

**2010.
3**

ECONOMIC THEMES

Niš, 2010.



godina XLVIII

YU ISSN 0353-8648

ECONOMIC THEMES

Published by:

Faculty of Economics Niš

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Economic themes was partly financed by

Ministry of Science and Technological Development of the Republic of Serbia

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ISSN 0353-8648 (Printed issue), ISSN 2217-3668 (Online) SD 1990; UDC 33; ID 1117795

FACULTY OF ECONOMICS NIŠ

**ECONOMIC THEMES
YEAR XLVIII
No. 3**

Niš, 2010

EKONOMSKI FAKULTET NIŠ

**EKONOMSKE TEME
GODINA XLVIII
BROJ 3**

Niš, 2010.

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UNIVERSITY OF NIŠ
FACULTY OF ECONOMICS
"ECONOMIC THEMES"

Year XLVIII, N° 3, 2010, p. 331 - 343

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MULTI-CRITERIA DECISION-MAKING METHODS AS A TOOL FOR PORTFOLIO ANALYSIS OF INVESTMENTS

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Abstract: Globalization of financial markets, intensification of competitive relationships as well as constant social and technological changes in the last decades have brought about the increase in uncertainty in business and financial environment. Financial decisions have become more complex as well as importance of financial decision making. Regardless of a field of financial decision-making, the key problem factors are always risk analysis and risk management, financial market performance, resources allocation efficiency and market value. According to these factors, it is possible to make suitable multi-criteria models for various fields of financial decision-making.

Keywords: Portfolio Analysis, Multi-Criteria Model, ELECTRE

Introduction

Investors' constant dilemma over how to balance between higher earnings provided by various possibilities and higher risk taking due to exposure to hazards as well as the absolute domination of financial over physical investment, under contemporary business conditions, require knowing the fundamentals of portfolio theory and quantitative analysis at least. Namely, portfolio theory analyzes a series of alternatives, each representing a certain combination of financial guarantees (shares, securities, valuables, mutual funds, etc) called portfolio as well as the way in which investors express their preferences according to the mentioned alternatives, with the aim of selecting the most favorable portfolio among alternatives. Quantitative analysis should, however, offer the investor a model that

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UDK 336:51-7, Review paper

Received: 21.06.2010. Accepted: 08.09.2010.

measures a hazard the best and can transform it to a possibility necessary to achieve a compensation for hazard exposure [12, p. 151]. In other words, portfolio analysis implies selecting financial guarantees, with the aim of maximizing the investor's utility function. The process of solving the problem can be classified into two successive phases [5]:

1. Evaluation of available financial securities in order to form investors' highest preference portfolio,
2. Determination of the amount of capital that will be invested on the basis of defined securities in the first phase.

The problem of optimal portfolio selection that has been examined over the past fifty years underlies portfolio theory. The methods for solving this problem have been constantly improved. The history of its examination reveals its treatment as two-dimensional in terms of taking the two criteria, risk and turnover, as relevant. Generalizing the problem over the past years implies that multi-attribute portfolio analysis model includes these two relevant criteria.

Multi-Criteria Approach to Portfolio Analysis

In finance, from the early writings of Markowitz, the assumptions of portfolio selection have been clearly defined. In this regard, we will assume that the following problem elements are known [6]:

1. n different securities (shares, securities, valuables, mutual funds, etc),
2. Initial invested amount of money,
3. The beginning of a holding period,
4. The end of the holding period.

Let x_1, x_2, \dots, x_n be the weighting coefficients proportional to the value of the initial investment amount at the beginning of a holding period. Also, let r_i , $i = \{1, 2, \dots, n\}$ denote the random variable for the i -th security's return over the holding period. Then, the random variable (r_p), representing the percentage of the return on a portfolio defined by the r_i and some set of x_i over the holding period, is computed as follows:

$$r_p = \sum_{i=1}^n r_i x_i . \quad (1)$$

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As the value r_p directly depends on the random variable r_i , we can refer to it as to a non-deterministic value. Thus, it is not possible to determine at the beginning of the holding period what the value of r_p will be at the end of the period. This problem can be overcome by assuming that all the expected values $E\{r_i\}$, expected variance values δ_{ii} and expected standard deviation values δ_{ij}^2 for each n security in the model are known at the beginning of the holding period. Hence, we can conclude that the investor through portfolio analysis can protect himself/herself from low values of the coefficient r_p . The final aim of the analysis is selecting the alternative, i.e. the proper portfolio for which the expected value $E\{r_i\}$ will be as high as possible, and defined standard deviation of the variable r_p as low as possible. The expected value of the variable r_p is computed as follows

$$E\{r_p\} = \sum_{i=1}^n E\{r_i\} x_i, \quad (2)$$

and predicted standard deviation as

$$\delta^2\{r_p\} = \sqrt{\sum_{i=1}^n \sum_{j=1}^n x_i \delta_{ij} x_j}. \quad (3)$$

The set of values x_1, x_2, \dots, x_n must meet the condition:

$$\sum_{i=1}^n x_i = 1. \quad (4)$$

Also, depending on the conditions of the problem as well as the way of forming the model, lower and higher values of proportional wights can be attributed to investments.

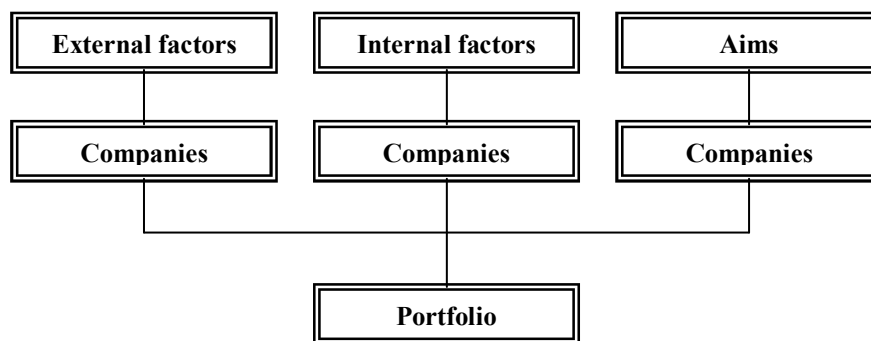
$$\underline{x}_i \leq x_i \leq \overline{x}_i. \quad (5)$$

Starting with the above relations, portfolio selection is conducted by maximizing the expected value $E\{r_p\}$, and minimizing the standard deviation $\delta^2\{r_p\}$ [4]. For solving the problem of portfolio analysis, different approaches and different multi-criteria analysis methods can be used. The

approaches to the investor's preferences can be from the aspect of multiple attribute utility theory, ranking relations, preference disaggregation or theory of robust sets. Multi-criteria analysis methods that are used for solving this kind of problems are AHP method and the group method ELECTRE. The most recognized portfolio analysis support system is the *software* HiPriority.

Multi-Criteria Problem of the Investor's Portfolio Selection

Let define the problem as a selection of companies that make the investor's portfolio. The problem implies the possibility of investing into 5 different companies that have the status of available alternatives in the model, and as many factors and criteria influence the selection of companies making the portfolio, the problem will be analyzed from the three possible aspects: the effects of external factors, effects of internal factors and meeting the investor's needs [9]. The problem will be solved through the method called ELECTRE I, and nondominated alternatives in the problem, i.e. the companies that should correspond to nondominated alternatives, represent those to be selected for the portfolio. The structure of the described problems is given in Picture 1.



Picture 1: Structure of the Investor's Portfolio Selection Problem

The external factors are the group of factors that influence externally the company's business, while the company has no effect on them. In the analysis of external factors, the decision-making matrix coefficients represent the sensitivity of the company to the above factors, i.e. their quantified effect on the company's business. [10]. There are four basic groups of external factors that will be analyzed in the problem: economic, political, social and technological factors. Mutual importance of the factor groups is determined by the following weighting coefficients:

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<i>External factors</i>	Economic factors	0.40
	Political factors	0.20
	Social factors	0.20
	Technological factors	0.20

Relevant criteria representing the effects of that factor group on the company's business will be determined within each group.

The effects of external economic factors are represented through: offer elasticity, demand elasticity and possibility of foreign investments. All the mentioned criteria are of the previous type and the attributes representing companies in the mentioned criteria are the coefficients of offer elasticity and demand for company's product, i.e. the planned amount of foreign investments into the sector the company belongs to. The importance of these criteria for determining the effects of external economic factors is evaluated in the following manner:

<i>Economic factors</i>	Offer elasticity	0.40
	Demand elasticity	0.40
	Foreign investment	0.20

To summarize, the contribution of a concrete criterion to understanding the effects of all external factors is computed as the product of weighting coefficients of a concrete criterion and factor group it belongs to [3]. For example, the importance of the external factors' effects on offer elasticity is defined as the product of weighting coefficients of the criterion (0.40) and the weighting coefficient of the group of economic factors (0.40). Thus, the summerized weighting elasticity coefficient is equal to $40 \times 0.40 = 0.16$. In the same way, the established values of all weighting coefficients in the problem will be established.

The effects of political factors are analyzed by means of two criteria: state subvention and international agreements. State subventions are defined as a qualitative criterion. Their effect is defined as the amount of subventions to the company's branch planned within the budget (let the amount be expressed in € mil.). International trade agreements made by the state affect the company's business through the increased possibility of benfital import of a cretain product. The criterion is expressed in the Likert-type scale, with values ranging from 1 to 9. The least favorable import possibility of a production branch that the company belongs to are denoted as 1, and the

most preferred conditions as 9 [2]. These measuring scales are used for calculating values of all qualitative attributes in the model. The mentioned criteria are of the previous type and their importance for determining the effects of external political factors is:

$$\text{Political factors} \begin{cases} \text{Subventions} & 0.30 \\ \text{International cooperation} & 0.70 \end{cases}$$

Social factors affect the company's business through: social giving and possibility of social conflicts. The effects of social giving is represented through the amount the company must pay on the basis of currently prescribed social programs. (the amount expressed in CSD millions). Social conflicts, i.e. estimated risk involving strikes and other kinds of the obstructions to the company's business is qualitatively expressed. The mentioned criteria from the perspective of the investor's interests are of expenditure nature. Their importance for determining the external social factors is the following:

$$\text{Social factors} \begin{cases} \text{Social giving} & 0.50 \\ \text{Social conflicts} & 0.50 \end{cases}$$

The effects of technological factors belonging to a group of external factors is expressed through: the technological development level of production capacities and technological development level of the production branch companies belong to. The criteria are of qualitative character, with the aim of achieving the highest possible development level, i.e. they are of the revenue type. Their importance for valorizing the effects of external technological factors is defined as follows:

$$\text{Technological factors} \begin{cases} \text{Technological development of capacities} & 0.40 \\ \text{Technological innovation of products} & 0.60 \end{cases}$$

Based on the given data, it is possible to form the matrix of decision-making grounded on the effects of external factors on the selection of companies comprising the portfolio (Table 1).

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Tabela br. 1: Decision-Making Matrix for External Factors

	Economic factors			Political factors		Social factors		Technological factors	
Relev. criteria	Off. elas	Dem-and elas.	Forei invest	Subv.	Intern. agreem.	Social givin.	Soc. confl.	Techno. devel. capac.	Techno. produc. capac.
Type of criteria	max	max	max	max	max	min	min	max	max
Weight coeff.	0.16	0.16	0.08	0.06	0.14	0.1	0.1	0.08	0.12
A	0.52	0.60	2, 320	980	7	39	5	7	5
B	0.36	0.32	1, 920	870	3	35	1	5	3
C	0.75	0.78	2, 659	925	9	32	3	9	7
D	0.58	0.55	2, 113	645	5	41	7	5	5
E	0.44	0.40	1, 350	450	1	38	5	3	1

By applying the ELECTRE I method procedure (according to [11]), we obtain the following results. After establishing preference normalized matrix as well as the matrix of agreement and disagreement F , we determine the matrix of agreeable and disagreeable domination. To summarize, the matrix of aggregate domination E^{EF} is:

$$E^{EF} = \begin{bmatrix} - & 0 & 0 & 1 & 1 \\ 0 & - & 0 & 0 & 1 \\ 1 & 1 & - & 1 & 1 \\ 0 & 0 & 0 & - & 1 \\ 0 & 0 & 0 & 0 & - \end{bmatrix}$$

ELECTRE I is the method providing a partial order of alternatives, i.e. the obtained results reveal the mutual relation of alternatives, classifying them into dominated and nondominated [7]. When it comes to the issue of portfolio analysis, the nondominated alternatives i.e. the companies represented by the nondominated alternatives are the companies to be invested in. By analyzing the matrix of aggregate domination, we can conclude that, from the aspect of external factors, the company C dominates among the companies. Hence, from the first examined aspect, the company C is the company one should invest in. This company, along with those that will be determined on the basis of the effects of internal factors and aims of investors, makes the portfolio.

Internal factors represent the operative characteristics of the company. Research has revealed that they can be considered as a measure of

how successfully the company does business and makes decisions. In other words, these factors represent a competitive capability of the company. Relevant internal factors in the example are: company's economic efficiency, company size and production technology. Their importance for determining the effects of internal factors is evaluated in the following manner:

$$\text{Internal factors} \left\{ \begin{array}{ll} \text{Economic efficiency} & 0.50 \\ \text{Company size} & 0.30 \\ \text{Technology} & 0.20 \end{array} \right.$$

Company's economic efficiency is reflected through: realized revenue, created production costs and company's share in the market. The revenue and costs are expressed in CSD millions, and the share in the market represents the procentage share of the company in the market and represents a criterion of the revenue type. The importance of the mentioned criteria for detrmining the effects of the company's economic efficiency is the following:

$$\text{Economic efficiency} \left\{ \begin{array}{ll} \text{Revenue} & 0.35 \\ \text{Costs} & 0.35 \\ \text{Market share} & 0.30 \end{array} \right.$$

In this example, the following criteria are selected for expressing company size: the number of production line and value of production capacity (in CSD millions). Both criteria are of the revenue type and their importance for evaluating the company is determined by the following weighting coefficients:

$$\text{Company size} \left\{ \begin{array}{ll} \text{Number of production lines} & 0.30 \\ \text{Capacity value} & 0.70 \end{array} \right.$$

Technological level of the company is determined through: product quality, and age of production lines. Product quality is a qualitative criterion of the revenue type. The age of production lines represents the number of years that the production line has been exploited. From the aspect of technological obsolescence, this is the criterion of the expenditure type. The importance of these criteria in evaluating the company's technological development is the following:

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$$\text{Technology} \begin{cases} \text{Product quality} & 0.60 \\ \text{Production line obsolescence} & 0.40 \end{cases}$$

Based on the given data, it is possible to form the decision-making matrix of internal factors' effects on company selection for the portfolio (Table 2).

Tabela 2: Decision-Making Matrix of Internal Factors' Effects

	Economic efficiency			Company size		Technology	
Relev. criteria	Revenue	Costs	Market share	Num. of prod. lines	Capacit.	Product quality	Age of produc. line
Criteria type	max	min	max	max	max	max	min
Weight. coeff.	0.175	0.175	0.15	0.09	0.21	0.12	0.08
A	5, 978	2, 323	0.06	26	1, 350	9	1
B	3, 588	1, 745	0.02	18	1, 100	5	5
C	4, 296	1, 669	0.04	12	989	7	4
D	3, 732	1, 921	0.03	15	895	5	6
E	4, 551	2, 311	0.05	13	1, 042	3	8

The aggregate matrix of domination E^{IF} is:

$$E^{IF} = \begin{bmatrix} - & 1 & 0 & 1 & 1 \\ 0 & - & 0 & 0 & 0 \\ 0 & 1 & - & 1 & 0 \\ 0 & 0 & 0 & - & 0 \\ 0 & 0 & 0 & 1 & - \end{bmatrix}$$

One can conclude from the results that the nondominated alternative with many output flows is the one that corresponds with the company A. Namely, the company A, with its performance dominates over the companies B, D and E, and is not dominated by any other company at the same time. So, the company A will enter the portfolio, since it, to the greatest extent, meets the conditions of internal factors.

The aims of investors represent the values important to the investor, i.e. values that incited the investment. There are numerous aims the investor potentially wants to realize through the investment project. The relevant aims for this problem are the following: maximizing profit, reducing risk, and maximizing the turnover coefficient. The profit is expressed in CSD

millions, and risk as a qualitative criterion. The company the investment in which represents the lowest risk investment has been awarded the grade 1, and the company with the highest risk the grade 9. The importance of these criteria in achieving the investor's aims is revealed in the following weighting coefficients:

$$Investor's\ aims \left\{ \begin{array}{ll} \text{Profit} & 0.40 \\ \text{Risk} & 0.30 \\ \text{Turnover coefficient} & 0.30 \end{array} \right.$$

The formed decision-making matrix for selecting the company that will to the greatest extent meet the aims of the investor is given in Table 3.

Tabela 3: The Decion-Making Matrix for the Investor's Aims

Relevant criteria	Profit	Risk	Turnover coefficient
Type of a Criterion	max	Min	max
Coefficient weight	0.40	0.30	0.30
A	2, 447	7	0.67
B	1, 785	3	0.48
C	1, 992	3	0.28
D	3, 801	5	0.71
E	1, 345	1	0.33

The matrix of aggregate domination is:

$$E^{CI} = \begin{bmatrix} - & 0 & 0 & 0 & 0 \\ 0 & - & 1 & 0 & 0 \\ 0 & 0 & - & 0 & 0 \\ 1 & 1 & 1 & - & 1 \\ 0 & 0 & 0 & 0 & - \end{bmatrix}$$

According to the attained results, the only nondominated alternative corresponds to the company D, meaning that this company should enter the portfolio as a company with the highest preference viewed from the aspect of achieving the investor's aims.

By aggregating the results of the analysis of all three observed aspects, one can conclude that the investor's portfolio should include the companies A, C and D.

The analysis of the problem can be conducted by using some other multiple attribute decision-making. Assuming that all the three observed

Multi-Criteria Decision-Making Methods as a Tool for Portfolio Analysis of Investments

aspects are aggregated into a unique decision-making matrix, the problem has been solved by using the method of simple added weights. The two possibilities have been examined in the problem:

- The observed aspects are of equal importance and
- Aims of the investor, as a decision maker, are as twice as important than other observation aspects.

The role of each company in achieving relevant criteria of all the observed aspects in the problem is represented with the proper priority vector (Table 4).

Table 4: Priority vectors

Aspect ratio	Priority Vector	
	1 : 1 : 1	1 : 1 : 2
Company A	0,752467	0,710165
Company B	0,571664	0,551932
Company C	0,688877	0,623950
Company D	0,669161	0,691861
Company E	0,542832	0,552925

In the analyzed alternative solutions, the company A is the company that to the greatest extent meets the defined requirements. Therefore, it is evident that it will enter the investor's portfolio. As the issue of portfolio analysis implies that the portfolio, due to risk management, should include a number of companies, i.e. the investments in a number of companies, a conjunction requirement should be also added in terms of determining the lowest possible importance level of the alternative, i.e. the company, with the aim of forming the investor's optimal portfolio.

If we assume that the minimum prescribed value of the priority alternative vector is estimated as 0,60, then the companies making the portfolio are the companies A, C and D. Depending on the importance of the investor's aim aspects, the importance of the companies C and D in the portfolio differs. By normalizing the priority vectors of selected companies, we can establish their mutual relationship in the portfolio, i.e. the distribution structure of investment assets [1] (Table 5).

Tabela 5: Distribution Structure of Investment Assets

Aspect ratio	Normalized priority vector	
	1 : 1 : 1	1 : 1 : 2
Company A	0,3565	0,3505
Company C	0,3264	0,3080
Company D	0,3171	0,3415

In the case of equal importance of all the observed aspects, 35,65% of total investment assets will be invested in the company A, 32,64% in the company C, and 31,71% of the investment assets in the company D. If the investor's aims are determined as primary, and as twice as important than other aspects, the distribution of investment assets will be conducted as follows: 35,05% will be invested in the company A, 30,8% in the company C and 34,15% of investment assets in the company D.

Conclusion

Globalization of the financial environment and everyday changes impose the need for the appropriate information basis as well as sophisticated, analytical decision-making techniques that will enable making a correct and timely decision with a higher probability percentage. In that sense, the connection between financial theory and mathematical methods and models is stronger. The practice reveals that the optimization techniques, multi-criteria analysis, decision support systems, *fuzzy* logic, stochastic processes, simulation and other techniques have become the common means of financial decision-making.

Since portfolio analysis is related to decision-making under conditions that involve meeting various and frequently contradictory criteria, the multi-criteria analysis methods impose themselves as an important means in solving these problems. The choice of a method depends on problem characteristics of financial decision-making. It concerns first of all the methods that provide a partial of full ranking of alternatives, which automatically means that by using them, the relations and hierarchy of alternative investment decisions can be established.

