated indicators with each other. This condition should pursue the objective function and should help to avoid the distortion of final value. Second, we can find the reason in an Equity ratio indicator. Moody's sets 10 % at minimum for the best evaluation achievement. In order to comply with original rating range we followed such condition as well. There is a room for reduction of this indicator because the higher Equity ratio may not indicate the better financial strength automatically. If banks dispose of well-diversified portfolio, liquidity is secured by enough portion of liquid assets and minimum capital requirements are maintained, a question might occur whether such high Equity ratio is necessary (and we need to take into account present situation, development of external environment and particular industry which we abstract from).

Classified loans and their ratio (classified loans to total loans) pose a serious problem that has a negative impact on financial strength. This problem was relevant in Slovak banking industry especially on the break of 20<sup>th</sup> and 21<sup>st</sup> century when classified loans ratio reached more than one third of all granted loans. Situation began to improve and entrance of new private foreign investors has a positively influence and reduced bad loan portfolio. Table 5 shows the difficult situation. We can point out that banks' management had to accept certain actions in order to minimize classified loans in portfolio (e.g. transfer to Slovak's consolidating company (Special company created by state for one specific purpose – to get banks rid of bad loans) or sale to other banks or companies which deal with collection of receivables). As we can see VUB and SLSP reached the best results after loan portfolio restructuralization and within couple of years they were able to lower standing borrowings from more than one third to 3.38, and 4.01 respectively. The solution of this problem in the present can positively reflect in the future business years. Banks should be more careful with granting loans and approve credit after substantial analysis of client's financial standing and its ability to refund borrowed capital.

Indicator	Bank	2 001	2 002	2 003	2 004	2 005	2 006	2 007	2 008
Classified loans ratio	SLSP	35.25	31.72	27.25	15.43	8.83	4.01	4.22	4.50
	TB	9.24	10.77	11.77	10.70	8.65	5.17	4.69	6.16
	VUB	39.43	13.77	14.27	6.12	4.42	4.33	4.40	3.38

Table 5

**Classified loans ratio (in %)**

Source: Annual reports of banks and own calculations.

**5. Size and financial strength of bank and their relation**

Logical thinking leads us to idea that the largest bank the financially stronger. But this may not mean it is true. We tested dependency of rating evaluation upon the size of particular bank (according to balance sum). Zero hypothesis was an assumption, that there is a dependency between these two values. In the models were used regression analyses of all banks (their balance sums) and rating score they achieved.

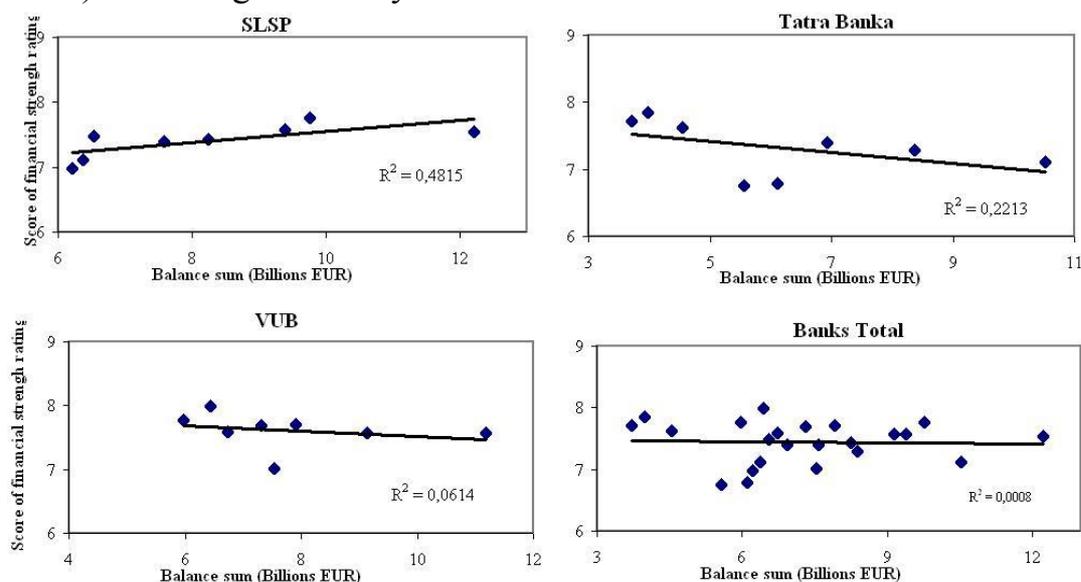


Figure 3

**Size of bank vs. its financial strength**

Source: Own calculations.