References

1. Ehrgott, Matthias, *Multicriteria Optimization*, Springer-Verlag, 2000.
2. Fandel, G., and T. Gal. *Multiple Criteria Decision Making*, Springer-Verlag, 1997.
3. Figuera, J., S. Greco and M. Ehrgott, *Multiple Criteria Decision Analysis*. Springer, 2005.
4. Hababau, M. and J. M. Martel, "A multicriteria approach for selecting a portfolio manager", *INFOR* 36(3): 161-176. 1998
5. Hallerbach, W. G. and J. Spronk, "A multidimensional framework for financial-economic decisions", *Journal of Multi-Criteria Decision Analysis*, 11(3): 111-124. 2002.
6. Hallerbach, W. G. and J. Spronk, "The relevance of MCDM for financial decisions", *Journal of Multi-Criteria Decision Analysis*, 11(4-5): 187-195. 2002.

Multi-Criteria Decision-Making Methods as a Tool for Portfolio Analysis of Investments

7. Koksalan, M. and S. Zionts, *Multiple Criteria Decision Making in New Millennium*. Springer-Verlag, 2001.
8. Lootsma, F. A., T. C. A. Mensch and F. A. Vos, "Multi-Criteria Analysis and Budget Reallocation in Long-term Research Planning", *European Journal of Operational Research* 47: 293-305, 1990.
9. Ma J., Q. Zhang, Z. Fan, J. Liang and D. Zhou. "An Approach to Multiple Attribute Decision Making Based on Preference Information on Alternatives", *34th Hawaii International Conference on System Sciences*, 2001.
10. Rogers, M. and Bruen, M. "A New System for Weighting Environmental Criteria for Use within ELECTRE III", *European Journal of Operational Research* 107 (No. 3): 552-563, 1998.
11. Triantaphillou, Evangelos, *Multi - Criteria Decision Making Methods: A Comparative Study*, Kluwer Academic Publishers. 2000.
12. Aswath Domodaran, *Korporativne finansije*, MODUS, Podgorica, 2007.

METODE VIŠEKRITERIJUMSKOG ODLUČIVANJA KAO SREDSTVO ZA ANALIZU PORTFOLIA INVESTICIJA

Rezime: Globalizacija finansijskog tržišta, intenziviranje konkurentskih odnosa, kao i neprestane socijalne i tehnološke promene poslednjih decenija, dovele su do povećanja stepena neizvesnosti i nesigurnosti u poslovnom i finansijskom okruženju. Finansijske odluke postaju sve kompleksnije, a samim tim i značaj finansijskog odlučivanja. Bez obzira na oblast finansijskog odlučivanja kojoj pripadaju, ključni faktori problema su uvek analiza rizika i upravljanje rizikom, performanse finansijskog tržišta, efikasnost alokacije resursa i tržišna vrednost. Rukovodeći se ovim faktorima, moguće je formirati odgovarajuće višekriterijumske modele za različite oblasti finansijskog odlučivanja.

Ključne reči: portfolio analiza, višekriterijumski model, ELECTRE



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Year XLVIII, N° 3, 2010, p. 345 - 354

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MANAGING THE VARIATIONS IN TIME, QUALITY OF REALIZATION AND OUTPUTS OF ACTIVITIES WITH THE AIM OF INCREASING EFFICIENCY OF BUSINESS PROCESSES

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Abstract: *The aim of this paper is to point out the necessity of continual processes' performances evaluation how "weak" points could be discovered and inefficient processes changed into efficient ones. The inefficient processes provoke unproductive resources' usage and unnecessary addition of costs. Usually, there are few activities (as parts of processes), which cause the processes' inefficiency. In order to discover them, managers should observe processes, measure their performances, and analyze the results of measurement. Common causes of inefficiency are variations in time, and in quality. Mapping and analyzing processes show managers where, and what is more important, why variations appear, so they could take actions for their elimination and for providing desired standard level of processes' performances. The final aim of processes' improvement is raising economic efficiency and, enterprise's competitiveness level.*

Keywords: *processes, performance, variations in process performance, time necessary for activity' realization, performances of quality, process effectiveness and efficiency, competitiveness of the firm.*

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UDK 65.015.25, Review paper

Received: 23.06.2010. Accepted: 08.09.2010.

This paper is a part of research project No. 149052 financed by the Ministry of Science and Technological Development of the Republic of Serbia.

Introduction

An enterprise's competitiveness can be provided if it continuously improves key competences and if it incorporates them in innovated product and services adapted according to dynamic of market demands. Those enterprises do not have an easy task. They need to find what their competencies are and how they can be transformed into competitiveness. Today, being competitive means taking care of every aspect of business in order to accomplish tasks and fulfill objectives of all stakeholders. Capital owners demand certain yield to invested capital. This yield can be provided only if customers are buying enterprise's products or services. This will happen if customers' demands, concerning products' or services' quality, time of delivery and price, are fulfilled in an efficient way. This implies continual communication with customers and efficient business processes. Processes will be performed efficiently if employees have a proper knowledge and skills. Previously mentioned represents "Balanced Scorecard" concept [1, 2], which observes business from four following perspectives: a) "financial perspective", b) "customers' perspective", c) "internal processes' perspective", and d) "learning and growth perspective".

Consumers' demands (quality, time, cost/prices, flexibility / variety of products) represent key competitive priorities for any enterprise. Enterprises usually choose one or two groups of demands through which they try to provide competitive advantage. However, enterprises, with the ambition to survive in the market arena for a long time, have to try to fulfill all customers' demands. It is not an easy task; an enterprise must tend to realize desired financial performances and meet the conditions for future growth and development.

The perspective of internal processes is crucial for providing products and services that customers demand, and therefore for providing financial results. It affects financial results in two ways: first, by revenue through customers' perspective, and second, by costs originated from production. Positive effect on financial result will appear if revenue grows and costs decrease. Revenue will grow if existing customers are retained and new ones attracted. These will happen if product quality is improved and delivery time reduced. Costs will decrease if every activity is performed well first time, if corrections are not needed, if defects do not appear. Concerning both a revenue and costs, managers should look for an answer in processes' efficiency.

Processes' efficiency, to a large extent, depends on variations in activities' quality. Variations cause lower quality, longer processing and delivery time, and finally, higher costs. This means that variations influence

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all customers' demands and therefore enterprises' competitiveness. In order to increase enterprise's efficiency managers have to accept process approach to enterprise's management [3, p. 40-47].

1. Identification of Appearance and Scope of Variations as a Factor of the Process Efficiency

Variations in processes' performances can be defined as deviations of real level of performances from planned (standard) level. By comparing and quantifying the relation between real and planned performances lead managing to indicator of *process effectiveness*. Actually, it is about the effectiveness of achieving the target processes' performances level. Process effectiveness measuring success in achieving the process objective defined as certain process performances or result, effect, etc. "*Process efficiency* is usually measured as ratio of process input and process output" [4, p. 420].

Variations in time refer to deviation in time needed to realize certain activities, while other category refers to deviations in quality of activity realization. Both variation categories reflect on the inventory level and capacity usage level and, consequently to the level of costs and customer satisfaction.

Time variations imply higher inventory level in the time of activity that lasts longer than it is planned. Although managers always try to justify the presence of inventory by explaining that they represent "necessary evil". Inventory is not only factor of processes' efficiency, but also a significant factor of financial performances. Concerning connection of internal processes perspective and financial perspective presented by "Balanced Scorecard", it is obvious that everything that happens inside the processes influences the financial health of enterprise. There are very small chances for complete elimination of inventory, because certain level of inventory (so called safety inventory) is necessary for some processes. However, the intention of managers has to be continual reduction of inventory. For that purpose, just-in-time concept and especially "Kanban" method can be very helpful. Inventory management is very significant in the enterprises that have problem with a lack of capital, especially with a lack of long term capital. Instead of covering one part of working assets with a long-term capital, in some enterprises the situation is the other way around. It means that one part of fixed assets is financed from short-term sources of capital. The more expensive sources of capital mean additional financial costs, and consequently lower financial result. If this kind of situation lasts, it can lead to equity decreasing which means that enterprise has destroyed the value. In order to prevent or improve this kind of financial situation, managers have to

improve processes continually. Thus, inventories can be decreased or totally eliminated if variations are constantly controlled and regulated by appropriate action.

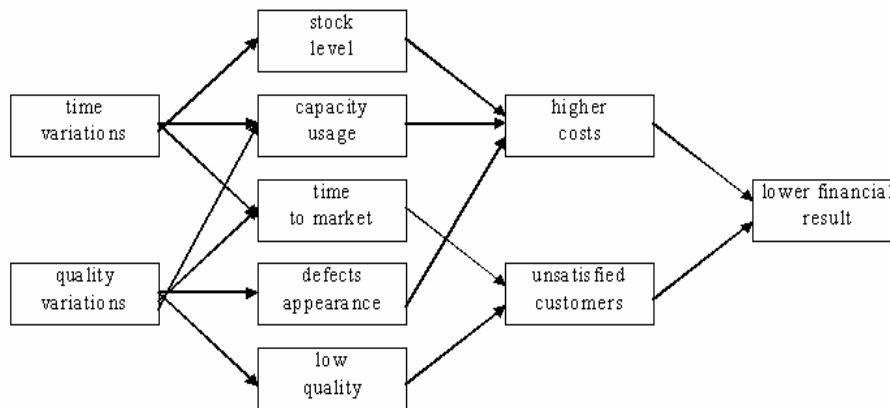
Time variations also cause unused capacity of the next resource (machine) in the process flow. This causes decreasing of processes' capacity and efficiency. It can be seen if one compares the real and planned output size or the real and planned time of processes' realization. If the mentioned relations are smaller than one, it means that processes' activities are performed with time variations. If there is more time variations, the process will be slower and time to market longer. Through unused capacity, time variations affect unit costs, which can make output price uncompetitive, and/or financial result. The longer time to market and increased price make customers unsatisfied.

Quality variations can lead to the appearance of defects and, consequently demand repetition of some activities. This repetition means that process will last longer and that its output will be more expensive. In some cases, defects can't be repaired so costs for their production represent lost costs, which negatively affect the financial result. Quality variations also negatively affect processes' capacity, because the time that should be used for new outputs' production is used for repetition of activities on the defect ones. Quality variations can mean that products will be defective, but sometimes they can mean that products will not be defective, but not good enough for customers. This happens when product characteristic are inside specification limits, but far away from desired value. In that case, products cannot be considered as defective, but customers' satisfaction will not be complete. If this situation lasts, it will be hard for managers to make customers loyal.

Concerning that variations, in time and/or in quality, make processes less efficient and more expensive, products uncompetitive and customers unsatisfied, managers have to dedicate themselves to variations management. Time variations have negative effects on inventory level, capacity usage, and time of realization (delivery) of process results. On the other side, consequences of quality variations are appearance of defect units, longer time of process realization and delivery lower level of capacity usage. All mentioned leads to higher costs, unsatisfied customers and finally, low financial result (Figure 1).

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Activities with the Aim of Increasing Efficiency of Business Processes**

**Figure 1 Managing variations - effects of variation in time, and quality/quantity
output of activity (process)**



Concerning that a process consists of mutually connected activities, the following pages show how time and quality variations reflect on the process efficiency, in the sense of unused capacity, on one side, and higher inventory level and bottleneck, on the other side.

2. Harmonizing the Activities' Flow as a Consequence of Time Variations and Quality of Operating Activity

Operations or activities, as parts of a process, represent connected events, because performing of one activity is condition for performing of others. As mutually connected, activities should be harmonized, and it implies application of one of “Goldratt principles” [5]. These principles point out that the flow of activities should be harmonized, and not capacities of resources by which activities are performed. An insistence on flow balancing appears as a consequence of variations, which are usually called statistical variations, because they can be measured and analyzed with statistical tools and methods.

Usually, when we talk about time necessary for performing an operation (activity), average values are presented and analyzed. However, average values can hide defects and distort the real situation. For that reason variations in performing activities should be measured and analyzed. Variations in time or quality usually provoke insufficient capacity of some resources, and unused capacity of the others.

The next example should illustrate the previously mentioned. From Table 1, it can be seen that process's realization time (when it consists of two activities, "A" and "B") due to variations is extended from 108 to 114 minutes, and that in some moments there is inventory in front of resource (machine) at which the second activity ("B") is performed, and also that there are some moments when this resource is not used (unused capacity). For simplification, it is supposed that variations in processing time exist only for first activity ("A"), while the processing time for the other activities is constant [6].

Table 1- Performing time for activities "A" and "B"

serial number of units (series)	beginning time of processing activity "A"	processing duration of activity "A"	completion time of processing activity "A"	beginning time of processing activity "B"	processing duration of activity "B"	completion time of processing activity "B"
1	0	22	22	22	18	40
2	22	20	42	42	18	60
3	42	18	60	60	18	78
4	60	16	76	78	18	96
5	76	14	90	96	18	114

From Table 1, it can be seen that average-processing duration for both activities is equal (18 minutes). However, for the second activity this duration is constant, while for the first activity it is changeable, which means that this activity has time variations. Because of variations in processing time of activity "A", in some moments resource at which activity "B" is performed has unused capacity (at second unit or series), while in some moments in front of this resource there is inventory (at fourth and fifth unit or series). If the process has two activities only and lasts 6 minutes longer (5.56%), what will happen with the processes, which have more activities? The first conclusion is the larger a number of activities, the greater chance for extending the processes. The second conclusion is in following: variations are undesirable, and they have to be reduced or eliminated.

3. Management of Level Capacity Utilization of Process Resources

As it has been shown, besides inventory level, time variations influence resource utilization. Total utilization implies a full or continual utilization of all resources. This means theoretically maximal, but practically non-achievable capacity usage level. That is why it is called the "naive", or "utopical" level of capacity usage. Concerning that this, naive balance, is very hard to achieve, more feasible is balanced utilization or simple balance. Simple balance means that all resources are equally loaded, but below 100%. This means that every resource has equal chances to limit the process or that

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every resource has the same criticality, defined as the frequency at which the resource limits the process. However, in practice simple balance is very rare state. Concerning that, it is necessary to identify criticality level for every resource. The criticality level will show how often the specify resource can be limitation, and became bottleneck [7, p. 105-115].

If it is considered that sum of all resources' frequencies of criticalities is equal one (or 100%), then imbalance in resources' capacity usage can be measured by the difference between the highest and the lowest criticality in the process [7, p. 108]. When process has simple balance, this difference will be equal zero. If the lowest critically level is 10%, and the highest 70% imbalance will be 60% (70% - 10%) Imbalance can be regulated (decreased) by adequate management of limited recourses.

However, simple balance represents much better situation then 100% imbalance it should not be confused with economic balance. Economic balance exists when “throughput “is maximized. In order to identify economic balance it should be considered that economic value of future “throughputs” of the process is equal to investment necessary for the process realization [7, p. 107]. The assumption is that increasing the capacity of the resource, which has some (the greatest) level of criticality, will increase “throughput” of the process at the same percentage.

For example, the sum invested for providing all the resources necessary for the process realization is equal €2,500,000, and the part of this amount that refers to the “bottleneck” resource €1,000,000, while the criticality of the resource is 98%. If increasing of the capacity of resource (or decreasing of its criticality) for 1% demands additional investment of €10,000, the “throughput” will increase for €24,250 (97% from 1% from €2,500,000). In that chase, net present value will be €14,250 (24,250 – 10,000), and rate of return on investment 142.5% (14,250 / 10,000). Further decreasing of criticality will lead to further increasing of “throughput”, but digressively, which means that during time, net present value of investment will increase lesser and at some moment, it will not increase. At this moment, investment in decreasing criticality will be neutral. In this example, investment will be neutral when the resource reaches 40% criticality level [7, p. 105-115], which means that further increasing of its capacity is not reasonable. This situation reflects economic balance or economic level of capacity usage.

4. Possible Ways for Reduction of Variations in Process Performances

Variations can be very harmful to the financial situation of an enterprise, and the best way for the managers to realize this is application of

“Taguchi’s loss function” [8, p. 51-61]. The function shows the value that enterprise loses due to variations of key outputs characteristics, which customers notice and affect their satisfaction and loyalty.

The precondition for elimination of variations is monitoring the process from its beginning to its end. This implies process based management [9] instead of traditional, hierarchy-based management. Process based management demands determination of process owner, manager that will be responsible for its performances. Process owner differs from traditional function manager, because he “follows” process, no matter in which organizational unit its activities are performed. This is very good way for elimination unnecessary activities or activities that recur. In addition, this is very good way for discovering activities, which can be performed more efficiently, with less time and costs, and on higher quality level. These kinds of activities can be discovered only by composite usage of time, costs and quality measures.

Since time and costs measures have a long tradition, it is very important that managers accept quality measures, because they can provide valuable information for processes’ improvement. Most of quality measures and tools originate from statistics (average, variance, standard deviation). Among them, great significance has *statistical process control* and tools that it includes, like: control sheet, control charts, cause and effect diagram, Pareto diagram, scatter plot, process flow diagram, histogram, regression analysis. These tools can help managers to discover variations and causes of their appearance.

Most of the mentioned tools are connected, because information that provides one of them can be further analyzed by using the other. For that reason, it is necessary to group these measures and tools, according to information they provide and sequence of usage. Today managers in companies all over the world have introduced structured methodology, which became the standard for processes’ improvement [10, p. 132-138]. This methodology (“DMAIC”) shows what actions managers have to take and what measures and tools to use in order to find out weak points of processes that can and must be improved. “DMAIC” methodology helps managers to reduce variations, but what is very important to provide customers’ satisfaction and increase financial results.

5. Instead of a Conclusion

Process performance management assumes identification and analysis of variances. Actually, the deviations from planned target process performances are the object of management. In that sense, they are the object

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of intervention, analysis and permanent control. Time variation in performing of activities and variations in following: process quality, impact to inventory level, capacity usage, financial results and enterprise's competitiveness.

Economic balance respects the necessity for resources' capacity utilization, with an assumption that variations occur inside the processes. If the capacity utilization is viewed traditionally, then the aim of balance will be equal capacity of all resources in the process. This view can be explained with the term "naive balance". Variations (in time or quality) make some resources unused, while others represent bottlenecks. For that reason, variations should be measured and analyzed, but also actions for their elimination should be taken. Concerning that some variations can be predicted or eliminated, process managers must have them in mind when they design the process structure. That is why the flow should be harmonized, and not only the capacity of resources.

When bottleneck shows, managers must take actions for its elimination or reducing its effects on the output of process. That usually means the investment in increasing of the bottleneck resource capacity. If the "throughput" represents the rate at which process generates money through sales, the "throughput" should be the indicator of the investment relevance. When the additional "throughput" (because of investment) is equal to the invested sum it is a signal that any further investment for the resource's capacity increase (or reducing the resource criticality) is not payable.

References

1. Kaplan R., Norton R., *The Balanced Scorecard – Translating Strategy into Action*, Harvard Business School Press, 1996.
2. Niven P., *Balanced Scorecard Diagnostics - Maintaining Maximum Performance*, Wiley, 2005.
3. Krstić B., „Procesni pristup upravljanja preduzećem u funkciji povećanja njegove efikasnosti“, *Poslovna politika*, decembar, 2000, str. 40-47.
4. Krstić B., Sekulić V., *Upravljanje performansama preduzeća*, Ekonomski fakultet, Niš, 2007.
5. Goldratt E. M., Cox J., *The Goal: A Process of Ongoing Improvement*, Gower Publishing, Hampshire, 1993.
6. Chase R.B., Jacobs F.R., Aquilano N.J., *Operations Management for Competitive Advantage*, McGraw-Hill, New York, 2006.
7. Trietsch D., „From Management by Constraints (MBC) to Management by Criticalities (MBC II)“, *Human Systems Management*, IOS Press, 2005, pp. 105–115.
8. Anđelković Pešić M., „Taguchi-jeva funkcija gubitka – pokazatelj vrednosti kvaliteta“, *Poslovna politika*, Beograd, novembar, 2005, str. 57–61.

9. Krstić B., „Elementi i determinante upravljanja poslovnim procesima preduzeća“, u monografiji: *Upravljanje ključnim aspektima transformacije preduzeća*, Ekonomski fakultet, Kragujevac, 1999, str. 128-137.
10. Anđelković M., „Six Sigma kao nemilosrdan zahtev za perfektnošću“, *Ekonomika preduzeća*, mart-april, 2004, str. 132–138.

**UPRAVLJANJE VARIJACIJAMA U VREMENU,
KVALITETU REALIZACIJE I AOUTPUTIMA AKTIVNOSTI
U CILJU POVEĆANJA EFIKASNOSTI POSLOVNIH
PROCESA PREDUZEĆA**

Rezime: Cilj rada je da istakne neophodnost kontinuiranog preispitivanja performansi poslovnih procesa, kako bi se u njima otkrila tzv. "slaba" mesta i neefikasni procesi transformisali u efikasne. Neefikasne procese uglavnom karakteriše neproduktivno korišćenje resursa i nepotrebni, suvišni troškovi. U gotovo svakom procesu mogu se identifikovati aktivnosti koje ne stvaraju vrednost i prouzrokuju neefikasnost. Da bi identifikovali ove aktivnosti, menadžeri moraju kontinuirano pratiti performanse procesa, odnosno meriti ih i analizirati. Najčešći faktori neefikasnosti jesu varijacije u vremenu trajanja ili kvalitetu rezultata aktivnosti. Mapiranje i analiza procesa bi menadžerima trebalo da pokaže gde se i zašto varijacije javljaju, kako bi mogli da iniciraju korektivne akcije za njihovo eliminisanje i obezbeđenje željenih, standardnih nivoa performansi procesa. Krajnji cilj unapređenja performansi poslovnih procesa jeste poboljšanje ekonomske efikasnosti i konkurentske pozicije preduzeća.

Ključne reči: procesi, performanse, varijacije u performansama procesa, performanse vremena izvršenja aktivnosti, performanse kvaliteta, efektivnost i efikasnost procesa, konkurentnost preduzeća.



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Year XLVIII, N° 3, 2010, p. 355 - 368

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INFORMATION BASE FOR DECISION-MAKING IN ENTERPRISES WITH JIT SYSTEM

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Abstract: *The efficiency of management processes to a great extent depends on the development of information systems. Moreover, an integrated approach in the provision of financial and nonfinancial information by the accounting information system is the outcome in making appropriate business and financial decisions. This is especially important in companies with JIT system in which the high established goals are incentives for continuous improvements and achieving excellence in business. The paper just highlights the importance of an integrated approach in using financial and nonfinancial information as the basis for decision-making in companies with JIT system.*

Keywords: *information, decision-making, JIT system, a measure performance, financial and non-financial information*

Introduction

The goal of management of the company is effective targeting and efficient use of available resources. Careful and wise managing of the company includes the valuable anticipation of the companies' future, control of established planes execution and making individual business decisions.

Decision-making is incorporated into all phases of management process. Thus, in the planning phase the goals, directions and global development strategies, determining the ways and means to achieve objectives, choosing the best alternative, etc are decided. In the phase of organization the decisions to create the organizational structure, division of powers and responsibilities and the like are made. Phase control is a continuous process of making various decisions in order to achieve convergence and the plan or for the correction plan. Communication is the

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UDK 657.471, 005.7, Review paper

Received: 21.06.2010 Accepted: 08.09.2010.

phase of management processes that involves the transmission of instructions and information of importance for the definition and implementation of certain decisions, from the top management level to the parts of companies, groups and individuals and vice versa. Motivation is related to the decision-making on the construction of system of motivation and reward in order to harmonize the goals of parts and the whole enterprise.

In the following presentation we will first look at the concept of relevant costs for decision making, in order to then explain the use of an integrated approach to financial and nonfinancial information in companies with JIT system.

1. Decision-Making and Relevant Costs

The management activity of individual decision-making is related to additional investment cases and cases of ongoing efforts to use available resources in the best manner. Some of the typical decisions are linked to the production or purchase of, selling products at market price less than the total cost, the introduction of new products, the elimination or retention of existing products, processing and sale of semi-finished, change or retention of the existing relationship between the range of products, the introduction of new production line, leaving the existing product line, adding or eliminating functions within the organization, replacement equipment, investments in production equipment and the like.

In the process of decision-making the following steps are necessary:

- recognizing and defining problems,
- development and analysis of alternatives and
- selection and implementation decisions. [1, p. 108.]

Comparing current and desired state of a company generally is defined problem that then, by identifying factors that affect it, is defined in its specificity.

Developing alternatives is the process of proposing possible ways of changing the current situation in order to achieve the specified objectives through defining the problem. Recognizing new market opportunities, new technologies, competition can be made effective targeting and efficient use of resources companies.

Selecting the best alternatives and the creation of conditions for its realization is the last stage in the decision making process. Quantitative and qualitative information are necessary at the selection, with which combination the optimal solution will find.

Information Base for Decision-Making in Enterprises with JIT System

Finding the optimal solution implies the existence of qualitative and quantitative information. Within the quantitative information, costs have the important role.

To make the information relevant to a business alternative, they must meet the following requirements:

- must be different from one to the other alternative (differential costs and benefits) and
- must be related to the future.

Flexible set up cost accounting can help making business decisions in two ways:

- identifying business irrationality and referring to additional cost - benefit analysis, and
- the provision of certain information directly or by facilitating their obtaining other (non routine) analysis procedures. [2, pp. 436.]

The quality of accounting information for decision-making related to their relevance and reliability. Relevance indicates the adequacy of information to meet the specific needs of users in the content, scope and manner of preparation. It will be assessed and evaluated in terms of business flow prediction capabilities, processes and relationships, the possibility of their verification and correction, and in terms of timing. Reliability, as quality of information, contains truth, neutrality and the possibility of ratification. Additional qualities of information relate to the possibility of comparison in space and time and consistency (permanence) of the applied methods in the process of creating information.

Among the quantitative factors that influence decision making the most important are costs and benefits which is often a measure of gross income, but it is possible to express it in the costs savings. Costs vary from alternative to alternative, they are differential, and therefore must be taken into account in selecting the best alternative. In addition, the relevant costs related to the future, which also applies to the relevant benefits.

The above mentioned characteristics lead us to the concept of irrelevant (past, inevitable) costs. They are the result of past decisions, the costs that are already incurred and which can not be avoided no matter which decision is made. Past costs are irrelevant in decision-making. Also, any current or future decisions can not change them. When it comes to projecting future costs, past costs may serve as an indicator of the behavior of costs for a particular decision.

Within the future costs, variable are often very relevant and fixed costs are irrelevant. Of course, the approach that all relevant variable costs are relevant, and all fixed irrelevant can not be fully accepted. Some of the variable costs may remain unchanged even after the decision, while on some of the fixed costs the decision still may have an impact.

In making individual business and financial decisions, management can not rely solely on quantitative financial information, but to a great extent, must take into account nonfinancial and quantitative information. Moreover, the imperative becomes flexible accounting information system that is able to adapt to changing macroeconomic and microeconomic business environment, as well as changes in the company. [3, pp. 240.]

Flexible standard cost accounting has high ability to respond to the informational requirements of the business decision, because the standard costs are future, and there is a separation of variable and fixed costs.

Additionally, the decision will not be made by using only quantitative factors. "It is rather a product of cognitive evaluation of all relevant factors of the decision-maker, and therefore all the qualitative aspects of the alternatives in question, which is sometimes given even greater importance" [2, pp. 438.]

2. Integrated Approach to the Use of Financial and Nonfinancial Information for Decision-Making in Companies with JIT System

The goal of JIT strategy is that the right goods, in the right quantity and quality, find in the right place at the right time with the purpose of achieving greater competitive advantage in the market. More specifically, JIT seeks to achieve goals that are ideal and very difficult to achieve in practice, but as such they represent an incentive for continuous improvement and achieving excellence in business, such as eliminating activities that do not add value to the product, lack of supplies, the absence of defects, the size of the party of one unit and 100% timely delivery [4, pp. 28.].

More recently, it is widely accepted notion that JIT production can be successful only if accompanied by the introduction of new rules of conduct within the system of governance. Accordingly, it is necessary the new systems of performance measurement of product lines, manufacturing processes and the centers of responsibility. Performance measurement systems are usually based on data on costs, which are obtained by accounting. However, this may not always satisfy the information needs in the JIT environment. This is because for the JIT the importance of some data, such as the valuation of stocks or discrepancies in the cost of direct

Information Base for Decision-Making in Enterprises with JIT System

labor, declined. Moreover, there is a rising need for “real time” information on the various indexes that traditional systems based on costs not considered, such as, for example, during the processing of concrete products, or different quality standards [5, pp. 122.].

The use of traditional indicators of performance in companies with JIT system can sometimes be counterproductive. For example, a tendency toward an increase in productivity can lead to excess inventory, which will actually increase productivity, but will reduce the overall profitability of the company. Accordingly, at companies that use JIT, resources that are intended to measure the activities of the costs are greatly reduced, while constantly growing interest in non-financial information.

“Losing relevance” of traditional management accounting systems in the late eighties, is explained by imprecision, obsolescence and unrealistic of data produced by these systems. One of the reasons for fundamental change in management accounting is that traditional cost accounting systems provide information that may lead to wrong decisions. The management accounting literature emphasizes that the full costs of products that use the principles of financial accounting, are not adequate for the purposes of decision making. Instead, it advocates the use of additional costs (costs that can be avoided). In this regard, the decision on the introduction of new products, withdrawal of a product, pricing, etc., are made by tracking only those additional costs and revenues that vary in relation to individual decisions. However, “in complex real situations where the company produced many different products may not be possible to determine only relevant cost for each decision, because the set of possible solutions, with which managers are faced, is huge.” [4, pp. 835.]

Kaplan said that the main reason for losing the relevance of management accounting is the use of the same system for making decisions about products and evaluation related to different processes or organizations. The first type of problem (products) requires accurate information, but not so frequent. In contrast, the control process requires very frequent (frequency) real time information. Therefore, Kaplan proposed design of two different systems. Data on the costs of use would be to measure the profitability of specific products, while for the control of the process will be used most nonfinancial information. This understanding is closely to the JIT environment in which the real time process control is essential. With the introduction of JIT production is expected to be the introduction of a system for collecting and processing of non-financial information that are independent of the accounting system [4, pp. 836.].

Each of these two systems, if used separately, may produce inaccurate or information that lead to the wrong conclusions. For example, knowledge of costs and the value of a product in a JIT environment are closely linked to its non-financial characteristics such as product quality and meeting deadlines. On the other hand, non-financial indexes alone can not provide complete control of the process. There is a possibility that a decision resulting in an increase in operational performance (e.g., quality), and the simultaneous reduction of other causes (e.g., meeting deadlines). Reduction of time of preparation, for example, which is one essential goals of JIT production, may cause an increase in size of one individual series. This decision, however, can lead to an increase in the time of production.

We can conclude that the total effect of a decision can be determined only in the case of defining the impact of each factor on non-financial costs and revenues. So, only one integrated approach to the use of financial and nonfinancial information may be acceptable.

3. Development of an Integrated System of Performance Measurement in Terms of JIT

Integrated use of financial and non-financial indexes has so far been limited to the area of quality. In a number of companies there is an information system that collects information on costs related to the quality (cost of prevention, the cost of detecting defects, internal and external quality costs). "Management accounting systems can help in achieving the quality objectives by providing a variety of reports and motivating management and assessment of efforts to improve" [4, pp. 841.]. This, of course, includes financial and non-financial indicators. The report on the costs of quality points to overall costs of the organization due to production of products or services that do not meet the requirements of quality and looks like:

	% sales	(6,5 million din.)
The costs of prevention		
Training in quality din.	150 000	
Analysis of suppliers	40 000	
Design related to the quality of	50 000	
Preventive maintenance	<u>60.000</u>	
	300.000	4,6
The costs of discovering defects		
Check materials received	70 000	
Check work in progress and finished products	140 000	
Testing equipment	40 000	
Audit quality	<u>100 000</u>	
	350.000	5,4

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Internal quality costs

Waste and scrap	100 000	
Modifications	140 000	
Delays due to defects in	90 000	
Repeat	<u>70 000</u>	
	400.000	6,2

External costs of quality

Returns	250 000	
Revocable	140,000	
Warranty Repair	100 000	
Processing of claims	60 000	
Losses due to lost sales	<u>400 000</u>	
	<u>950.000</u>	<u>14,6</u>
	<u>2.000.000</u>	<u>30,8</u>

Display 1: Report on quality costs

Source: Drury, C., 1996., Management and Cost Accounting, ITP, pp. 842.

Expression of each category as a percentage of revenue from the sale may be made in comparison with previous periods, other companies or organizational units within the same company. Such comparisons can indicate the problems in the area and may be a basis for decision making. Comparing, for example, external quality costs with other companies can point to the current level of customer satisfaction.

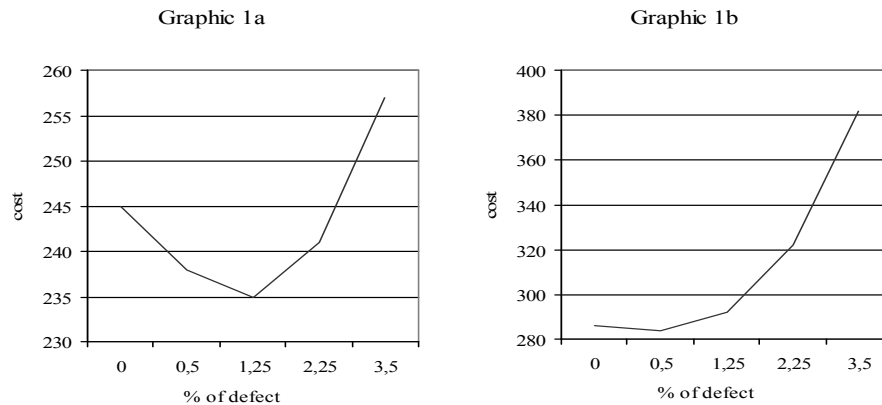
The advantage of reporting on quality costs is reflected in the fact that it presents a basis for decision making on expenditures related to the quality. In that sense, it can draw attention to the possibility of lowering the total cost of the quality by properly allocation of the costs between the four categories, i.e. increasing costs of prevention and thus a significant lowering of internal and external quality costs. Also, the cost of detecting defects can be reduced by incorporating quality into products and processes, since then, requires less checking. [4, p. 841.]

No matter how significant, this approach in itself is not enough. Consider only quality can lead to neglect of other key aspects.

The graphic 1a shows the set level of quality (which is measured by the percentage of defective units) at which the minimum cost quality arises. Chart 1b considers the same example, but in this case the effects of the quality of the delays in the supply (subject to alteration) are taken into account, i.e. the opportunity costs involved due to these delays are considered. Neglecting of some key factors can lead to non optimal

decisions. Accordingly, when the analysis included all relevant aspects that influence a decision, the optimal solution is finding.

Chart 1: Cost-specified quality



Source: Azzone, G., Bertele, U. and Masella, C., 1989., “An Integrated Approach to Cost Management and Performance Measurement for Just – in – Time Manufacturing”, Proceedings the 4th International Conference on Just – in – Time Manufacturing, JIT’s Here to Stay – Managing for Success, London , UK, p. 128.

Below we highlight the guidance in the design of integrated performance measurement system that will help in avoiding these errors, according to the proposal by authors Azzone, Bertele, and Masella.

The first step in designing an integrated system for measuring performance is to define its subject. Generally, from one system may require two different sets of indicators:

- indexes of efficiency and
- indexes of effectiveness.

Indexes of efficiency linked output of the production center with inputs that are used to getting it. In order to develop a system that will allow producing accurate indicators of efficiency, the following four steps are required:

- a) “determining the key attributes of outputs,
- b) determining the key attributes of inputs,
- c) defining standard usage and
- d) structuring the report.” [5, p. 124.]

Explanation of these steps given below is based on the exposure-cited article.

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a) In companies with a JIT system, the traditional indicators of output based on volume (number of units produced) must be supported by indexes based on the quality and time.

From the index based on quality, we can mention the percentage of defects, the percentage of declined series, the monetary value of waste and the number of alteration products.

Examples of indices based on time are: the production cycle time, processing time and the number of timely delivery.

In reality, every company has to analyze which of the proposed indexes are largely associated with the key success factors of the particular firm. Using more indicators may require higher costs and greater complexity of performance measurement system that would exceed any benefits from their use.

b) Unlike traditional systems that describe each resource only in terms of its “standard efficiency” (a standard machine hours and standard hours of work, the standard use of the material), at JIT must be defined also “standard flexibility” of some resources. Although it is impossible to give a unique definition of flexibility which would be applicable to all companies, we will highlight three main indexes:

- flexibility of mix (which is measured by the time of preparation)
- flexibility of scale (which is measured by operating leverage) and
- flexibility of production (which is measured by a set of parts that each machine can handle).

c) The third step is the application of standard usage, which connects the output to input. Standard usage is expressed as a function of the quality, quantity and timeliness of output and standard of efficiency and flexibility of standard input.

This function can be expressed analytically or in the form of tables. While the standards defined in this way will be imprecise than in the case of using traditional cost accounting system, it is better to dispose of information that can be used in the modern environment, than more specific, but useless information.

d) Final report on the performance of products and processes may be to structure as in Figure 1.

In section A is given the actual output of the production center. In N rows is showed N products company. Three cells of each line contain the actual volume, quality and deadlines for each product.

Section B contains the standard use of each of the M resources used by each product. The result is a NxM matrix of order, where i ranges from 1 to N, and j from 1 to M, in which cell (ij) contains the standard use of the resources j during the actual production of i part.

Figure 1: Report on the Indexes of efficiency

				Resources					
volume quality terms				1	2				
Products	1			1					
	2			2					
	Section A			Section B					
	N			N					
Standard usage				Line 1					
Actual utilization				Line 2					
				Line 3					

Source: Azzone, G., Bertele, U. and Masella, C., 1989., “An Integrated Approach to Cost Management and Performance Measurement for Just – in – Time Manufacturing”, Proceedings the 4th International Conference on Just – in – Time Manufacturing, JIT’s Here to Stay – Managing for Success, London, UK, p. 129.

In section C, a certain level of performance for each resource is determined. This section covers three rows. Row no. 1, which is obtained by summing all the cells from section B by column, shows the total default utilization of each resource. Row no. 2 shows the actual utilization and the row number 3 their difference, i.e. performance index, whose consistency is assured because all the output characteristics are taken into account. Three of their difference, i.e. performance index, whose consistency is assured because all the output characteristics are taken into account.

On the basis of this report, it is possible to make a word processor table. The program can find out some specific features of the products of the company. When the mix of products in the section A change in the quantity, quality and deadlines, spreadsheet program will now determine the expected effect on the utilization of resources and indicate the possible existence of bottlenecks.

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Indexes of effectiveness, i.e. profitability measures provide more comprehensive analysis of the effects of decisions related to products. This measurement system can have a structure that is shown in Figure 2.

Compared to the previous scheme, there is a difference in section A related to the fourth column showing the price of each product. Summing all cells of the column we determine the total income. In section B there is no difference, while in section C there are three additional lines and contain the cost of standard utilization of resources (line 4), the cost of the actual utilization of resources (line 5) and their differences, that is, measuring the effectiveness of resources (line 6). The last column of each row shows the total cost of all resources.

Figure 2: Report on the Indexes of effectiveness

volume quality terms price				Resources					
				1	2				
Products	1			1					
	2			2					
	Section A			Section B					
	N			N					
Standard usage				Line 1					
Actual utilization				Line 2					
Efficiency index				Line 3					
Standard costs				Line 4					
Actual costs				Line 5					
Effectiveness index				Line 6					

Source: Azzone, G., Bertele, U. and Masella, C., 1989., "An Integrated Approach to Cost Management and Performance Measurement for Just – in – Time Manufacturing", Proceedings the 4th International Conference on Just – in – Time Manufacturing, JIT's Here to Stay – Managing for Success, London, UK, p. 129.

At the end, designing a system for measuring the performance on a hypothetical example, shown in Figure 3.5 is explained. The production

In the first step the relevant attributes of output should be determined, in the present example, the number of units produced per unit time, the maximum rate of defects in adopted party and the time limits of order execution, i.e. average time between orders and production.

Source: Azzone, G., Bertele, U. and Masella, C., 1989, "An Integrated Approach to Cost Management and Performance Measurement for Just – in – Time Manufacturing", Proceedings the 4th International Conference on Just – in – Time Manufacturing, JIT's Here to Stay – Managing for Success, London, UK, p. 130.

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Standard usage refers to the explanation of the relationship between outputs and inputs.

In order to simplify the example, we will consider only mechanical and labor costs by ignoring the material. If resource utilization does not exceed the capacity of one shift (1,800 hours per year), the costs are fixed.

From the picture no. 3 (Section C, row 3), we note that the positions of 1 and 3 have a lower efficiency than the standard. However, line 6 shows that only the position number 3 has a lower efficiency than projected (-50), while reduced efficiency of work place 1 forces the use of currently available unemployed capacity. In this way, we have analyzed the effectiveness of resources. By excluding certain lines we can determine the effectiveness of a particular product. For example, by exclusion of product A, income is reduced by \$ 1,500 with unchanged standard costs. Therefore, the net profit contribution of products A to the company profit is 1500 so that it should retain it and continue with its production.