The regression model related to VUB showed very low R-square and correlation analysis between financial strength and balance sum proved no reasonable relation. The *p-value* overrun 0.05 so zero hypothesis was refused. The

same scenario and result can be applied to TB. R-square by SLSP reached almost 0.50, but *p-value* condition was not met. That is why alternative hypothesis was also accepted. According to these results it is possible to say that size of bank is not the factor, which has significant influence on financial strength.

## 6. Size and efficiency of bank and their relation

Balance sum is considered as a common indicator of bank's size, which means total assets or the other side of balance sheet. Efficiency ratio expresses portion of operating costs from total revenues. In next steps we try to compare them and find out if bank's efficiency depends on the size of a bank. We used regression analysis for determination the relation between these two values.

As we can see on the graph below there is efficiency dependence on size of the bank, to a certain extent. Correlation determinant reached value 0.5053 which means that our assumption was correct. The bank's size has an influence on its efficiency with more than 50% impact. The rest is influenced by other factors. The correlation between these two values reached negative 0.77 what means there is reciprocal proportion – i.e. efficiency ratio gets better if balance sum grows. This result was confirmed also by Pearson's correlation and this is a fact that decrease of one value will cause rise of the other value.

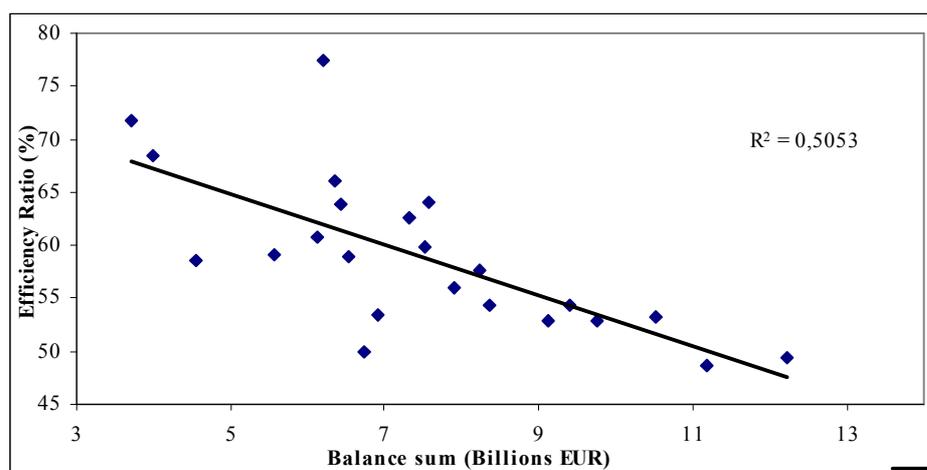


Figure 4

### Dependence between bank's efficiency and its size

Source: Own calculations.

This model is statistically significant (*p-value* did not overrun 0.05) but it has not global validity. Model disposes of limited scope and can be applied on Slovak banking industry only, and its banks which have balance sum higher than 4 billions

euro. Despite of that it gives informative picture about researching these two values which are very important from the bank's point of view.

## **Conclusion**

This research paper dealt with about financial-economical analysis of top three largest Slovak banks and determined their financial strength accordingly. We used modified Moody's rating range for strength determination. We can consider results of our research as more positive than negative and this can be applied for all three observed banks.

Financial strength of top three banks in Slovakia is on an adequate level and is stable. It is rational that it may change due to impact of global economic crisis but they are able to withstand possible turbulences. In comparison with original financial strength that Moody's rating agency rated them they reached better results in our observation. In last two years all three bank are rated by grade "C-" with positive outlook. According to our calculations SLSP and VUB reached better rating by one grade and TB rating complied with the Moody's one. These slight differences were caused by methodology and focusing on internal environment of banks only. Such methodology and decomposition of banks financials allowed us to determine weakness of Slovak banks that have bad influence on financial strength.