Conclusion

The efficiency of the overall management process and decision-making depends on the development of information systems. Flexible standard cost accounting has high ability to respond to the informational requirements of the business decision given that the standard costs are future, including the separation of variable and fixed costs.

Integrated approach to the use of financial and nonfinancial information is essential in the JIT environment, in which the timely control is the critical success factor of business success and achieving a competitive advantage. In this regard, the overall effect of a decision can be determined only in the case of defining the impact of each factor on non-financial costs and revenues.

Designing an integrated system for performance measurement involves the definition of efficiency index and effectiveness index. Efficiency indexes link output production center with inputs that are used to getting it, while effectiveness indexes, as a measures of profitability, provide a comprehensive analysis of the effects of decisions related to products.

References

1. Novicevic, B.,1997., "*Računovodstvo u funkciji poslovnog odlučivanja*", Računovodstvo, revizija i poslovne finansije u procesu privatizacije i funkcionisanje preduzeća u uslovima prelaska u tržišni ambijent, I Simpozijum, Banja Vrućica, (oktobar);

2. Stevanovic, N., 2000., *Upravljačko računovodstvo*, Ekonomski fakultet, Beograd;
3. Jablan Stefanovic, R., 2010., "Informacije računovodstva troškova u postizanju i održavanju konkurentskih prednosti preduzeća", *Mogućnosti i ograničenja razvoja računovodstvene profesije u Srbiji*, 41. Simpozijum SRRS, Zlatibor;
4. Drury, C., 1996., *Management and Cost Accounting*, International Thomson Business Press, London;
5. Azzone, G., Bertele, U. and Masella, C., 1989., "An Integrated Approach to Cost Management and Performance Measurement for Just – in – Time Manufacturing", Proceedings the 4th International Conference on Just – in – Time Manufacturing, *Jit's Here to Stay – Managing for Success*, London, UK;
6. Stevanovic, T. (koautori Novičević, B. i Antić, Lj.), 2006., *Upravljanje performansama preduzeća*, Ekonomski fakultet, Niš.

INFORMACIONA OSNOVA ZA DONOŠENJE ODLUKA U PREDUZEĆIMA SA JIT SISTEMOM

Rezime: Efikasnost procesa upravljanja u značajnoj meri zavisi od razvijenosti sistema informisanja. Pritom, integralni pristup u obezbeđivanju finansijskih i nefinansijskih informacija od strane računovodstvenog informacionog sistema predstavlja ishodište pri donošenju adekvatnih poslovno-finansijskih odluka. Ovo je naročito značajno u preduzećima sa JIT sistemom u kojima visoko postavljeni ciljevi predstavljaju podsticaj za stalna poboljšanja i dostizanje savršenstva u poslovanju. U radu se upravo ističe značaj integralnog pristupa korišćenju finansijskih i nefinansijskih informacija, kao osnova za donošenje odluka u preduzećima sa JIT sistemom.

Ključne reči: informacije, odlučivanje, JIT sistem, sistem mera performansi, finansijske i nefinansijske informacije



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Year XLVIII, N° 3, 2010, p. 369 - 382

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SIGNIFICANCE AND INFLUENCE OF ECONOMIC STRUCTURE ON ECONOMIC DEVELOPMENT

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Abstract: *Nowdays, it seems that there are no serious interpretations of the phenomenon economic development without mentioning economic structure being related to the previous. The relation between economic development and economic structure and structural changes is so obvious and close, that without it, defining of economic development wouldn't be possible. The notion "structure" for the time's being implies a whole made of parts that are mutually connected by interdependent relationships. That whole is not riveted or permanently given. It is a changeable category and they are influenced by various factors which will be differentiated in various ways (internal and external, short-term and long-term, etc).*

Keywords: *economic structure, economic development, three-sector model, structural transformation*

1. General Views of Economic Structure

The notion of structure apart from economics and other human sciences, also study the natural sciences, because in all spheres of man's being exists an interaction of parts that make a complex whole. Each segment of nature is made of certain structure. In the same way, man is a structure which constantly changes during time and creates a new quality (at the psycho-physical level). All chemical compounds are for example, specific structures which under certain conditions can change and create new qualities as well. The same rule exists in economics. Economic development, first of all considered as a qualitative change, is impossible without economic growth being its quantitative part. However, this "qualitative" contribution to "quantity" exactly gives the economic structure.

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UDC 330.34, Review paper
Received: 11.06.2010. Accepted: 08.09.2010.

It seems that no phenomena in economics is so complex as a phenomenon of economic structure, especially because of the relations with almost all the most important issues and phenomena that economics deal with. The economic growth as a quantitative increase of GDP of one country in specific period of time, is really impossible to monitor without considering economic structure which is exactly its *spiritus movens*. The accumulative ability of economy and the total accumulation, exactly depends on the economic structure. The system of prices in an economy is determined by its economic structure. The regional development's issues are also related to the structure.

However, it would be wrong to think that the economic structure has only "internal" effects and relations. On the contrary, the economic structure directly influences the structure of external trade, and at the same time the structure of balance of payment of a country.

The economic structure is directly related to the issues of technical progress, labour productivity, employment, inflation, issues related to the economic system and economic policy, and even those issues related to specific factors as climate, culture, habits.

Widely accepted definition of economic structure does not exist, which is clear, because this complex and challenging economic issue has been the matter of concern since the mercantilists. Right at the beginning it was said that the structure is an entity of mutually related elements that create a whole. "A whole seen as a structure is not only a group of elements, but such group where all the elements are related and interdependent."¹

Kuznets, e.g., defines structure as "a relatively connected whole made of elements that are mutually related, where each of them has its specific role, but together they function towards attaining a set of common goals".²

So, the definition of structure contains four key elements within itself:

- 1) elements,
- 2) the relation between those elements,
- 3) the relation between elements and the whole and
- 3) dynamics and the changes of elements and relations.

¹ M. Korošić, „Cijene i strukturne promjene u privredi“, Informator Zagreb, 1976, pg. 11.

² S. Kuznets, "On Comparative Study of Economic Structure and Growth of Nations", The Comparative Study of Economic Growth and Structure, New York, NBER, 1959, pg. 162.

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Such definition of structure implies that changing of any element of the whole means the change of functioning of other elements and at the same time the total whole itself. This further implies that the structure is in the continuous process of changes (some elements of the structure disappear, and others appear and modify). However, it would be completely wrong to think that these changes occur fast and frequently. Permanency (slow and not frequent changeability), are the basic attributes of order that we call structure. Structure can be more precisely understood as a relatively unchangeable or slowly changeable order of different elements. Only in that sense is the order the structure.³

No matter that knowledge about single elements from which the structure is created, and whose functioning is of extreme importance, conclusions about a concrete structure can not be drawn according to single elements. Its common relationship marks the functioning of the whole structure.

The economic structure for analytic purposes can be defined as a relation of participation of production in a certain sector, activity or branch to the total production of one national economy (horizontal structure), or as a relation between production of certain regions and the production of a country as a whole (vertical structure).

2. Basic Concepts of Economic Sectors and the Three-Sector Model

In modern economic discussions one may frequently come upon the three-sector theory with its model. It is significant when the issues concerning economic sector models, economic structure, and especially structural transformation are discussed, where inevitable theme is surely tertiary sector, which in higher phases of transformation becomes dominant in creating the GDP of a certain country.

Along with positive elements being the basis for deeper research of economic structure and for thinking out a modern theory of structural changes, the three-sector theory has a number of deficiencies which will be considered in the following passages.

The three-sector theory is based on the idea that economy's three-partition property can indicate the basic direction of economic growth and its

³ H. Bortis, „Some Considerations on Structure and Change“, *Structural Change and Economic Dynamics*, No 11, Elsevier, 2000, pg. 186.

consequences on the productive factors (labor and capital). The theory contains two key assumptions:

a) The total production of one national economy can be divided in three sectors (primary, secondary and tertiary). With economic growth the number of employed in the primary sector relatively decreases on account of the secondary, and related to this is also a relative decrease in the number of the employed in the secondary on the account of the third sector.

b) The economic development of one national economy goes through three stages. First of all, it is the primary stadium with relatively simple agrarian economy, which in the higher phase of development moves to the secondary stadium, with mostly productive (manufacturing) activities, while in the highest-the tertiary stadium the need for culture, education and for shaping spare time prevails.⁴

The question technical progress in this discussion is inevitable and it has a different significance for certain sectors. The prevailing opinion is that in the primary sector the influence of technical progress is noticeably huge, but such influence is definitely the greatest in the secondary, and the least in the tertiary sector. Since technical progress frequently substitutes factors (work with capital), the conclusion is that in the secondary sector with the economic growth releases the labour force, and in the tertiary sector, where the influence of technical progress is negligible and at the same time the demand is growing, the number of the employed is increasing.

What is sure is that one of the most complex issues related to the three-sector model is the issue of classifying certain branches in an adequate sector and it differs at different authors who have different visions of this problem. According to that, criteria for classification differ from author to author: at Fisher's it is the income elasticity of demand, at Fourastie's it's a technical progress, while at Wolf's the criteria for classification of the sectors is the domination of factors of production.

Undoubtedly, at such analyzing of sectors, the tertiary sector is the most heterogeneous. Even Clark made deeper analyzing of the tertiary sector in order to make more homogeneous aggregates. One of the solutions is to divide tertiary sector in two parts - the part that depends on income, and the part that depends on production (income and production dependent tertiary sector). The branches of tertiary sector dependent on income directly react

⁴ H. J. Pohl, „Kritik der Drei-Sektoren Theorie“, MittAB, Institut für Arbeitsmarkt und Berufsforschung Nürnberg, 1970, pg. 314.

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on income change while tertiary sector dependent on production react on the change of demand of the production area.

Opposing Clark's division of sectors, Fourastie begins with the most primary, secondary and tertiary professions. So the worker of industrial enterprise he classifies in the secondary, and the employee of the same enterprise in the tertiary professions. However, apart from doing this, he could not represent the real circumference of the third sector in economy, because the tertiary professions one can find in all three sectors of economy, and service activities can not be simply divided from one part of economy. In industrial branches there are e.g., tertiary professions such as: management, research and advisory of consumers, while on the other hand, in service enterprises exist secondary professions such as: a locksmith, a technician a mechanic. Aggregating of tertiary but also secondary professions does not only provoke great troubles. Essentially, it is incorrect, so it would be necessary to make analyses according to functions, and to this day an adequate practical manner of aggregating tertiary functions has not been found.

3. Factors that Influence the Sectors' Growth

The economic growth is based in fact on a constant adjustment of supply and demand of goods and services. The demand is, however, determined by various factors such as: growth and population structure, income, prices, various psychological moments and external influences.

When we talk about income, right at the beginning we should pay attention to two key issues: first, particular goods are demanded by individuals or households that own a certain quantity of income and second, the increase of their income gradually brings to the saturation of their demand.

What is the logic consequence of the growing economy is the growing income and according to this, the change of the structure of demand depending on its income elasticity. The thesis of three-sector theory implies the demand for the tertiary production is farther than the stadium of saturation, in distinction from the primary and the secondary products whose demand is close to this border. Primary and secondary products have a little income elasticity of demand, in distinction from the tertiary products. Such an attitude is frequently being criticized, since particular luxurious products of the primary and the secondary sector such as: jewelry, expensive cars or caviar, possess a high income elasticity, and they do not belong to the tertiary

sector. But both trade and transport being part of the tertiary sector, possess a low income elasticity of demand.

When prices are in question, one should mention that they change with the change of productivity in certain branches. The branches with insignificant technical progress have the increasing expenses of wages, while those with higher technical progress (higher productivity), can keep prices constant or even to lower them. According to three sector theory, the tertiary sector that has a generally high income elasticity of demand has a insignificant productivity growth.

The conditions of production are one more significant factor that influences the growth of certain sectors. It is likely to attain the increased output with the growing demand, in two ways: by increasing productivity or by increased investment of production factors.

The productivity of labor in the tertiary sector increases very little (below average), because the demand for tertiary products increases with the growth of life standard and it has its individual nature, so the mass production with increased productivity is not possible in the major number of tertiary activities. Besides, this "productivity" can not be stored and by the rule, it is produced on place, where it is to be spent. Because of the great heterogeneity of the tertiary sector, possibilities for increasing productivity are also various.

External-economic influence is very important for development economic sectors, especially in modern conditions where practically the case of closed economy does not exist. Import and export demand in circumstances of "open economy" can significantly influence the development of particular sectors this is what this dissertation will be focused on in the up coming chapters.

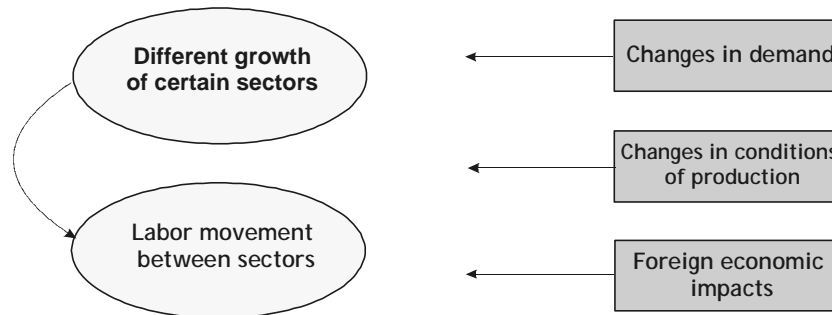
Clark, Fisher and Fourastie made a solid relationship between the stadium and the sector model-in the primary stadium of economic development, the primary sector has the greatest significance, in the secondary-secondary, and in the tertiary the greatest significance has the tertiary sector. So, in different stadiums sectors do not have the same significance for the economic growth.

The primary sector. It is widely known the fact that the primary sector in its initial (primary) stadium of economic development has a dominant role. In most of European countries, over 50% of the total economy in 19th century made a primary sector, and that share in the previous centuries was even larger. As for the secondary sector, in this phase

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it has developed in weak intensity. It almost did not come to the increase of productivity, so the substitution effect as well as the income effect almost are not worth mentioning.

Figure 1.



This phase also notifies weak intensity of external trade exchange and the income raised in this way. Saving and accumulating would hardly be possible, because the most basic needs had been satisfied and almost the whole demand was related to the primary products. One should also mention that the greatest part of the working population was employed in the production of essential primary products.

Passing to the secondary stadium, the national income slowly attains such a level where it is possible to assure sufficient food for the population. The income elasticity of demand for primary products starts declining, because "the capacities of human stomach are limited". In this period begin realizations and numerous inventions in economy, productivity grows, but the demand grows as well, which becomes more and more diversified.

The increase of income brought to the phase to slowly pass from the demand of basic food products to the demand of food products of higher value. Expenses for primary products arte still in the phase of growth, but now it is far more sophisticated version of the primary products, which slowly get their packing, better quality and final proccession. The increase of demand for primary products also contributes the appearance of various accompanying services.

Developed economies in the higher phase of development is characterized by moving of the relation of the factor price for the benefit of capital as a factor, and the substitution of labor by capital becomes increasing.

The technical progress and the increase of capital investment in the primary production, with constant laboring potential has led to further increase of production, that was enabled by the increased demand. Investments are placed in frames marked by "limit of saturation".

The secondary sector. With the beginning of realization of inventions in economy, the secondary sector begins to spread. The productivity there, especially begins to grow which influences the further increase of the national income. The aggregate demand becomes more and more differentiated and slowly exceeds the frame of necessary primary goods, because the secondary goods are more and more needed.

With the parallel process of broadening the production and increasing the income, we notify one more phenomenon, and that is a switch of labor force from the primary to the secondary sector. If goods with high income elasticity can be produced with improved techniques, that would not release the surplus of labor force, on the contrary, such production branches attract additional labor force, what Fisher calls "the effect of absorption".

The second situation occurs in sectors whose income elasticity of demand is low, so with the improvement of production techniques the surplus of labor force is released (because the wages of employees do not increase implicitly), so this effect is called "the effect of rejection".

How fast will particular good attain the point of saturation, depends on whether in its production can be carried out "the unification of taste" and enabled its mass production with increased productivity. If the products characterized by individual demand are in question, with the production of such products, it can be barely worked on the increase of productivity, so because of the increased price of these products they are at consumers' list in the phases of higher income, so the saturation of demand for them would be at higher phases of development.

If technical progress in the secondary sector be constant, then, during time, the growth of this sector would reach its high limit. However, technical progress enables further production of new products, which with the increase of income of the consumer gain significance, where we especially point out durable consuming goods. Durables can replace some services, so that's why exists a special need for their buying, because of little increase of productivity of service activities, the price of their products remains relatively high, so it is in the final consumer's benefit to substitute them.

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However, it would be wrong to conclude that the production of durables that produces the secondary sector, delays the tertiary sector. However, such production stimulates the development of production-dependent tertiary branches about which we will talk later.

The increased demand for industrial consuming goods asks for the increase of capacities of such secondary activities, but also the increase of capacities of production-dependent tertiary sector. At the same time, in the form of investment occurs over average demand for secondary capital products, and that again provokes the increase of production of production-dependent tertiary sector. In the total secondary sector (the production of consuming and capital goods) and in production-dependent tertiary sector, because of spreading of production begins the income effect, and that brings to further increase of demand for the secondary consuming goods and income-dependent tertiary services. It also grows the demand for the primary sector goods, but more qualitatively than quantitatively. Such complete growth of demand begins a circle of production of consuming goods of the secondary sector and with it-the income-dependent tertiary sector, and right after that the secondary sector of the capital goods and production-dependent tertiary sector. We can conclude that the technical progress directly influences the spreading of production of capital goods.

The tertiary sector. The growth in primary and secondary sectors (especially the secondary) inevitably causes increase in demand in manufacturing-dependent tertiary branches (above all in trade, transport, credit and insurance firms, communication).

Trade (retail or wholesale trade) has a considerable significance as a "follower" of production expansion, because it has a task to distribute a larger quantity of offered goods, and to build additional distribution channels for new product that appeared in the market. Transport, on the other hand, becomes more apparent because the production of certain industrial products concentrated in a smaller number of production spots, while agricultural production is dispersed in area, but starts to produce growingly for a market.

The possibility of productivity growth in these tertiary branches is similar to secondary production, and employees have a similar position like those in the secondary sector (if demand grows, the number of employees does not decrease, even in the case of technological progress, while in the case of decreased demand, a "effect of release" appears).

Clark, Fisher, and Fourastié expected the expansion of the tertiary sector only in the tertiary phase, but that expansion has been seen even in the second phase in the manufacturing-dependent tertiary sector.

While the growth in the manufacturing-dependent tertiary sector is only indirectly caused by the growth in income, the growth in income-dependent tertiary sector is based directly on demand of consumers, i.e. income growth, but also on the elasticity of demand coefficient.

The question is raised whether the increase in income causes saturation in these branches and it stands in direct connection with another question of the increase in productivity in this sector. Because of certain similarity of demand in these services there is some resistance to mechanization and automation, although it is still partially possible, by introducing machines for small manufacturing or by improving informational devices and programs for a smaller number of standardizes services. Therefore, a problem of saturation in these tertiary braches is quite possible.

4. Concept of Economic Sectors in Contemporary Conditions – Negation or Elaboration of Three-sector Model?

The increase of services' share in total output in almost all countries of the world and "the shift to the service economy" is a main characteristic of contemporary economic growth. The tertiary sector has become so expanded and differentiated over time, that it is simply impossible today to observe all the activities within this sector as a homogenous whole. That is a reason behind the intention of the contemporary structuralist concept on this sector to further divide it to quaternary, and even quinary sector, which we will attempt to explain in the following section.

We start with the two basic claims regarding the study of the sectoral problems in contemporary conditions: first, primary, secondary, tertiary, and quaternary activities are different enough to allow mutual differentiation and comparative analysis; and second, the total growth rate and economy efficiency is influenced by changes of relative significance, contribution and in-out relation of these sectors.

The tripartite division of economy, which is seen from Clark to Kuznets, shows that three mega sectors can be differentiated by exploitation of natural resources, range of operations of production units, production process, final product, and shift of their movement of their share in total output and used resources. "Inserting" the fourth sector is not characteristic for earlier literature, but it is important to divide the huge tertiary sector, which contains industries that are different in growth rates, capital intensity and labor productivity. Many empirical researches have suggested the

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growing share of the quaternary sector in national economy, either in GDP or employment.

Denying the three-sector hypothesis in contemporary conditions, i.e. its extending by adding new sectors, logically asks for their defining.

The quaternary sector refers actually to intellectual service, such as: generating, distributing and spreading information, consultations, education, and research and development (R&D). Sometimes these are incorporated within the tertiary sector, but it is believed today that the intellectual services are different from the others enough to be regarded as the separate sector. This sector is especially significant in the developed countries and demands highly educated labor force.

The quaternary sector consists of such activities which provide information services, including ICT, consulting, and R&D. However, the quaternary sector can be regarded as the sector, in which large companies invest in order to insure further expansion (by reducing expenses, by expanding market, by innovations, and by new production methods).

From all said above, the following conclusion can be drawn.

First, the three-sector hypothesis, which is a basis for studying the problems of economic structure and structural transformation, becomes inadequate in contemporary conditions, because the tertiary sectors expanded enormously and became more differentiated.

Second, the expansion of the service sector, firstly to undeveloped economies and then to all the others, caused the inability for it to be observed as a homogenous whole and necessity to divide it into two or even three sectors. Namely, it is the matter of the quaternary and quinary sectors which are sufficiently different and specific that they can be separated as a particular entity.

Third, the separation of the quaternary and quinary sectors from the tertiary is significant because the independently studying them (not as being a part of the tertiary sector), can make the research of certain service industries behavior easier, as well as the logic of functioning of these sectors.

Fourth, the quaternary sector as a sophisticated service sector, is a dominant one in all of the most developed countries of the world, which sufficiently proves it to be the main lever of development.

Fifth, the expansion of the quaternary sector condition the labor force structure to move to more qualified professions, which is positive, because only the highly educated labor force makes the highest value added.

Sixth, quantitative methods still cannot completely measure the influence of the quaternary activities, i.e. intellectual contribution to economic growth, which is a great limitation to study of this sector.

5. Structure and Growth – Structural Transformation of Developed and Developing Countries

The conclusion that cannot be avoided is that structural changes are tightly correlated with economic growth, which was the basis conclusion of classical development economics. According to that, industrialization as a form of structural transformation is regarded as a initiator and carrier of technological changes, and total productivity growth is mainly a result of reallocation of labor from sectors with low productivity to sectors with high productivity.

The growth is today essentially associated with dynamic of production structure and with certain institutions which are created to support it. The key of successful development in contemporary conditions is, therefore, dynamic production structure, on the one hand, and macroeconomic surrounding which supports such structure, on the other hand.⁵ Naturally, a wider institutional context, as well as adequate education and infrastructure are needed also, as factors without which modern growth is the impossible.⁶

Having in mind that expensive growth has been recorded in recent years and decades, and that it has been quite different in developed and developing countries, an analysis should be started with a distinction of initiators of growth in developed and developing countries, which can be quite different. Also, the speed and depth of structural transformation is different among countries, therefore some of them (like the "Asian Tigers") managed to shift rapidly from agriculture to industry and services, while the others, with weak structural transformation, are still far behind them in development.

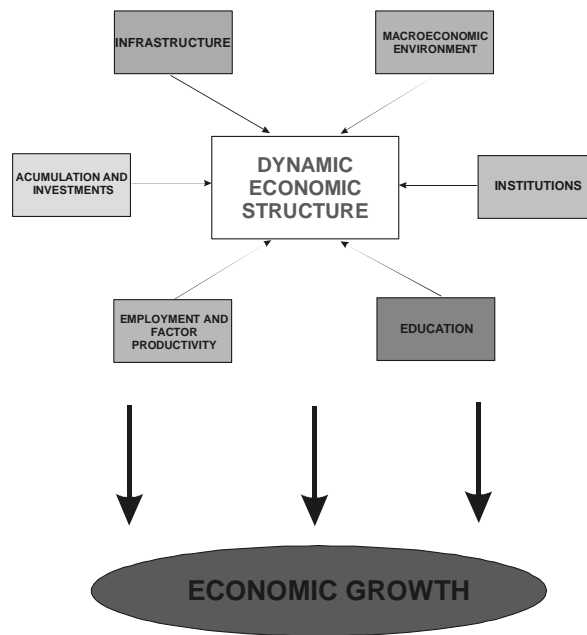
⁵ J. A. Ocampo, „Structural Dynamics and Economic Development“, Social Institutions and Economic Development, Kluwer Academic Publishers Netherlands, 2002, p. 56.

⁶ Institutions, education, and infrastructure have an indirect role in defining the movement of economic growth.

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Accumulation and structure of investment are also very important for the contemporary economic growth, not only for speeding up industrial production, but also for services, which investments is very important, because they also accelerate industrial growth.

Figure 2.



Also, employment and productivity contribute significantly to structural changes and economic growth of developed and especially developing countries. Permanent growth in labor productivity and labor force reallocation from sectors with low productivity to sectors with high productivity, is characteristic for rapidly growing economies. However, significant changes in shift of employment to industrial and service sector has been also recorded in the regions and countries with slow growth; but in these cases employment growth has not been followed by growth in productivity, and that shows that work has been absorbed into activities with low productivity, where it has been rather unexploited.⁷

⁷ This has been also proved by a sample of 57 countries, divided into 10 geographic group; done by UN, "World Economic and Social Survey 2006, Diverging Growth and Development", UN Economic and Social Affairs, 2006.

References

1. M. Korošić, „Cijene i strukturne promjene u privredi“, Informator Zagreb, 1976.
2. S. Kuznets, “On Comparative Study of Economic Structure and Growth of Nations”, The Comparative Study of Economic Growth and Structure, New York, NBER, 1959.
3. H. Bortis, „Some Considerations on Structure and Change“, Structural Change and Economic Dynamics, No 11, Elsevier, 2000.
4. H. J. Pohl, „Kritik der Drei-Sektoren Theorie“, MittAB, Institut für Arbeitsmarkt und Berufsforschung Nürnberg, 1970.
5. J. A. Ocampo, „Structural Dynamics and Economic Development“, Social Institutions and Economic Development, Kluwer Academic Publishers Netherlands, 2002.

ZNAČAJ I UTICAJ PRIVREDNE STRUKTURE NA PRIVREDNI RAZVOJ

Rezime: Ni jedno ozbiljnije tumačenje fenomena privrednog razvoja se ne može ni zamisliti bez pominjanja privredne strukture kao njegovog nezaobilaznog elementa. Veza privrednog razvoja i privredne strukture i strukturnih promena toliko je očigledna i bliska, da se čak bez nje privredni razvoj ne može ni definisati. Pod pojmom „struktura“ podrazumevamo celinu sastavljenu od delova koji međusobno stoje u određenim međuzavisnim odnosima. Ta celina nije fiksirana i jednom zauvek data. Ona je promenljiva kategorija i na te promene celine utiču najrazličitiji faktori koje ćemo u radu diferencirati na različite načine (interne i eksterne, kratkoročne i dugoročne, itd).

Ključne reči: economic structure, economic development, three-sector model, structural transformation



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"ECONOMIC THEMES"

Year XLVIII, N° 3, 2010, p. 383 - 402

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MODELS FOR MEASURING CUSTOMER SATISFACTION AT THE NATIONAL LEVEL

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Abstract: *Strong competition and high demands of modern consumers have imposed the need for continuous quality improvement of products and services in order to raise the level of customer satisfaction and loyalty. The basic goal of customer satisfaction measurement is objective quantification of subjective perception of consumers. Customer satisfaction index is an important indicator of the achieved quality and market performance of companies and can be calculated at the micro and macro level. National customer satisfaction indices are useful framework for analyzing the competitiveness of national economies, industries and individual companies and are used for a number of other aspects of observation and analysis. Standardization of models in different countries allows comparability of the data, which is very important in the era of globalization and internationalization of business. There is a need to introduce the model of customer satisfaction measurement at the national level in the Republic of Serbia.*

Keywords: *customer satisfaction, customer loyalty, measuring customer satisfaction, customer satisfaction indices, national barometers.*

1. Introduction

The concept of customer satisfaction is attracting increasing attention in the literature and business practice, as well in practice of independent institutions and government bodies. It is known that the marketing efforts of marketing entities should be directed to consumers, and the main goal is to deliver such value that will satisfy their needs and desires.

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UDK 659.113.25:658.8, Review paper

Received: 04.09.2010 Accepted: 08.09.2010.

The satisfaction is therefore emerging as a precondition of successful cooperation between consumers and companies in expressed competitive conditions of modern business. Viewed from a macro point of view, in the national economy, this data refers to the way the economy operates in the function of customer satisfaction, but also to differences between individual sectors and specific companies (competitors), in terms of skills and ways to fulfill the wishes and needs of consumers.

Although the word – satisfaction is a term that is often used in business communication, as well as in everyday life, regarding scientific and professional point of view there are certain dilemmas and uncertainties, which logically affect the ways of measuring customer satisfaction, both at the micro and macro level. First of all, it should be noted that the satisfaction of consumers is just one phenomenon out of the broader concept of satisfaction. Namely, in addition to customer satisfaction, we can talk about internal satisfaction¹, as well as the satisfaction of organizations and industrial customers². Satisfaction can be further analyzed both from the management and legal aspect, but with a wider level also, seen from the local community and society as a whole. Some of the key discrepancies in the definition of customer satisfaction are given in the following questions:

- Is it the emotional or cognitive (rational) response?
- What is the focus, or with which the consumer determines his satisfaction (whether it is a product/service as a whole, compared with seen performance before and after using the product, sales staff and the manner of serving, experience in use, comparison of rewards and costs, i.e. victims of the consumer...)?
- In what time the satisfaction comes, i.e. customer response (whether at the time of consumption of products/services, immediately after consuming, after the purchase, after the selection of specific alternatives...)? (11)

Each of above mentioned questions is extremely important, because only if we fully understand the phenomenon, with components that constitute it, it is possible to measure and monitor the level of customer satisfaction. Usually the consensus is established about the first question, in the sense that most experts assume that, initially, there is an emotional response of consumers, which varies in intensity, and therefore may differ from customer to customer for the same product / service. About two other

¹ Satisfaction of „internal customers“, i.e. employees.

² The area which includes primarily industrial, i.e. business or business-to-business marketing.

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questions, there are still some concerns, which of course influenced the formation of a model for measuring customer satisfaction.

Based on previously presented remarks, it seems that the most acceptable definition is given by Tse and Wilton [26]. According to them, the satisfaction of consumers is: "The consumer's response to the evaluation of the perceived discrepancy between prior expectations (or some norm of performance) and the actual performance of the product as perceived after its consumption." If we simplify the definition, it could be said that customer satisfaction is the emotional response of a consumer, or a feeling, that comes from comparing the expectations formed prior to purchasing with the seen (experienced) performance of products/services. [27, p.101]

In order to know how consumers react and how many are satisfied with the products and / or services of companies, it is necessary to do appropriate survey and quantify the results. Thus, it must be taken into account that the satisfaction can not be measured and surveyed by direct query, because it is complex at the same time – with also hidden variables, i.e. it is a subjective judgement of the consumer. The importance of measuring customer satisfaction is emphasized because of the fact that it affects the intentions and future behavior of consumers. Created customer satisfaction is not an aim for itself, but an important step towards the creation of loyal customers. Satisfaction and loyalty are key links in the profit-chain. Although very useful, measuring customer satisfaction is a procedure that carries many challenges and problems. Satisfaction is a latent variable, and it includes the subjective perception of consumers about the quality of products and services. It is essential that researchers, besides measuring customer satisfaction, include all those variables in the analysis, with which are together forming the cause-effect relationship. In order to obtain necessary information, it is desirable, when measuring customer satisfaction, to use a structured model. So we can say that the goal of customer satisfaction measurement is objective quantification of subjective perception of consumers, and depending on whether it is survey at the micro or macro level in question, the methodology is different. [27, p.122]

Measuring customer satisfaction has, therefore, large macroeconomic and microeconomic importance. At the level of the national economy, based on the value of customer satisfaction index, it is possible to predict the movement of gross domestic product and personal consumption. In addition, the value of customer satisfaction index indicates in which percentage of the price increases are caused by a product quality improvement, and not by increased inflation. As a result, the national barometers have great importance for the creators of the macroeconomic

policies of a country. It is believed that productivity shows the quantitative aspect of company's business operation in the market (and the national economy) and satisfaction indices show the quality of the relationship. [10, p.7]

The measurement of satisfaction at the micro level is done by companies wanting to determine how products/services affect the satisfaction of their customers. Measurements are made on the basis of the results obtained by the surveys that are carried out usually with interview techniques, and in some cases, using focus groups. Continuous monitoring of customer satisfaction may be an important indicator to the company as how much they managed to achieve their primary goal (to profitably meet demands and desires of the consumer) and to be guidelines in which direction and how to strengthen/develop long lasting relationship with the (key) customers. Accordingly, customer satisfaction index is a reliable forecaster of the financial performance of companies. Its value can be used to predict stock prices and company revenues. More research has demonstrated the interdependence in this regard, thus, for example, resulting that there was an increase of 1% in the ACSI index value (*American customer satisfaction index*) leads to an increase in company value in the range of 240-275 million U.S. \$. According to the other analysis, referred increase of 1% effects in the next year to increasing of net cash flow of the company from 55 million U.S. \$, as well as to reducing variations in cash flow. Surveys in Sweden has led to the conclusion that the increase in satisfaction of 1%, measured by the index of SCSB (*Swedish customer satisfaction barometer*) for a period of 5 years, is worthed 94 million U.S. \$. [13, p.450, 23, p.25-29]. It is important to emphasize that the implementation of these projections need dynamic researching approach, it is necessary to take into account the large number of other influences on the change in stock price, the value of the company and cash flow.

Surveys should be carried out continuously in successive intervals of time in order to monitor changes in values of customer satisfaction index. Some of the specific questions (themes) to which the survey on customer satisfaction give answer at micro level are in addition to the above-mentioned financial reasons, as follows:

- Quantifying the level of customer satisfaction, as well as identifying reasons for satisfaction/ dissatisfaction of consumers;
- A comparison in terms of customer satisfaction with competing companies;
- Index shows the effectiveness of company's efforts and investments to improve customer satisfaction;

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- Determining the reasons for customers' departure, as well as ways to retain them and to design appropriate loyalty programs. [7, p.1056]

2. Developing of Customer Satisfaction Indices at the National Level

In the last twenty years, there is an increasing interest to monitor satisfaction at the macro level, in order to promote quality and to make economy more competitive, i.e. to monitor the „health“ of the national economy and individual sectors, as well as the way in which they meet the primary objectives of business in terms of fulfilling the needs and desires of consumers.

To date, a number of national customer satisfaction index model (national barometers) has been developed, which are significant at the level of national economies, but also at the level of industries and individual companies. Although there is still no generally accepted world model, there has been a trend of increasing globalization and standardization of national barometers, which despite some differences, has a great number of similarities. The application of an identical model in different industries of different countries, allows comparability of the data, which is a precondition for improving customer satisfaction, market performance of companies and the general economic situation of a specific country, but also observed in wider sense. The general trend of globalization and internationalization, as well as the association of countries (such as the example of the European Union), apparently contributed to the area of measuring consumer satisfaction at the macro level.

The first attempt of creating a national model for measuring customer satisfaction was carried out in Sweden 1989 (*Sverige Kundbarometer*). The research team led by Professor C. *Fornell* developed *Swedish Customer Satisfaction Barometer-SCSB* which has been tested in the first year (1989) in 28, and the following year (1990.) in 32 branches of the Swedish economy. [17, p.219] The index is calculated on the basis of the survey that was conducted on an annual basis and included interviews (by phone) close to 25000 respondents. Results were monitored and calculated for the approximately 100 companies. The main objective was to monitor and compare the index of satisfaction between the branches. However, there were other objectives: comparison of the results of a specific company with an average of the branch; comparison of results in terms of time – the dynamic aspect; predicting long-term results and effects; answers to different questions, such as those on the sensitivity of some branches (and companies) to the satisfaction of consumers, about effects of total quality and cost, on the impact of consumer expectations of satisfaction, conducting research on

influence of consumer complaints, as well as the effects of word-of-mouth communication and so on. [10, pp.10-11]

We should also mention one of the first attempts to measure customer satisfaction at the national level - the German model (*Deutsches Kundenbarometer - DK*), which originated 1992, on the initiative of the *German Marketing Association*, and with the support of *DeutschePost*. *German Barometer of Customer Satisfaction* is the result of the need for finding an adequate quality measuring of products / services and customer satisfaction. It has been established as a result of the strength and development orientation of German industries and enterprises. The model provides a basis for continuous monitoring and improving the satisfaction of German citizens. This model of research includes over 50 branches of the German economy. Every year about 45000 interviews are performed according to this model, using CATI techniques [14, p.340]. German barometer, in terms of methodology, differs significantly from other national models. Namely, in this model, satisfaction is measured only by one statement (a total customer satisfaction of products and services). In addition, there is no system of causality between the variables studied, so that the DK is not a model in the classical sense. It is interesting to mention that the application of German barometer involves the use of five-point numeric scale, where 1 indicates the highest rating and 5 the lowest rank score of satisfaction. [18, p.757]

After these first attempts, countries like USA, Singapore, some EU countries, Switzerland, New Zealand, Taiwan... have invested similar efforts to establish a system of measuring customer satisfaction at the national level during the last decades of the twentieth century. It is interesting that for example, New Zealand, South Korea, Malaysia and Taiwan are among the group of countries that defined and tested their own national model, while many other countries have accepted some of the previously developed models, primarily American (ACSI) and European (i.e. ECSI, EPSI), which are widely applied in the original or adapted version. [4, pp.1017-1028, 14, p.335]

American Customer Satisfaction Index has made a great success and it is widely used. Only recently, several countries in the world started their own customer satisfaction indices, according to the license of this index. It is interesting that the realization of the American models involved experts who have developed the model in Sweden. Right from the model SCSB, the team of Professor C. Fornell established also the *American Customer Satisfaction Index (ACSI)*. The initial version of the American model was tested in 1994. Since 1996, according to this model, the need for separate measurement of

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quality products and quality service has been emphasized. [2, pp.871-873, 17, pp.222-223]. The popularity of this model has been proven also by the fact that the model has been recently implemented in the UK, where it has been measuring customer satisfaction for leading companies in 16 branches. [22] In Singapore, this model is available from April 2008. The partners are the *Institute of Service Excellence at Singapore Management University* (ISES) and the *Singapore Workforce Development Agency* (WDA). [3] In the case of Turkey, *Turkish Customer Satisfaction Index* (TMME) has started the implementation since 2005. It covers 25 sectors, both private and public, and under the license and with the support of American partners, conducted by *KalDer - Turkish Society for Quality and KARL - KA Research Limited*. [25]

At the end of the nineties of the twentieth century the *European Customer Satisfaction Index (ECSI)* was launched, which connects the image, customer expectations, perceived quality and value, all leading to consumer satisfaction. The model is designed in a way that allows the calculation and comparison at the level of a company, industry and a state. [5]

ECSI is actually an adaptation of American model. The first results of the study conducted in 11 EU countries were presented during the year 2000. Some European countries such as France, Denmark, Switzerland, Norway, Austria and the Netherlands, formulated their own national indexes. An interesting example is Norway, where they, based on the analysis of the shortcomings of Swedish, American and European models, members of the CFI Group (*Claes Fornell International Group*), proposed a series of modifications to improve the system for measuring customer satisfaction. Their suggestions were incorporated into the new *Norwegian Customer Satisfaction Barometer* (NCSB). [17, p.218]

Today, the European index is researching and leading in most European countries under the name of the *European Satisfaction Performance Index* (EPSI). Initially, it was introduced and tested on the initiative of the European Commission and the pan-European organization for quality (*European Foundation for Quality Management* - EFQM and the *European Organisation for Quality* - EOQ) for the year 1997. [28, p.856] Customer satisfaction and perceived quality are measured by this index in a number of countries, and in 2009 more than 900,000 telephone interviews were conducted, where they regarded both final and business buyers. Among the countries in which the index was measured by EPSI index, all the countries of Scandinavia stand out (Norway, Denmark, Finland, Sweden, Iceland) and the Baltics (Latvia, Lithuania, Estonia), and several other

European countries (like Russia, the Czech Republic, Portugal , Greece, Ireland, Ukraine, ...). [8]

The plan of the *Ministry of Trade and Services* of the Republic of Serbia is to develop, in 2009 and 2010, the *Customer Satisfaction Index*, and some test research and design models have already been carried out in late 2008 and during the year 2009. The overall aim of continual monitoring of customer satisfaction, set up by the Ministry, are the following:

- Measuring the quality of products and services seen by consumers at the continuous basis;
- Clearer view of the situation in the economy of the Republic of Serbia and the relations between certain industries;
- Comparison of satisfaction of consumers in the Republic of Serbia with the satisfaction of consumers in other countries;
- Raising awareness of consumers about their importance and the need to hear their opinion;
- Developing a culture of consumption, introducing consumers to their rights and ways to achieve them;
- Establishing closer cooperation with existing organizations for customer protection and encouraging the establishment of new ones;
- Raising awareness of company managers in terms of putting the focus on long-term customer satisfaction, as a guarantor of successful business, rather than short-term financial results;
- Raising awareness of managers in terms of monitoring the quality seen by consumers and not only the quality as a technical and statistical component;
- Promoting the best companies in terms of satisfaction of users of their products and services, as a role model for other businesses [12, 24 and 27, p.123]

Methodology proposal was made to allow calculation, comparison and continuous monitoring of the overall index of customer satisfaction, but also to perform, in the future, integral tracking and linking of this index with the index of satisfaction of participants in marketing channels at the macro level in the Republic of Serbia (while observing the relationship between manufacturers, retailers and wholesalers). [20]

3. Review and Comparative Analysis of Basic Models for Measuring Customer Satisfaction at the Macro-Level

National barometers are designed in function to find a universal global framework for measuring customer satisfaction. The establishment of

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an identical system of measuring customer satisfaction in different countries is ensuring the comparability of results. It is therefore necessary to design a model that is relatively well adapted to different industries regardless of geographic area. This determines the degree of competitiveness of companies, industries and national economies.