First of all we need to focus on credit portfolios of banks they dispose of. Bad credit portfolios are result from the 90s when banks had very high portion of classified loans. This situation changed but bad loans still reach relatively high percentage but with space for their reduction. One of the solutions is carefulness by loans granting and explore client's financial standing more sensitive. The second factor with negative influence is low efficiency of bank. Despite of decrease of efficiency ratio of observed banks there are still huge reserves for further lowering this indicator. Difference (10%) between the best value set by Moody's and the real reached value of observed banks in 2006 is witness of it. Banks have a couple of instrument how to raise efficiency. They can focus on revenues, i.e. to raise administration fees, interest margin, market share etc. Other options are on the cost side. The most important are internal processes and the way a bank is able to ensure. Bank should be focused on cost rationalization, revealing and removing ineffective processes, implementing knowledge from the research and development, creating and optimizing own cost management models etc.

In conclusion we can find the position and current situation of top three Slovak banks as positive. Banks are liquid, reach extraordinary rentability and

Slovak-banking industry grows. Financial strength of researched banks floats in the middle of rating scale with positive outlook.

## Summary

Banking industry in Slovakia passes through difficult period of time. In order to keep it well and sound it is necessary that banks must have considerable financial strength. The main idea of this research paper was to determine financial strength of top three largest Slovak banks and identify whether they are able to survive negative impacts of global financial-economical crisis.

According to the research it is able to say that Slovak banks dispose of adequate financial strength and there is very low probability of their bankruptcy. It is very important information because these three largest banks control over 50 per cent of industry and their collapse would cause severe problems in national economy. Research proved that banks financial strength depends on several factors, e.g. profitability, efficiency, liquidity, quality of credit portfolio. Size of a bank has very little influence on its financial strength, which was demonstrated by means of regression analyses of particular bank's values. On the other side we recorded middle rate of dependence between balance sum and bank's efficiency. We noticed reciprocal proportion, i.e. efficiency ratio gets better if balance sum grows. Relatively strong negative correlation (-0.77) is witness of it.

Despite of fact that researched subjects did not reach the best rating score (there are still reserves in the field of efficiency, cost management and credit portfolio) they can be considered as financially healthy and strong financial institutions with potential for further improvement.

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# EFFECT OF USEFULNESS OF MACHINES AND EQUIPMENTS ON USABILITY OF COST FUNCTION ON TPM

## VPLYV UŽITOČNOSTI STROJOV A ZARIADENÍ NA VYUŽITIE NÁKLADOVEJ FUNKCIE V KONCEPCII TPM

*Renáta TURISOVÁ – Miriam PEKARČÍKOVÁ*

### **Abstract**

A new trend in the field of maintenance and repair is TPM - Total productive maintenance. This new system provides a way to modernize maintenance in the enterprise, resulting in a decrease in both periods of downtime of the machine, but also decrease the cost spent on maintenance and repairs.

**Keywords:** Maintenance and Reparation, technical state evaluation, Total Productive Maintenance, utilization of machinery and equipment, costs

### **Abstrakt**

Jedným z najnovších trendov v oblasti údržby a opráv je koncepcia TPM - Total productive maintenance. Tento nový systém predstavuje spôsob modernizácie údržby a opráv v podniku, ktorý umožňuje skrátenie prestojov technických zariadení a strojov a zníženie nákladov na údržbu a opravy.

**Kľúčové slová:** údržby a opravy, hodnotenie technického stavu, Total Productive Maintenance, využitie prístrojov a zariadení, náklady

### **Introduction**

Maintenance is a summary of activities that are providing technical capability and efficiency of machinery and equipment operation. It includes technical inspection, treatment, supplement or replacement of lubricants. Normally, it is carried out without parts dismantling and components changing. Repair is a summary of activities, which are removed due to mechanical damage, depreciation of a unit, group or parts of equipment and machinery. Repairing means renewing regular functions, while nominal dimensions of parts, as are in newly equipment, do not need to be retained. Mechanical equipment may be upgraded, modified so as to replace some parts with the technically better solution to improve or expand their amenities. Reconstruction is such interference, which results in a change of purpose and technical parameters. It may have the nature of conversion and substandard modification. These changes usually alter the value of equipment and that must be taken into account.