All the above mentioned national models, except for the German, are based on the approach of causality and the connections between different variables. Models include the identification of three groups of variables. These are [21, p.469] causes of satisfaction (eg, value, quality, expectations), satisfaction (resulting model's variable) and consequences of satisfaction (complaints, loyalty ...). This is the so-called. latent model variables, where it is recommended that each of them is measured by a larger number of statements. Multidimensional approach involves more precise measurements of specific constructions. Generally, most variables are measured with over 2-6 statements that are included in the questionnaire. The exception to this rule may occur in the case of the quality of products / services. Sometimes the quality is reviewed with a larger number of parameters, which is usually the case if the SERVQUAL model is used to measure the quality of the service sector. [29, p.3] The respondents expressed their views mostly on the ten-point numerical scale, but for the implementation of these measurements, five-point and seven-point scale are applied. Index value of each latent model variable ranges 0-100. Index of specific latent variables is shown as the sum of the average score which the respondents gave by the parameters in which it is measured, weighted by the importance of these parameters for the consumer's choice of products/services. [15, p.161]

The four basic models of measuring customer satisfaction at the national level will be analyzed in detail on the following pages: *Swedish Customer Satisfaction Barometer* - SCSB, the *American Customer Satisfaction Index* - ACSI, the *European Customer Satisfaction Index* - ECSI (as a forerunner and a basis of EPSI model) and the *Norwegian Customer Satisfaction Barometer* - NCSB. The reasons why these models were selected for detailed analysis and comparison are the following:

- *The Swedish model* - SCSB is the first finished model of measuring customer satisfaction at the national level, which later influenced others;
- *American Customer Satisfaction Index* – ACSI is one of the models which is widely accepted on a global scale;
- *European Customer Satisfaction Index* – ECSI is a forerunner and the basis of EPSI model, and the first model that has been created and tested for a number of countries;

- *Norwegian Customer Satisfaction Barometer* – NCSB represents an interesting attempt to create their own, national model, based on the analysis and detection of defects of former models.

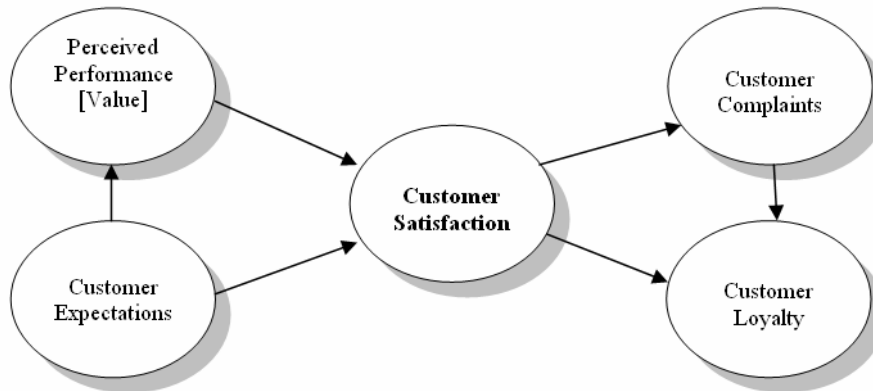
Swedish Customer Satisfaction Barometer was formulated in 1989 and this is the index based on annual data from the consumers for about 130 Swedish companies from 32 industries. Based on the index value, they conducted comparison of the industry development, comparison of the specific company performance with the average performance in the branch and predicting long-term performances. These results between companies and branches are compared in successive intervals of time and thus we can realize the extent to which some companies are successful in providing customer satisfaction and loyalty. The model was developed under the supervision of the University of Michigan and CFI Group. Primary data are collected annually by telephone interview. The survey is conducted on a sample of nearly 25,000 people [14, p.338]. *Figure 1* shows the *Swedish Customer Satisfaction Barometer*. It can be clearly seen that the model includes perceived performance (value), and consumer expectations, as well as assumptions of satisfaction. Variables arising as a result of the satisfaction are complaints and loyalty. Perceived performance represents the perceived value of products / services by consumers, which is obtained as the ratio between quality and price. The model assumes that an increase in value implies a higher degree of satisfaction. Expectations are some consumers' predictions about the ability of companies to ensure future performance. The expectations, as well as perceived performance, are positively correlated with satisfaction. While the perception of performance is based on past consumer experience, expectations are based on recent purchases and word-of-mouth information. [17, pp.220-221] Expectations were positively correlated with perceived value.

Consequences of satisfaction in the SCSB model derives from Hirschmann's „exit-voice“ theory. The theory describes a situation in which consumer dissatisfaction occurs with products and services of a company. An organization can discover their failure in providing customer satisfaction through two feedback mechanisms: the exit or consumer complaints. In the event that the company effectively solve this problem, increased satisfaction leads to loyalty. In addition, the increase in satisfaction implies a reduction in consumer complaints. The model stresses the importance of loyalty as well as variables which implies retaining customers and increase of the profitability. The Swedish model establishes a link between complaints and loyalty. In case of positive correlation, the organization will be able to

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change dissatisfied consumers to loyal consumers. Otherwise, it is inevitable that the cooperation between the two sides would end. [17, pp.221-222].

Figure 1. The original Swedish Customer Satisfaction Barometer model



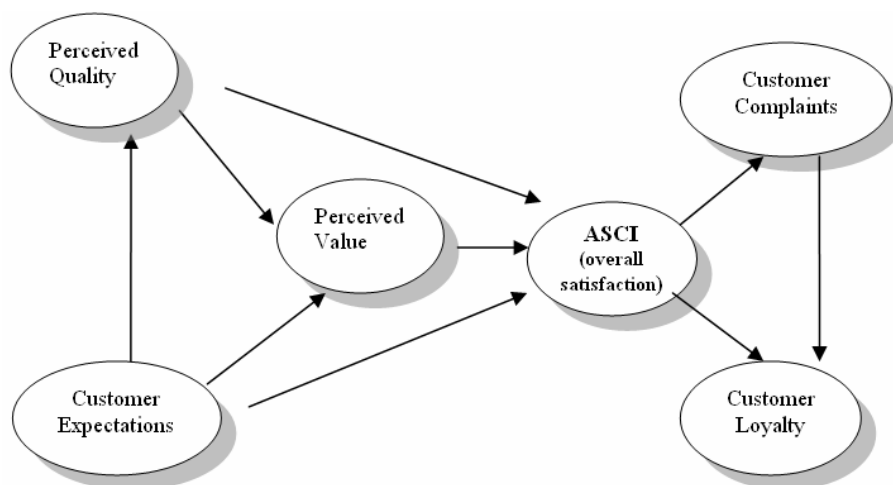
Source: Johnson M., Gustafsson A., Andreassen T., Lervik, L., Cha, J. [2001], "The evolution and future of national customer satisfaction index models", Journal of Economic Psychology, vol. 22, p.221

Swedish Customer Satisfaction Barometer served as the basis for the formulation of the **American Customer Satisfaction Index**. Both models were designed by the research team led by Professor *C. Fornell*. The key difference between these two models is that the U.S. index includes the perceived quality as a variable that drives satisfaction. Namely, while in the SCBS model there is only perceived value, here, there are also perceived value and perceived quality as variables. In addition, it is useful to note that the ACSI survey are conducted quarterly. ACSI score is calculated at the level of the national economy, 10 economic sectors, 44 industries and over 200 companies. Annually, more than 60,000 interviews are realized using CATI technology. [1]

As with the Swedish model, each variable is measured by a number of parameters in the questionnaire. Perceived quality is the determinant that reflects consumer's evaluation of previous purchases. Since 1996, the need for a separate consideration of quality products and quality service has been emphasized. The quality, as a model latent variable, is usually examined to the extent to which the product managed to meet the demands of consumers, the reliability of the product/service, and the respondents are asked to evaluate the overall quality of product / service. To measure expectations, three questions are used in ACSI questionnaire. Consumers express their overall expectations, expected reliability and expected customization. [21,

p.469] Perceived value is the ratio of quality and price of product / service. Two questions in ACSI questionnaire are crucial for measuring of the perceived value: the consumer's assessment of how much is the price high and consumer perception of the ratio quality/price. [17, p.223] Satisfaction (ACSI score) is measured by three parameters in the questionnaire: overall satisfaction, unrealized expectations (performances which do not reach or exceed expectations) and performances in relation to the ideal product in a given category. [29, p.2] The complaints reflect the percentage of the total number of consumers who have filed a complaint or a claim to the company (or which indicates that they have objections to the specific product / service). In the ACSI model, the respondents are asked to express their level of satisfaction with the procedure of resolving complaints, but also to indicate to what extent they found it difficult to file a complaint to the company. Customer loyalty is a function of the re-purchase likelihood of a product/service by the consumer and of likelihood that consumers will continue purchasing the products of the company in case of price fluctuations (price tolerance). [17, pp.223-224, 6, pp.546-548] However, the re-purchase likelihood and price tolerance are the two most commonly used parameters to measure loyalty in the ACSI model.

Figure 2: The American Customer Satisfaction Index Model



Source: Fornell C., Johnson M., Anderson E., Cha J., Everitt Bryant B. [1996], „The American Customer Satisfaction Index: Nature, Purpose and Findings“, *Journal of Marketing*, vol. 60, Chicago, October, p.8

Successful implementation of the Swedish and American models prompted the *European Organization for Quality*, the *European Foundation for Quality Management* and the *European academic network for the*

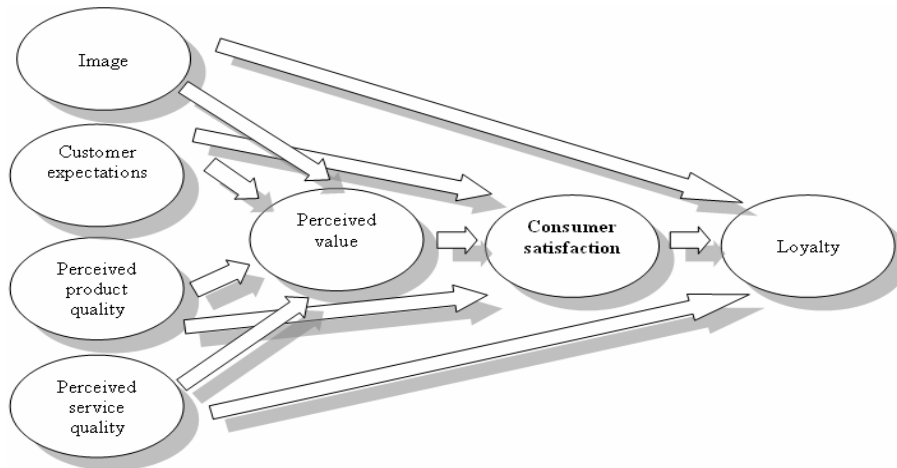
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consumer-oriented analysis of the quality to design the **European Customer Satisfaction Index**. European model was tested in 1999 in 11 countries of the European Union in order to make analysis, comparison and improvement of performance of different European countries economies. In the period March-May 1999, more than 50,000 people are surveyed. Minimum sample size per company amounted to 250 subjects [19, p.328, 5]. ECSI has been formulated on theoretical grounds of the ACSI model. However, to some extent, ECSI is an extension of the *American Customer Satisfaction Index*. This model includes seven variables (corporate image, consumer expectations, perceived product quality, perceived service quality, perceived value, satisfaction and loyalty). As can be seen in Figure 2, the quality dimension is broken into two components: quality of a product and quality of a service. Unlike the American model, the ECSI does not include consumer complaints as a consequence of satisfaction, although more in modern version of EPSI model, some countries include this component in the basic ECSI model. On the other hand, the ECSI includes corporate image as a variable that drives satisfaction and has a direct impact on expectations, perceived value and perceived quality. [29, p.4] The measurement of loyalty to a certain extent is more comprehensive than the ACSI. Loyalty according to the European model is tested by the following parameters: the customer's intention to repurchase, intention of cross buying (buy another product from the same company), and intention to recommend the brand/company to other consumers. When it comes to satisfaction, for its measurement identical parameters are used as in the ACSI model. [19, p.328]

M. Johnson and fellow researchers, based on comparative analysis of advantages and disadvantages of these models, proposed a new model for measuring customer satisfaction and their ideas are incorporated in the new **Norwegian Customer Satisfaction Barometer**. The model was tested in five service branches of the Norwegian economy. When drafting the model, the *CFI Group* members carefully analyzed defects of the ACSI model. [17, p.234] Norwegian model is more complex, since it includes a number of variables (Figure 4). Although it is made based on the ACSI model construction, the NCSB contains many modifications that clearly distance it from its American predecessor. The NCSB does not include expectations as a variable that drives satisfaction. In addition, the NSCB distinguishes corporate image as output satisfaction. Based on this variable, the Norwegian model is different in relation to the ECSI, where the corporate image was presented as a variable that precedes satisfaction. The authors of the model believe that it is more accurately to see the corporate image as a consequence, because it represents the image of the company seen through the eyes of the public that is just being formed, based on the consumer's

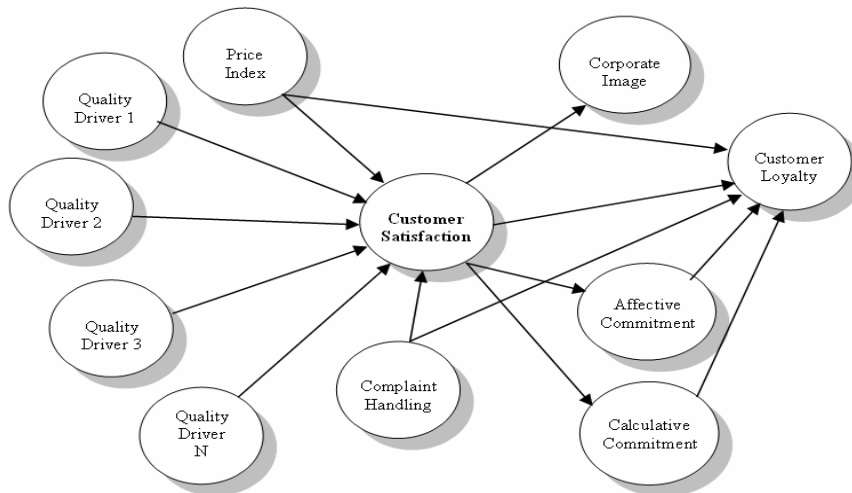
satisfaction with products and services. Also, Norwegian barometer includes resolving complaints as a determinant that leads to satisfaction [29, p.4].

Figure 3: The European Customer Satisfaction Index Model



Source: Inra & Deloitte.[2005], Development of indicators on consumer satisfaction and pilot survey, Project for The European Commission Directorate General on Health and Consumer Protection, Retrieved June 3, 2010, from: ec.europa.eu/consumers/topics/consumer_satisfaction_final_rep_en.pdf - p.18

Figure 4: The Norwegian Customer Satisfaction Barometer Model



Source: Johnson, M., Gustafsson A., Andreassen T., Lervik L., Cha J. [2001], "The evolution and future of national customer satisfaction index models", Journal of Economic Psychology, vol. 22, p.231

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Perceived value is not incorporated into the new NCSB model. The authors believed that it is better to specifically emphasize the quality and the price as the basic components of the value. To the quality, as a driver of satisfaction, special attention is paid in this model, so that it is examined through dimensions of SERVQUAL model. The NCSB includes another two variables that occur as a direct result of customer satisfaction which is coming from a higher level of loyalty. These are the affective and calculative commitment to the brand. Affective commitment is irrational and it is based on emotions, while the calculative commitment is a reflection of consumer's rational behaviour and occurs under the influence of economic factors, such as organization replacement costs, for example, its location. Additionally, the NCSB model particularly is analyzing the impact of pricing strategies and resolving complaints on customer loyalty. In the Norwegian Barometer, the satisfaction is measured by the same parameters as in the case of the ACSI model. However, the NCSB provides a more detailed examination of loyalty. Similar to the European model, for measuring the loyalty the following parameters are used: likelihood of retention, likelihood of recommending the company to others, and likelihood of speaking favorably about the company to his friends and acquaintances. [17, pp.231-233]

4. Comparative Analysis of National Models for Consumer Satisfaction Measuring

In terms of methodology, all the national models, with the exception of German barometer, are designed on the principle of testing causal relationship of latent variables. Only in the DK model, satisfaction is examined separately and with just one statement that represents a serious limitation, and the main weakness of German model in comparison to other models. In addition, in the DK model, satisfaction is measured through a five-point numeric scale. [18, p.757] It is important to point out that in the German Barometer results related to quality and loyalty in some branches are expressed in the form of frequencies, with the aim of determining the percentage of completely satisfied, satisfied and dissatisfied customers. [14, p.342] These statements made the DK clearly differentiated from the other national models. Swedish and American model represented the foundation for the design of other national indexes. A number of researchers in their studies mainly rely on the *American Customer Satisfaction Index*. Namely, we can conclude that almost all barometers, formulated later, are adaptation of the Swedish and the American models. However, despite all the praise and the fact that it was the role model for the design of the national models in other countries, the ACSI demonstrates some weaknesses. Empirical studies of the CFI Group suggest that there is a weak link between

expectations and values. In studies conducted during the year 1996, *C. Fornell* said that consumer expectations are regarding rather on the quality than on the value. As a result, some confusion occurs in the relation expectation- value. *Fornell* suggests that the weak impact on the value of expectations is noticeable in the service sector and manufacturing of durable goods. Consumer's experience that they gain through the cooperation with suppliers of services are affecting their expectations over time and became more rational, passive or even cease to exist. [17, p.228]

Table 1: Comparative overview of selected models for measuring customer satisfaction at the national level

	Year of origin	Founder	No of branches and companies	Latent variables	Restrictions
SCSB	1989	University of Michigan (and CFI group)	32 industries and around 130 companies (in Sweden)	Perceived performances, expectations, satisfaction, complaints, loyalty	Reporting on an annual basis –lack of frequent data presentation
DK	1992	GMA & German Post AG	50 industries (in Germany)	satisfaction, separate measurement procedure of other variables	One question for satisfaction measuring, lack of casual approach
ACSI	1994	CFI Group, University of Michigan & ASQ	43 industries and over 200 companies (in the USA)	Perceived performance, expectations, perceived quality, satisfaction, complaints, loyalty	Surveys has not confirmed the significant connection of expectations and values, values and quality, expectations and satisfaction in certain branches
ECSI	(1997) 1999	EOQ, EFQM & IFCF	11 countries, minimum 3 sector per a country (in the pilot study)	The image, consumer expectation, perceived product quality, perceived service quality, perceived value, satisfaction and loyalty	Small number of sectors involved in the pilot study in some national economies
NCSB	2001	Johnson, et al.	5 service branches (in Norway)	SERVQUAL dimensions of quality, price, complaints handling, satisfaction, affective commitment, calculative commitment, image, loyalty	A large number of latent variables, application of the model was not implemented in the manufacturing sector

Unlike the American, the European (ECSI) and the Norwegian model can provide a more detailed examination on consumer loyalty. Value of the ECSI model is reflected in the fact that it provides comparable results in a larger number of European countries. In addition, the model emphasizes the need for a separate consideration of quality of products and quality of service. Norwegian model, despite the generally good adjustment to measuring of consumer satisfaction in service industries, in some of its elements is too complex (presence of affective and calculative commitment).

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The NCSB made detailed analysis of the quality of service (over SERVQUAL dimensions) and introduced a variable "complaints handling" as a driver of the satisfaction, which is something new compared to the previous models. However, it would be useful to test this model in the manufacturing sector also. There is a danger that NCSB is too adapted to the needs of service organizations, which reduces the ability of the model to provide relevant data on the entire national economy level. Comparative overview of important national model for measuring consumer satisfaction is given in Table 1.