Modernization is closely related to the notion of reconstruction that, unlike modernization, changes the original character of the machine (e.g., reconstruction of the universal machines to dedicated or special machines, respectively). Machines or equipment may be modernized and adapted to replace some parts with the technically better solution to increase or expand their amenities.

## **1. Evaluation of the technical condition of machinery and equipment**

Machinery and equipment is used to carry out certain functions associated with meeting societal needs, whether as in means of production, or to satisfy some individual needs. It is also the goods and as such has a utility and exchange value.

*Utility value* depends on the technical characteristics of the product. Is higher as the product is more sophisticated and the longer their properties are well maintained for use. However, the product will meet the needs only if it is functional, operational and reliable in operation.

*Operational reliability* depends on excellence in design, quality and execution of manufacturing and assembly, an operational nature, adherence of prescribed operating conditions, quality of servicing, maintenance and repairs. It is defined as a general characteristic of products to meet required functions during specified period of time while maintaining the operating parameters. Variables, which characterize operational reliability and operating conditions, are mostly random nature and therefore to examine their patterns it is necessary to use mathematical methods, probability theory, theory of random processes and mathematical statistics. Estimations of parameters of these variables are based on values that are obtained by collecting information during the operation of the product. This method is used when constructing a new product, particularly in determining his operating life [4].

*Operating life* can be defined as a characteristic of the product to perform its function to the breaking state of technical and operational conditions. In numbers the operating life is indicated converted to the operating hours or mileage when vehicles. Sometimes the technical level of construction is also taken into account, which represents the "moral life" [4].

Required values of life are fundamental parameters that indicate the design of a new product. If there is a failure in most important parts of the structure, we can talk about the technical end of operating life throughout the structure. The mere failure is just the final and apparent stage of the process of breach of the part, which began earlier, in the essence of putting the product into use. Operating life of functionally identical parts is not the same for all products. Projected operating life is a characteristic of quality and utility value of product and is then reflected into the price. Prerequisite for achieving the expected

operating life is to meet all requirements of the designer by manufacturer (production quality), installation, control and user, i.e. compliance with prescribed operating conditions.

Also the concept of *economic life* is known, often based on operational inefficiencies, as manifested by significantly increasing operating costs, i.e. costs for energy, maintenance and repairs etc. This cost increase occurs due to poor technical condition of the product as the product achieved marginal product condition, characterized by the occurrence of many failures and a high degree of depreciation of its parts, which are signs of the end of the technical life. Thus, the economic is just another expression of the technical lifetime.

Although operational life is one of the most important features of the machine and equipment, expressing its operational reliability, we cannot forget to include other features, such as reparability and operational readiness.

*Reparability* is given by structure feature, which itself must allow repairs (provided with sufficient spare parts to perform repair, created technical and organizational terms as a service network, technological equipment of services, level of repair technology, etc.).

*Emergency* in operation is substantially dependent on reparability; it can be characterized by the number of failures, repair time and time order.

Maintenance affects the economy of business (e.g. construction business) in three ways:

1. repair time directly affects the utilization of equipment;
2. quality of repairs underlies not only performance, but also time-use of devices, and thus the volume of work;
3. maintenance significantly burden costs of production and significantly affects the productivity of labor, because the share of the maintenance staff of the total number of employees is 1 / 5 to 1 / 3.

## **2. Statistics in maintenance**

Operational reliability as a systematized set of regulated properties provides smooth, safe, economical and environmental performance of facilities. Among major features of reliability belongs failure-free, durability, maintainability and reparability, readiness with their basic indicators and metrics. The basic parameters include: time to failure, time between failures, the frequency and duration of disorder, frequency and duration of repairs, the equipment total usable time fund, the total downtime, downtime by way of repairs, unscheduled maintenance downtime, and possibly additional other indicators.

Comparing by the means of key metrics is one of the most important tools for managing the maintenance and continual improvement in advanced maintenance systems. The most commonly used statistical and managerial

methods and techniques for measuring, analyzing and improving the quality of maintenance processes include:

- *Brainstorming* - the collection of information, ideas and engagement of wider range of employees in the analysis of important and less well-known problem, sorting brainstorming ideas using Ishikawa diagram.
- *Ishikawa diagram* - within the decomposition and analysis of important and less well-known problems; in analysis using FMEA method.
- *Analysis of potential errors and their consequences (FMEA - Failure Mode and Effect Analysis)* - to address the most critical factors; to assess potential failures and their consequences in order to identify effective measures to eliminate the cause, in determining the optimal dose of care, to explore the effect of measures taken and to track consequences of improvement.
- *Flowcharts* - are used mainly in the internal norms and regulations to describe processes.
- *Pareto analysis* - an evaluation of failures and downtime, to depict graphically aggregates and facilities with most failures.
- *Time series with trends* - pointing and tracking adverse events and development of breakdowns and downtime, in the pursuit of cost, for monitoring production and renovation, etc.
- *Shewhart control charts* - in the calculation of facilities capability indices  $C_m$  and  $C_{mk}$ .
- *Benchmarking* – within the set of key metrics, in much access to internal.
- *Statistical sampling* - in managing the quality of repairs, in input control.

### 3. Cost of TPM

Specificity using TPM, for example in the construction business, is in heterogeneity and seasonality of construction work. Unlike engineering business where machinery is used constantly, in construction activity not only seasonality plays a major role, but especially the diversity of technologies used. This makes that the machinery in construction enterprises are not used uniformly both within individual months of the year, but also to individual buildings. Construction company then faces a decision what machinery and equipment is necessary to purchase and thus have it available, and what equipment is better to lease. In economic terms, the costs of machinery then consist of the acquisition and maintenance of equipment purchased by the company, respectively the leased equipment maintenance is incorporated in the price of lease. Costs of lease are orderly higher than the cost of purchased machinery. Optimizing the purchase of these devices is complex while the contractor normally cannot predict what technologies will be used for construction in perspective of next three years. This often causes that the equipment and machinery is fully

extracted in the first year on one construction site, but in the coming years are unusable for other construction projects because they are built using other technologies. Therefore optimization and usability of each purchase of machinery and equipment is in construction companies one of the main attributes of TPM. For this optimization, it is appropriate to use statistical analysis of the existing machinery and equipment exploitation associated with projections of future developments, where time series analysis and forecasting are used. In practice use of forecasting in fullness of individual machines and equipment already in the process of preparation and approving the project has particularly proved. Another very successful element is the cooperation of several construction businesses, respectively establishment of joint venture providing sales, rental and maintenance of construction machinery and equipment. Despite these measures, the utilization of machinery and equipment in construction enterprises is often around 15%.

#### 4. Case study

We will show an increase in utilization of construction machinery on the example of unnamed construction company, where in the first phase of TPM evolution of the usability analysis of machinery was performed (see Fig. 1).