5. Conclusion

Quantification results of consumer satisfaction has a great macroeconomic and microeconomic importance. At the national level, continued monitoring of consumer satisfaction in successive intervals of time is the support for carrying out more accurate projections about the movement of gross domestic product and personal consumption. Furthermore, it indicates about the situation in certain sectors, and provides an opportunity for comparison both at the time dimension and in relation to other national economies. These results are useful for the proper formulation and conduct of pricing strategy, and generally for managing the national economy and relations between companies and consumers. At the level of individual companies, the movement of consumer satisfaction index value allows prediction of future revenues to the company, and shares value and thus, the value of the company itself. In addition, there is a possibility of collecting a wide range of other data that define the level of customer satisfaction and relationship with companies.

In order to achieve more accurate projections, it is desirable that the measurement of consumer satisfaction is to be conducted by applying a structured model. In this respect, a number of national barometer are constructed. The fact is that the above mentioned barometers have many similarities and that none of them, regardless the advantages, are not the ideal system for measuring customer satisfaction. Although there is no ideal model, during the construction of national customer satisfaction index, some basic characteristics should have been satisfied. This primarily refers to the fact that it is about measuring of customer satisfaction, as well as the key factors of success of companies and institutions, followed by several branches / sectors of the economy, national or specific economic region, with periodic research and analysis conducted by an independent institution.

[4]

All above mentioned gives guidelines for the relevant institutions, bodies and companies in the Republic of Serbia. It is certain that the application of national barometer of customer satisfaction evaluation process in Serbia will provide managers, investors and macroeconomic policy makers insight into the competitiveness of the economy, industries and individual companies, as well as a number of other benefits.

References

1. American Customer Satisfaction Index, Scores by Industry, Retrieved June 12, 2010, from:
http://www.theacsi.org/index.php?option=com_content&task=view&id=18&Itemid=33
2. Anderson E., Fornell C. [2000], Foundations of the American Customer Satisfaction Index, *Total Quality Management*, Vol. 11, No. 7, pp.869-882
3. Brochure – Customer Satisfaction Index of Singapore, Retrieved June 10, 2010, from:
www.smu.edu.sg/centres/ises/downloads/0801007R2_brochureCSISG.pdf
4. Bruhn, M., Grund M. [2000], „Theory, development and implementation of national customer satisfaction indices: the Swiss Index of Customer Satisfaction [SWICS]“, *Total Quality Management*, Vol. 11, No. 7, pp.1017-1028
5. Cassel, C., Eklof, J. [2001], “Modelling customer satisfaction and loyalty on aggregate levels: Experience from the ECSI pilot study”, *Total Quality Management*, Vol. 12, NO. 7&8, pp.834-841
6. Ciavolino E., Dahlgaard J. [2007], „ECSI – Customer Satisfaction Modelling and Analysis: A Case Study“, *Total Quality Management*, Vol. 18, No. 5, July, pp.545–554
7. Dermanov V., Eklof J. [2001], „Using aggregate Customer Satisfaction Index: Challenges and problems of comparison with special reference to Russia“, *Total Quality Management*, Vol. 12, No. 7&8, pp. 1054-1063
8. EPSI Rating – International Benchmark trends for Customer Satisfaction and Consumer Sentiment monitoring Customer Satisfaction – 2009, Retrieved July 10, 2010, from:
<http://www.epsi-baltics.org/index.php?option=content&task=view&id=43>
9. Fornell C., Johnson M., Anderson E., Cha J., Everitt Bryant B. [1996], „The American Customer Satisfaction Index: Nature, Purpose and Findings“, *Journal of Marketing*, vol. 60, Chicago, October, pp.7-18
10. Fornell, C. [1992], „A National Customer Satisfaction Barometer: The Swedish Experience“, *Journal of Marketing*, Vol. 56 [January], pp.6-21
11. Giese J., Cote J. [2000], Defining Consumer Satisfaction, *Academy of Marketing Science Review*, 1/ 2000, Retrieved June 15, 2010, from:
<http://www.amsreview.org/articles/giese01-2000.pdf>
12. *Godišnji operativni plan za 2009.* and other documents - Ministry of Trade and Services, Republic of Serbia

A Models for Measuring Customer Satisfaction at the National Level

13. Grigoroudis E., Nikolopoulou G., Zopounidis C. [2008], „Customer satisfaction barometers and economic development: An explorative ordinal regression analysis“, *Total Quality Management*, Vol. 19, No. 5, May, pp. 441–460
14. Grigoroudis, E., Siskos, Y. [2004], „A survey of customer satisfaction barometers: Some results from the transportation-communications sector“, *European Journal of Operational Research* 152, pp. 334-353.
15. Hill, N., Alexander, J. [2006], *Handbook of customer satisfaction and loyalty measurement*, Gower Publishing Limited, Hampshire
16. Inra&Deloitte [2005], Development of indicators on consumer satisfaction and pilot survey, Project for The European Commission Directorate General on Health and Consume Protection, Retrieved June 3, 2010, from http://ec.europa.eu/consumers/topics/consumer_satisfaction_final_rep_en.pdf
17. Johnson, M., Gustafsson, A., Andreassen, T., Lervik, L., Cha, J. [2001], „The evolution and future of national customer satisfaction index models“, *Journal of Economic Psychology*, vol. 22, pp. 217-245
18. Johnson, M., Herrmann, A., Gustafsson, A. [2002], „Comparing customer satisfaction across industries and countries“, *Journal of Economic Psychology*, 23, pp. 749-769
19. Juhl H.J., Kristensen K., Østergaard P. [2002], „Customer satisfaction in European food retailing“, *Journal of Retailing and Consumer Services*, No. 9, pp. 327-334
20. Lovreta S. et. all [2010], Project „Istraživanje odnosa i saradnje u kanalima marketinga u Republici Srbiji“, Ministry of Trade and Services, Republic of Serbia
21. Maričić, B. [2008], Ponašanje potrošača, Ekonomski fakultet, Beograd
22. National customer satisfaction index – NCSI – United Kingdom, Retrieved July 10, 2010, from: <http://www.ncsiuk.com>
23. Ogikubo M., Schvaneveldt S., Enkawa T. [2009], „An empirical study on antecedents of aggregate customer satisfaction: Cross-country findings“, *Total Quality Management*, Vol. 20, No. 1, January, pp. 23–37
24. *Srednjoročni plan za 2010-2012*, Ministry of Trade and Services, Republic of Serbia, Retrieved July 5, 2010, from: <http://www.mtu.gov.rs/dokumenti/spmtu2010-2012.pdf>
25. TCSI - Turkish Customer Satisfaction Index, KalDer –Turkish Society for Quality, Retrieved July 10, 2010, from: <http://en.kalder.org/default.aspx>, full adress <http://en.kalder.org/activities/detail.aspx?SectionID=C%2BUiYrFPN%2B1bgeDirWzv wA%3D%3D&ContentId=SYBcI2iM516rtGkLHtiAhA%3D%3D>
26. Tse David, Wilton Peter [1988] , „Models of Consumer Satisfaction: An Extension“, *Journal of Marketing Research*, May, Vol. 25 Issue 2, pp. 204-212
27. Veljković, S. [2009], Marketing usluga, Ekonomski fakultet, Beograd.
28. Westlundab A., Kallstrom M., Parmler J. [2008], „SEM-based customer satisfaction measurement: On multicollinearity and robust PLS estimation“, *Total Quality Management*, Vol. 19, 7–8, July–August, pp. 855–869

29. Yang, X., Tian, P., Yhang, Y. A comparative study on several Customer Satisfaction Indices [CSI], Retrieved June 12, 2010, from: http://jgxy.usx.edu.cn/DAOM/114_XiaomingYang.pdf

MODELI ZA MERENJE SATISFAKCIJE POTROŠAČA NA NACIONALNOM NIVOU

Rezime: Snažna konkurencija i visoki zahtevi savremenih potrošača nametnuli su potrebu kontinuiranog unapređenja kvaliteta proizvoda i usluga kako bi se podigao nivo satisfakcije i lojalnosti potrošača. Osnovni cilj merenja satisfakcije potrošača je objektiviziranje i kvantifikovanje subjektivnih percepcija potrošača. Indeks satisfakcije potrošača je važan pokazatelj ostvarenog kvaliteta i tržišnih performansi preduzeća i može se izračunavati na mikro i makro nivou. Nacionalni indeksi satisfakcije potrošača predstavljaju korisne okvire za analizu konkurentnosti nacionalnih ekonomija, privrednih grana i pojedinačnih preduzeća, a služe i za čitav niz drugih aspekata posmatranja i analize. Standardizacija modela u različitim zemljama omogućuje uporedivost dobijenih podataka, što je jako značajno u eri globalizacije i internacionalizacije poslovanja. Postoji potreba da se model merenja satisfakcije potrošača na nacionalnom nivou uvede i u Republici Srbiji.

Ključne reči: satisfakcija potrošača, lojalnost potrošača, merenje satisfakcije, indeksi satisfakcije, nacionalni barometri.



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Year XLVIII, N° 3, 2010, p. 403 - 418

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COMPLEXITY, OPTIMIZATION AND OPERATIONS RESEARCH – REFLECTION

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Abstract: *Practical problems are inherently ambiguous and multiobjective and must be considered from several aspects, i.e. with respect to multiple criteria. Classical optimization methods are appropriate for solving the well-structured problems, especially if optimization is done according to a criterion. Most of the real problems, given their complexity cannot or are very difficult to be properly formalized with appropriate mathematical model, so that the traditional algorithmic-optimization procedure shows effective enough instruments for their solution. In this context, and bearing in mind the needs of the economy and society as a whole, the questions of the future of traditional operational research, their relationship with the science of management and their mission as a scientific discipline are raised.*

Keywords: *complexity, uncertainty, operational research, multicriteria choice, optimization, decision, multimethodology.*

Introduction

Optimization problem in its traditional form, i.e. how to achieve optimal results in the system of decision-making, represents a natural intention and heritage of the civilization's development. Practically, from the first intelligent decisions, individuals and groups seek to optimize the exploitation of resources, time, labor, and consequently, the results of that work. Previous findings indicate causal/consequential relationship that exists between our desire and numerous limiting factors, implicitly referring to a logical question: if our decision is not conditioned (inhibited), will the decisions and the results of those decisions be optimal? And second, how to realize them with respect to the fact that the optimum is a sublimated

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UDK 005.31, Review paper
Received: 22.09.2009. Accepted: 08.09.2010.

expression of numerous goals, whose individual optimization does not necessarily mean the optimum in general. There is no doubt that we do not always behave rationally, in the normative sense, or it can be argued that every economic result is derived from the assumption of optimization. It has been empirically proved that, strength and stability of the solutions are often more important for the management than the principle of optimization, so that the patient quest for improvement can deduce the qualitative progress, but on the basis of certain stable assumptions.

On the other hand, modern control problems are inherently multi-objective and difficult to optimize in the traditional way, through the aggregate objective function with appropriate constraints. The reasons for this statement are to be found in the fact that the effect of optimization, regardless of its manifestations, is a complex, dynamic and polyvalent category. In addition, in most cases the optimal solution is only approximate or the actual problem has multiple criteria by which a solution must be assessed.

Classical mathematical optimization instruments cannot adequately deal with the problems having the main features such as complexity, dynamism and ambiguity. Precisely, these characteristics represent a serious obstacle to the efforts to formalize and structure the observed problem in a way that will enable its efficient solution. Generally, most of the real problems are poorly structured, with a lack of differentiated characteristics that could be mathematically exactly quantified. Also, an adequate mathematical record assumes a large number of unknown sizes that need to be taken into account, which results in significant multiplication of difficulties, both technical and principal in nature. If we add the expected conflict criteria, it is evident that the process of optimization as a search for the best solution, under appropriate conditions, will necessarily have to be redefined on qualitatively different grounds.

1. Background

The state and prospects of operational research as a scientific discipline, as well as the hard and soft OR relationship, are a subject to a number of theoretical debates in recent years. We should mention in this context, works of Brans, 2002, Mansour and Fuller, 2003, and Fuller and Martinez, 2005 and Holt and Pickburn, 2001. We should point out the important writings of Munro and Mingers, 2002, which analyze the results of applying multi-methodological approach to solving practical problems, a combination of hard and soft approaches and in particular, the writings of Rosenhead and Mingers, 2001.

2. Hypothesis

Looking at the world around us, it's easy to see that the very nature takes the optimal rate. If the statement is true, that is the case with human decision-making? Second, if we dispute the principle of optimization and substitute it with an opportunistic-utilitarian approach, with a satisfactory solution, will the traditional operational research have a future? It is difficult to avoid the connotation that philosophical questions are listed, and preference must be viewed from the different levels of generality:

Hypothesis 1: Requires multi-methodological approach to solving real problems. Explanation: real issues become more complex and their solution is often faced with the so-called breakthrough, i.e. sudden changes of context at various stages of problem solving.

Hypothesis 2: Even if one accepts a satisfactory solution, the human decision-making always takes the optimal rate. Explanation: action is optimal in a given context and from the perspective of individual decision makers.

3. Management Problems and Operations Research

Every day managers, engineers and scientists of various profiles and navigation, are faced with problems which are characterized by a high degree of complexity and dynamic constellation of determining factors. In such conditions, decision-making concept based on the principle of all or nothing gets fundamentally different form, focusing on the search for the optimal, but not for a satisfactory solution. A small number of these problems can be formalized, but only approximately and quantitatively processed through the appropriate mathematical models. In addition, the basic assumption to begin with in solving, consists of the possibility of choosing a solution from a set of feasible solutions. This explicitly means the existence of several alternative solutions among which to choose optimally. Solving these problems also implies the possibility of a precise description, and clear defining of the objectives that we want to achieve, the identification of all relevant constraints and formation of adequate mathematical models. Formulating the problem as a single goal in the functional form, or if there are multiple objectives, their trade-off treatment in the common value scale, are a key feature of the traditional optimal approach. Good structuring of the problem, in that sense, is possible only if the following conditions are met: to formulate precisely a mathematical model as an approximation of the real problems, specifying the goal by a well-defined objective and comprehensive features and that all the constraints which affect the determination of the optimal objectives of

function value are taken into account and defined and that there are algorithms for determining the optimal solution.¹ It is clear that the way of structuring is a very restrictive in terms of a relatively high degree of freedom that a researcher has in meeting these conditions. Different value systems, mechanisms and perceptual multiple aspects should be added as well, thus completing the picture of some incontrovertible rigor in the request for a good definition of the problem. The theory faced various attempts to classify these problems: Ackoff simply calls them problems,² Rittel and Webber domesticated problems.³ Anyway, they are characterized by the fact that they are rarely defined in the way that realistically reflects the actual problem and the researcher controls the environment and selects the variable whose effect should be affected.

Until the mid-seventies of the twentieth century, the most important place in solving structured problems belonged to the traditional operational research (OR)⁴ and mathematical programming. As a scientific discipline, based on a systemic approach, operational research has emerged from the intent and attempts to solve the practical problems of governance in complex systems that are, in principle, involving technology and people, a logical consequence of the development of normative models of decision making, which is based on the assumption of perfectly rational decision makers, which is perfectly informed and who has an immanent tendency towards optimization. Although operational research primarily had a task to develop a practical approach to solving problems, and represented an aid in decision-making,⁵ practical domains of operational research, however, remained below the level of development of methodology of quantitative approaches.⁶ Some authors qualify them as an orthodox methodological orientation,⁶ based on appropriate algorithmic-optimization procedures, and very often use the term "management science" as a synonym for them in business

1 Petrić, J., Operaciona istraživanja, Savremena administracija, Beograd, 1979, str. 3.

2 Ackoff, R.L., The Art and Science of Mess Management, in: Rosenhead, J., Problem Structuring Methods, XIII European Conference on Operations Research, Glasgow, July, 1994, p.114

3 Rittel, H.W.J. and Webber, M.M., Dilemmas in a General Theory of Planning, 1973, Policy Sciences 4, p. 157.

4 Operations research

5 Vujosevic, M., Sistemske pristupi slabo strukturiranim problemima – izazov operacionim istraživačima, SYMOPIS 94, Kotor, Zbornik radova, pp. 12-15.

6 Petrović, S., Sistemske mišljenje sistemske metodologije, Ekonomski fakultet, Kragujevac, 1998, p. 279.

schools".⁷ Numerous techniques for solving, i.e. optimization, such as linear programming, dynamic programming, network planning etc. have found great use, especially in solving well-structured problems and without a doubt, committed a huge impact on business. These techniques are based on static assumptions that involve collecting data and building models of which the largest number starts with the assumption that the input data are independent of each other. It would, however, mean that the events in the region do not depend on one another and that the probability of their occurrence does not change in time, which does not correspond to the real state of affairs. In the nineties of the twentieth century in the development of applied operational research came to a halt. Thus, in many cases, applied operations research were adapted for other specialized functions in organizations (financial analysis, material planning etc.), so that they lost much of its original identity. In addition, many business schools reduced the scope of the study of operational research studies in response to the decreased interest of students and their turning to other aspects of business, such as, for example, financial applications.⁸ As a result, instead of being required to provide students the same body of knowledge, business schools were given the freedom to create their studies according to defined objectives, which significantly changed the role of operational research in their study programs.⁹ On the other hand, modern science, especially economics, is still not able to effectively solve the key problem of our work, and that is uncertainty. In fact, the complexity and uncertainty are the two fundamental determinants of the contemporary problems of management and have always been characteristic of complex systems that are a subject of operational research. Solving these problems requires an approach that allows us to use a number of relevant information, including those that can be quantified, as well as those that are derived from intuition, experience, values, assessment and imaginative speculation.

4. The Main Problems of Operational Research

It is believed that the main outstanding problems of operational research are predicting future events and (in) ability to adapt to new management philosophies. Operations research represents the scientific

⁷ Fuller, J., Future Directions of Management Science and Operations Management in Business School Curricula, College Teaching methods & Styles Journal – third quarter 2006, p.29.

⁸ Horner, P., History in the Making, OR/MS Today, vol. 29 no. 5, 2002, <http://www.lionhrtpub.com/orms/orms-10-02/fhhistory.html>

⁹ Albritton, M., McMullen, P. and Gardiner, L., OR/MS Content and Visibility in AACSB-Accredited US Business Programs, Interfaces, vol. 33 no. 5, 2003, pp. 83-89.

approach to solving the problem of managing complex systems. Unlike the natural sciences, however, the focus of OR is the reality created by man, i.e. reality of complex human-machine systems and modeling of what will happen in such systems in the future. It's also the biggest practical challenge for the OR - so the static model assumptions to develop a model capable to provide and enable timely reaction and response to the challenges and changes in the real world. The problem with static assumptions is reflected in the fact that we as researchers-analysts collect data, which we think are valid at a time, in order to build models. But our results can only tell us what happened in the recent past, provided that our assumptions were valid. The second question is whether there is a way for OR to keep its place in the new management philosophies that are the result of necessary transformations that occur in modern business? It is generally known that OR is mainly a quantitative decision support in dealing with new and unfamiliar, while the routine processes do not require such help "from outside". Opportunity for OR occurs in cases of innovation, when the management is in a position to cope with their complexity. In addition, it appears that it is possible to prove that behind the role of the concept of optimization in the OR, behind the parallel development as a fundamental principle of optimality in the analysis of economic activity and decision-making associated with such activities, there lie prerequisites with the ethical implications: self-interest is the only incentive for individual economic choice and maximization of individual utility function is the best way to model an individual decision-making. The above and similar considerations¹⁰ have led some authors to defend the use of multicriteria approach to balancing the objective, subjective and ethical criteria in the construction of models for solving problems. Although often not comparable, these criteria should not be reduced to one-goal criteria function, given that their individuality leads to solutions that are acceptable rather than optimal. Second, in the model based on the concept of optimization the final goal is the solution, i.e. identifying actions that will implement the DO, while other authors consider that the process is more important than the solution, which led to alternative approaches such as system thinking and soft operational research. As suggested Rosenhead, operational research should pay attention to developments and changes, actual or projected, in the material basis of their potential customers ... such developments and changes have eroded the traditional base of OR and continue to remain so. "Standard formulated in OR, particularly those that

¹⁰ Brans, J.P., Ethics and Decisions, European Journal of Operational Research, 136:340352, 2002.

are, according to Checkland "combined with logic"¹¹ are not able to cope with situations that are extremely complex. More than ever looking for OR methods and approaches that enable decision makers to adapt to the multiple aspects and to allow smooth operation through interaction and iteration, they are just domains in which the so-called soft OR can make a significant contribution. Separate issue, in addition to traditional OR vs. MS, is whether OR is science or technology?