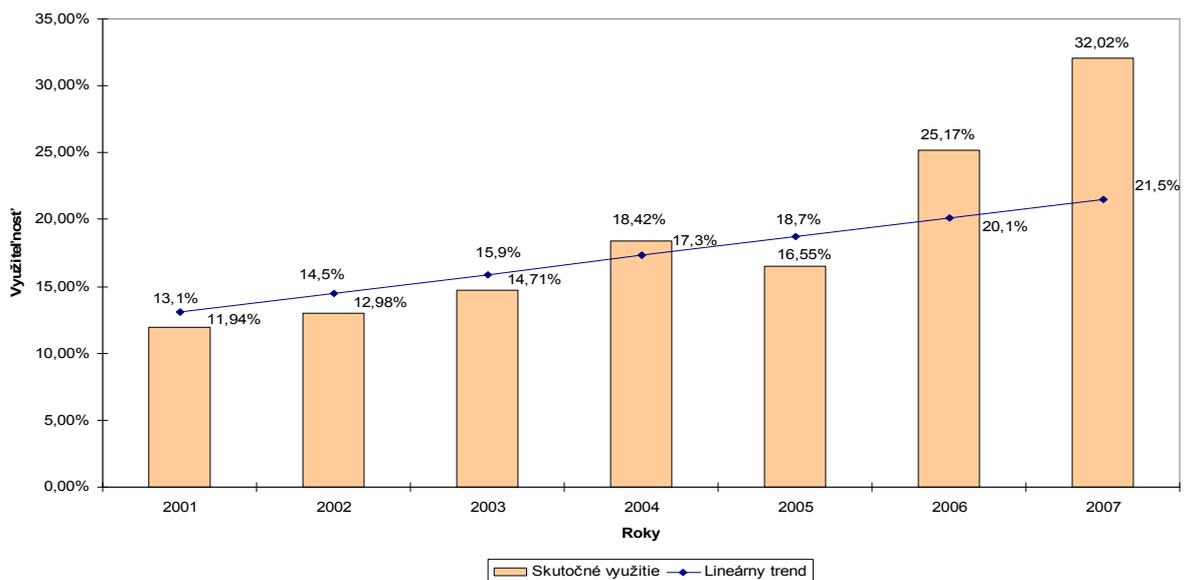


Figure 1  
Histogram of usability of the machinery in construction company

Proven improvement of usability has a direct impact on TPM cost. Devices that construction company sold because of its low utilization has in fact no need for further maintenance. Long-term follow-up of machinery utilization allowed us to select accurate amount of long term underused machinery. It was

not only the economic analysis of cost and return on investment, which is particularly common with expensive equipment. Using TPM analysis of usability the following attributes are also taken into account:

- long-term need for machinery,
- availability of machinery and lease conditions,
- technologies for the expected future buildings,
- assortment composition and optimal quantities within a range,
- timing of the use of similar technologies in parallel construction sites;
- failure of machinery and maintenance costs;
- moral depreciation of machinery.

Linking TPM approach and economic analysis of the existing situation, as well as long-term experience gained through observation allows optimizing the quantity and range of equipment already at their purchase. With a simple Pareto analysis (see Fig. 2) it is possible to determine the most and least used equipment.

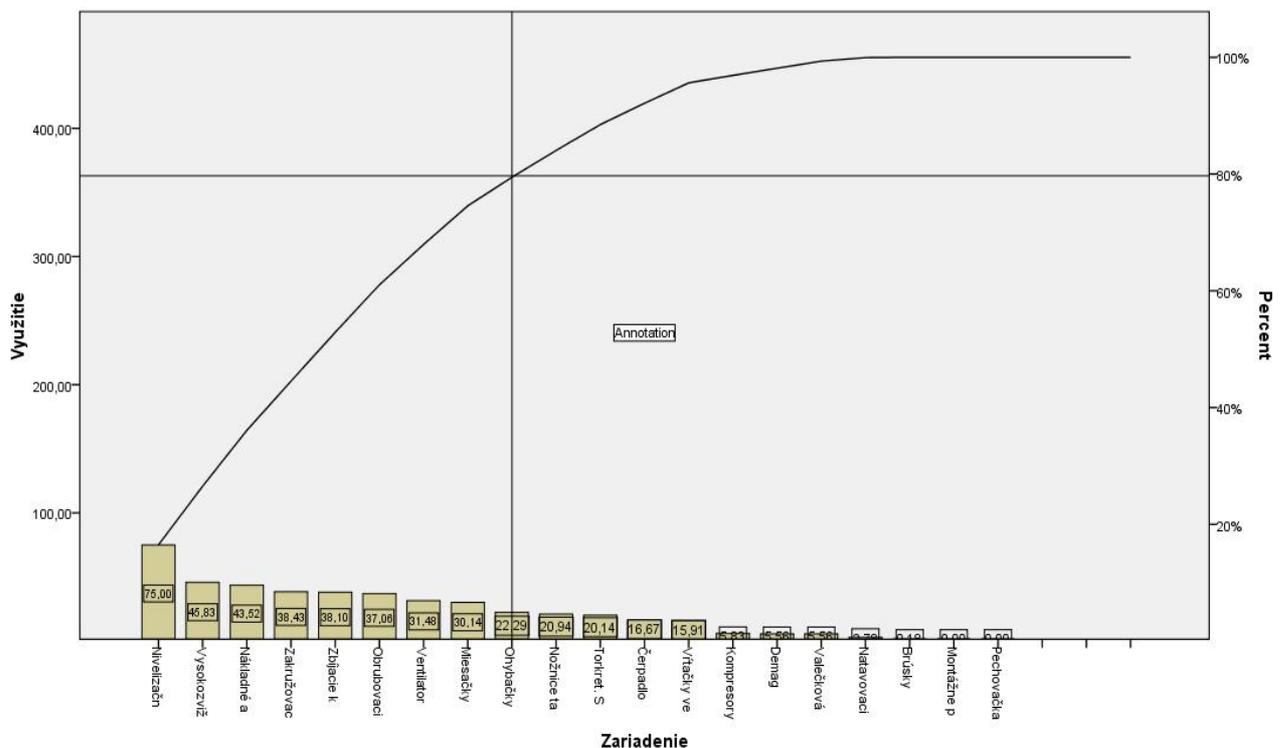


Figure 2  
Pareto diagram of usability of the machinery in construction company

Unused equipment, which represents the high number in assets, is leading to a simple reduction in frequency. It is mindful of the TPM approaches to be seen from all the attributes listed. In the case of unused equipment, which represents a small number in assets, the issue of their substitutability, availability, respectively lease is also addressed (see Fig. 3).

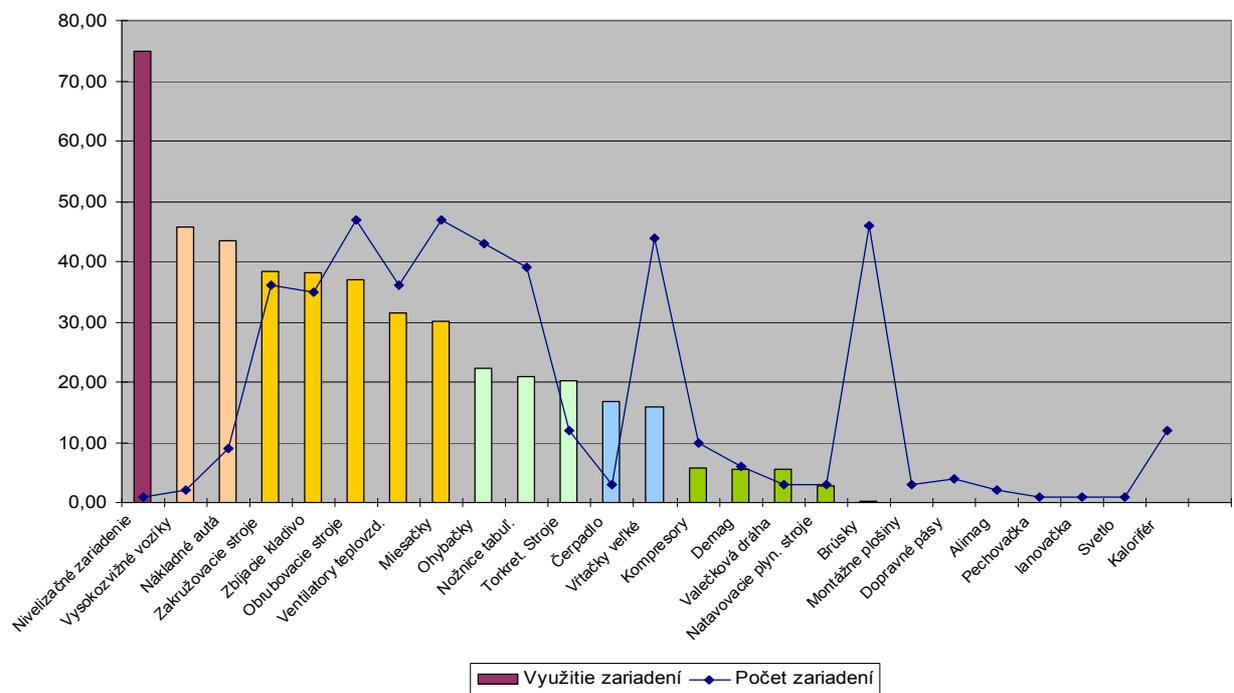


Figure 3  
Diagram of usability of the machinery

## Conclusion

The aim of maintenance is not only to prevent, respectively remove physical depreciation, but also to try to eliminate moral depreciation through modernization, thus improving the technical and functional characteristics of the machine in order to improve its performance and efficiency, prolong its life, increase safety, etc. Moreover, the economic view of the anticipated benefits associated with the use of this machinery cannot be obtained only by depreciation or other economic approaches. Based on the experience of implementing this approach in practical terms of the construction company we found significant qualitative improvement of efficiency, than the classical TPM.

*This contribution was prepared to address the role of the grant VEGA 1/0052/08 System approach to streamlining work processes in manufacturing enterprises.*

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