5. Phenomenology of Management Problems

A common logical structure of the management problems implies that they are the action resultants of numerous and by their nature, various factors, whose impact often can not be exactly measured, which leads to the conclusion that the process of optimizing the conditions must necessarily redefine the limits of the new premises. This is supported by the fact that emphasized logical structure semantically correspond to all relevant provisions of empirical management problems, both in the teleological and in the epistemological sense. This points to a complex constellation of different influences and interests of several entities (subjects, targets, limiting conditions), thus pushing the limits of the problem term to the extent that they become extremely flexible and hard to encompass. The theory views such problems as poorly structured or undefined, treating them as a kind of a problem situation, i.e. as a set of highly interactive, highly complex, dynamic and multifaceted problems.¹² Their key feature is that they can not or will only partially be defined, and the formalization of their solution is extremely complicated. In addition, in principle, problem situation is characterized by the presence of multiple actors with a wide range of goals, interests and perspectives. However, the problem situation can be discussed even, when there is only one policy-maker with multiple objectives, conflicting with each other in the sense that one among them and its implementation imply optimizing the complete or partial obstruction of the other goals. Experience has shown that the classical approach to optimization in its strict implementation is not able to effectively deal with such problems, whose nature implies the active role of decision-makers in the solving process, in contrast to traditional optimization procedures. Moreover, continuous communication between the researcher (an analyst, an expert) - policy-maker (DO) as an imperative, as well as creativity, intuition and learning, represent a *conditio sine qua non*, explicitly decisive direction

¹¹ Checkland, P., OR and system movement: mappings and conflicts, Journal of Operational research Society, 34 (8), 1983, p. 668.

¹² Petrović, S., Sistemska mišljenje sistemske metodologije, Ekonomski fakultet, Kragujevac, 1998, p. 256.

for further development of theoretical and methodological instrument to generate solutions dealing with problem situation. In this regard, the existing dichotomy of management problems which defines them as structured and unstructured problems on the other hand, is an attempt to point out to the necessity of profiling different modalities of moving through a problem depending on the degree of its complexity. Thus, it is considered that the first, so-called hard problems, which are defined by the question of how, appropriate to the classical optimization approach, while the so-called soft problems are appropriate to adequate alternative methodological orientation (Checkland's soft system methodology, the total system intervention, cognitive mapping, scenario planning through etc.).¹³

Table 1: The Assumptions Made by Hard and Soft OR (Munro&Mingers, 2002)

HARD OR	SOFT OR
<ul style="list-style-type: none">- There is a single decision maker (or consensual group) with a clear objective. The nature of the problem is agreed.- The most important factors in a problem can be quantified and reliable data collected.- A model, often mathematical or computer- based, can be used to generate solutions.- Future uncertainties can be modeled using probability theory.- There is no need for the methods used to be transparent to clients.- The role of the hard OR specialist is one of expert analyst.- Hard operations researchers, generally speaking, require good analytical skills and a sound knowledge of mathematics and computing.	<ul style="list-style-type: none">- There are a range of decisions makers or groups with differing or conflicting objectives.- The nature of the problem is not well defined.- Many important factors in a problem cannot be quantified.- Mathematical models, therefore, cannot be used.- Uncertainties cannot be reduced to probabilities.- The methods used must be transparent and accessible to clients.- The role of soft OR specialist is one of facilitator with a group of participants.- Soft operations researchers, generally speaking, require sound people skills and the ability to facilitate often stressful and contentious workshops.

Impossibility of accurate descriptions of problem situations suggests that the models for the approximating must be flexible in terms of using the methodology that will adequately express the level of its complexity. Ashby's famous sentence that only variety can destroy variety strikingly

¹³ Ashby, W.R., An Introduction to Cybernetics, Wiley and Sons, Inc., New York, 1966, p. 207.

reflects the state of affairs in the real world and the requirements to apply the appropriate methodology. Two-dimensional image can be seen only from space with multiple dimensions, the opposite perception is not possible. Solving the control problem must be characterized by the high complexity of access, which must be as dimensional as well as the problem, there are no simple solutions. In spite of everything, it is difficult to draw boundaries between structured and unstructured problems, because most of the problem wrong or can not be rolled to structure, so that approaches to resolve them can not be strictly exact or strictly empirical. Exact procedures are limited to a relatively narrow class of well-structured problems that require a mathematical model, objective criteria and management, management actions and restrictions. Empirical-educational practices, on the other hand, are largely dependent on subjective preferences, practical experience and comparison with known analog systems and intuition. Finally, each and not sufficiently well structured problem with corresponding simplification of mathematical models can be sufficiently well formalized and quantitatively processed in order to obtain a satisfactory result at least. One should in this statement seek reasons why many optimization techniques are increasingly turning to, it seems, a combined approach to solving, with pronounced role of DO not only in the choice stage, but also in the development stage, but with the requirement to include the more exact in the very setting problems. In fact, the interest focus is increasingly moving from solving optimization problems in the structuring of the problem, which is without a doubt, the crucial role of human factors. The treatment of the so-called problem situation as a highly interactive set of management problems, insisting on the consideration of the whole problem in the framework of the existing dimension emphasizes the importance of the correlation that exists between the entities, their relationships, and the causes and consequences of flows of real-world events. System dimension of problem situation just reflects its complexity expressed in the categories of the system, which given the complexity of the soft issues, logically points to the holistic approach as the most appropriate one. Hence, the system concept is attributed importance in the theory of optimization and continuous efforts made to mathematically (set theory, mathematical logic, linear algebra) formalize the very systematic approach as much as possible.

The appearance of the general theory of systems and system of thought represented the *spiritus movens* required for qualitative progress of modern science, especially social, because there is almost no area of human research where the concept of system has not found its implementation. It is a *sui generis* metaphenomenon, which is universal in character and which has a substantial meaning, which is reflected in the fact that an entity is the

system studied, as a set of elements associated with at least one selected principle. Having in mind that the main feature of our world is the increasing complexity of the mutual conditionality of its parts, it is not surprising that the concept of complexity is at the center of interest of the general theory of systems. There are, however, practical problems, the solving of which is too expensive or is de facto impossible. The solution to these problems is to redesign the system, in which these problems occur. This means that a systematic approach would be better suited for solving problems, if it were in a better position to implement the common usage of deductive and inductive methods of science. First, one should understand what is likely to happen, and secondly, how best to control the situation, so that the probable outcome can take a wanted direction. As a result, there is an effort to resolve the observed problem in advance, or better yet, to prevent its occurrence, for the purpose of which the data in the appropriate mathematical model are simulated before the problem appears.

6. From One to Another Paradigm - Composite Operations Research

Complexity, as it is known, is characterized by a large number of interactions between many subjective and objective factors of different types and degrees of importance, which come from actors with different objectives and conflicting interests (stakeholders), which combine to affect the likelihood of or inability to choose alternative outcomes, which all match, with some degree of compromise. In order to come out to deal with complexity, it is essential that there is an organized framework for the actors, their objectives, criteria and policies that govern these goals, outcomes and alternative resources, and to look for alternatives. Operations Research and the Management Science have developed a range of models and techniques for mechanistic coping with complexity, but their greatest failure is the area of human learning and adaptability as well as policies and resolution of conflicts. Take, for example, a manager who may have different roles, each role has its own teleology. He may try to express all the synthetic targets a general expression such as profit maximization. But even this general goal is hardly enough to integrate the importance of different valid, explicitly or implicitly defined goals. When the objectives are mutually dependent, optimization of one of them can result in low achievement level of at least one of the remaining goals. Actually, the problem would not exist if there were a common standard uniform or universal measure of values between the goals. If the dimension of comparison exists, the problem would be reduced to the formulation of a goal and one-goal optimization. Situations involving conflicting goals must be approached with the awareness of the fact that there is a serious problem when the different results are not possible

to express the dimensions of a comprehensive measure. However, in some conceptual way, it is possible to manage the alternative evaluation, assigning a specific weight or specific ranges set out objectives, which require the inclusion of socio-psychological dimension of decision-making. Obviously, we never de facto and not achieve the optimization, but because it first requires simultaneous consideration of alternatives and solutions, and understanding the dynamics and the expected outcome of our actions. The reality is different: we often consider only some of the possible alternatives that are due to the reduction caused by the influence of a number of subjective factors, the events preceding the predictions and our criteria are often incomplete and imperfect, and as such reflect a range of effects for the benefit of decision makers, exemplified by any value, either in units of utility. Therefore, it is inevitable that the researcher-analyst-policy-maker with care and understanding the selected criteria (giving it the highest level of significance) that will most suit the changes in terms of possible actions as "calculating quantitative solutions based on erroneous criteria directly to providing answers to wrong questions."¹⁴

In recent years, restrictions on hard operational research have become more than obvious and it just in their application to solve some practical problems which are becoming increasingly complex, so that the standard methodology and paradigm can not deal with them. Special segment of soft operational research are methods for structuring the problem (PSM).¹⁵ The main feature of this method is that the focus primarily on people who are involved in the problem, and then on the problem. This is in stark contrast with the traditional OR approach that focused on understanding the problem and find the best answer to it, then vice versa. While it is clear that both factors should be taken into account, it also implies a certain difference. If, for example, the primary focus on those who deal with the problem, it may be, by subjective assessment, be considered successful if they provide a better understanding of the issues they face, and their common acceptance of courses of action. On the other hand, the fact that the stated course of action in relation to a problem can be disastrous, the situation becomes absolutely irrelevant. It is clear that this kind of subjective evaluation may not be a valid way to present value approach. Methods for structuring problems undoubtedly play an important role in decision-making process, but remain much more to do in terms of their expansion and acceptance. This includes the following:

¹⁴ Mc Closkey, J., Florence, T., Operations Research for Management, Panorama, Zagreb, 1965, p.135.

¹⁵ Rosenhead, J., Rational analysis for a problematic world: problem structuring methods for complexity, uncertainty and conflict, Wiley John, 1989.

- Clear and concise description of these methods, but it is now the case,
- More effort in terms of evaluation of success in applying these methods and
- Leaving the fanatical support of these methods (it is noticeable that in many aspects of the characteristics of soft OR assumed a kind of religion)

The aforementioned problems have opened the possibility of connecting and combining several methods in the individual case studies. The practice of combining several methods in the study is known as multimethodology.¹⁶ In practice, multimethodology includes a combination of full or adapted methodologies, techniques, or a combination of different methodologies. Research has shown that operational researchers often combine several hard and soft methods more specifically, and rarely hard and soft together. On average, two or three methodologies are combined at the same time.¹⁷ Although there is relatively little combination of hard and soft methodologies that are used today, is considered the future is to combine the methods of operational research. In addition, the OR methods, be they hard or soft, in combination with the social sciences, psychology, sociology and anthropology, provides that accurately represents the human factor and obviously have an important role in the future.¹⁸ Composite OR was created in response to increasingly complex problems and changes, a new kind of science, based on the theory and experience.

Table 2: The Top Combinations of OR Methodologies (Munro&Mingers, 2002; Abdel-Malik et al., 1999)

Hard and Hard	Soft and Soft	Soft and Hard
1. Simulation and Statistics Forecasting and Statistics	1. SWOT/PEST and SSM	1. Simulation and SSM
3. Mathematical modelling and Statistics	2. Influence Diagrams and SSM	2. Statistics and SSM
4. Mathematical modeling and Simulation	3. Strategic Choice and SSM	3. Structured analysis and Design and SSM
5. Mathematical modeling and Heuristics	4. Interactive planning and SSM	4. Statistics and Cognitive mapping
	5. Cognitive mapping and SSM	5. Statistics and Influence diagrams

¹⁶ Munro, L. and Mingers, J., The use of multimethodology in practice – result of a survey of practitioners, *Journal of Operational research Society*, 53, 2002, pp. 369-378.

¹⁷ Ibid

¹⁸ Holt, J., Pickburn, G., *OA Techniques for the Future*, DERA/CDA/SEA/AIR/ CR000141, 2001.

Complexity, Optimization and Operations Research – Reflection

It can be argued that, in fact, no longer the question of OR vs. MS is made, given that the context of application to one or other is clearly specified and determined by the characteristics of the real question of whether the OR / MS is science or technology.¹⁹

The reasons for the application of a multimethodological approach are based on the following observations:

- 1) looking at problems from different perspectives or in terms of different paradigms can gain a fuller insight into the complex issues and a clearer picture of the world around us.
- 2) in a number of examples the combination of the methodologies is present, but without a proper theoretical background and support

There is also potential danger in applying multimethodological approach:

- 1) The different paradigms are often in contradiction with each other. On the other hand, it is possible to see differences, which can be an advantage in more real presentation of the problem.
- 2) Cultural issues determinate view of the world and the ability of the analytical approach. Knowledge of the new paradigm is not enough to overcome the potential bias, but must learn through experience and practice.
- 3) People have cognitive abilities that are predisposed to accept a particular paradigm. Also, logical mind will easily understand and adopt quantitative methodologies. Therefore the transition from quantitative to qualitative methodology is easier than *vice versa*.

Theoretical and methodological implications resulting from the above are reflected in the following:

- There is a wide range of issues that arise in the process of economic behavior, any companies, individuals or groups. Given their specific characteristics, the observed problems can be divided into two groups: well-structured and poorly structured problems.
- System concept is the foundation on which rests the whole theory of optimization, enabling the observation of problems in the categories of system creates. As a rule, the system concept in terms of optimization involves one or more functions as analytic expressions defined goals.

¹⁹ This issue also could be set for some other quantitative discipline, such as statistics.

- Pursuit of optimizing the arche in navigating through the problem. It is useful for decision-making provides a variety of ways to test ii redefine their thinking, even when the solution is far from optimal.
- The real problems are before problem situations with lack of clear boundaries and elements and it is difficult to quantify and can be approximated by a one-goal function. The more realistic interpretation is the simultaneous profiling of a series of target function, the determination of all possible actions and their evaluation in terms of each criterion and finding a compromising solution.
- The future of traditional operational research is related to the concept of the immanent, the concept of optimization. Moment if and when they abandoned the two concepts, mark a break with traditional OR;
- Their ability to correct is an essential component of scientific thinking. Scientific knowledge is constantly reinterpreted and capable of continuous revolution, because the old theories are replaced with new or significantly modified ones.

Conclusion

In many real situations, there are problems that involve a number of criteria and objectives, partly quantitative and partly qualitative. Determined, a small number of these problems can be formalized by mathematical results and effectively handled using various methods, especially mathematical programming. The are numerous problems, where due to their complex and multidimensional nature, the classical optimization approach is based on the request for optimizing a target function, not sufficiently well specifies their key components relevant to a valid observation and modeling, thus structuring the problem becomes the problem per se. Optimization is the theoretical concept that is not helpful in situations characterized by uncertainty and conflict, or in a poorly structured multi-dimensional situations that do not allow for numerical modeling. This argument favors a multi-criteria decision making to the point where it is assumes the presence of structuring, but offers no help in the evaluation of uncertain alternatives. The ability to solve these problems lies in the fusion of soft and hard operational research. What soft operational research provides methods for structuring the problem with involves understanding the people involved in the problem. What, however, soft OR lacks, but hard OR possesses, is a logical and objective way of making the best decision and not one that will be the best in itself.

In any case, the existence of a formal framework for decision-making provides an analysis of the problems of decision making on the logical basis and converts intuition and instinct decision makers in the numbers, which may be open to examination by others who may also be explained to others. This requires a process that will incorporate input, auditing and knowledge to decision makers and communicate them to others in the manner of avoiding or reducing the possibility of conflict. Decisions have to evolve, despite the limited cognitive and perceptive abilities of decision makers. Referential unresolved problem of operational research and the biggest practical challenge is the modeling of future events, i.e. as based on models with static assumptions to develop a model whose prediction capability allows real-time response, the challenges and changes in the environment. In this regard, operational research should be developed in the direction of connecting with the forecasting and risk analysis in response to dynamic information from the real world. Particular analytical techniques are useful, but we must be able to ask the right questions and to develop a systematic way of thinking about problems. What we want is to close or at least decrease the gap between actual and desired, advancing through a series of alternating decisions and evaluation, in time and in parallel, and comparing stages until the results achieve the desired goal. What we need are sensitive ways to deal with our limits, that is, approaches that facilitate the use of creativity and experience in structuring complex problems and implement our solutions in a systematic and accessible framework. What we can do are the efforts to find a solution to the problem, from which a significant step further can be detected, reflected in the improvement of the achieved, by identifying and accepting the relevant restrictions, knowing that the desired results are not always feasible.

References

1. Ackoff, R.L., The Art and Science of Mess Management, in: Rosenhead, J., Problem Structuring Methods, XIII European Conference on Operations Research, Glasgow, July, 1994.
2. Albritton, M., McMullen, P. and Gardiner, L., OR/MS Content and Visibility in AACSB-Accredited US Business Programs, *Interfaces*, vol. 33 no. 5, 2003, pp. 83-89.
3. Ashby, W.R., An Introduction to Cybernetics, Wiley and Sons, Inc., New York, 1966.
4. Brans, J.P., Ethics and Decisions, *European Journal of Operational Research*, 136:340352, 2002.
5. Checkland, P., OR nad system movement: mappings and conflicts, *Journal of Operational research Society*, 34 (8), 1983, pp. 661-675.
6. Fuller, J. and Mansour, A., Operations Management and Operations Research: An Historical and Relational Perspective, *Management Decision*, vol. 41 no. 4, 2003, pp. 422-426.

7. Fuller, J. and Martinec, C.L., Operations Research and Operations Management: From selective Optimization to System Optimization, *Journal of Business&Economics research*, vol.3, number 7, 2005., pp. 11-16.
8. Fuller, J., Future Directions of Management Science and Operations Management in Business School Curricula, *College Teaching methods & Styles Journal* – third quarter, vol.2, number 3., 2006, pp. 29-32.
9. Holt, J., Pickburn, G., OA Techniques for the Future, DERA/CDA/SEA/AIR/CR000141, 2001.
10. Horner, P., History in the Making, *OR/MS Today*, vol. 29 no. 5, 2002, <http://www.lionhrtpub.com/orms/orms-10-02/fhhistory.html>
11. Mc Closkey, J., Florence, T., Operations Research for Management, Panorama, Zagreb, 1965.
12. Munro, L. and Mingers, J., The use of multimethodology in practice – result of a survey of practitioners, *Journal of Operational research Society*, 53, 2002, pp. 369-378.
13. Petrić, J., Operaciona istraživanja, Savremena administracija, Beograd, 1979.
14. Petrović, S., Sistemsko mišljenje sistemske metodologije, Ekonomski fakultet, Kragujevac, 1998.
15. Rittel, H.W.J. and Webber, M.M., Dilemmas in a General Theory of Planning, 1973, *Policy Sciences* 4, pp.155-169.
16. Rosenhead, J.V., What's the problem? An introduction to problem structuring methods, *Interfaces* 26(6), 1996, p.p. 117-131.
17. Rosenhead, J.V., Success and survival . A comment. *The Journal of the Operational Research Society* 49(4), 1998, p.p.408-412.
18. Rosenhead, J. and Mingers, J., Rational analysis for a problematic world Revisited, Problem structuring methods for complexity, uncertainty and conflict, Wiley John, 2001.
19. Vujošević, M., Sistemski pristupi slabo strukturiranim problemima – izazov operacionim istraživanjima, SYMOPIS 94, Kotor, Zbornik radova, pp. 12-15.

KOMPLEKSNOST, OPTIMIZACIJA I OPERACIONA ISTRAŽIVANJA – REFLEKSIJE

Rezime: Praktični problemi su inherentno višeznačni i višeciljni i moraju biti razmatrani sa više aspekata, odnosno, respektujući više kriterijuma. Klasične optimizacione metode su primerene rešavanju dobro strukturiranih problema, posebno ukoliko se optimizacija vrši prema jednom kriterijumu. Većinu realnih problema, s obzirom na njihovu kompleksnost, nije moguće ili je veoma teško valjano formalizovati adekvatnim matematičkim modelom, tako da se tradicionalne algoritamsko-optimizacione procedure pokazuju nedovoljno efikasnim instrumentarijumom za njihovo rešavanje. U tom kontekstu, a imajući u vidu i potrebe privrede i društva u celini, postavlja se pitanje budućnosti tradicionalnih operacionih istraživanja, njihovog odnosa sa naukom o menadžmentu i njihove misije kao naučnih disciplina.

Ključne reči: kompleksnost, neizvesnost, operaciona istraživanja, višekriterijumski izbor, optimizacija, odluka, multimetodologija



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Year XLVIII, N° 3, 2010, p. 419 - 433

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ON-LINE PROMOTIONAL TECHNIQUES AS FACTOR OF ENCHANTMENT OF WEBSITE PROMOTION POSSIBILITIES

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Abstract: *The number of websites on the Internet is growing with tremendous speed, together with emergence of the on-line promotion techniques. In such conditions, Internet marketing generally involves the use of websites in conjunction with on-line promotional techniques. Currently, most common on-line promotional techniques are: search marketing, Internet advertising, public relations on the Internet, viral marketing, affiliate marketing, e-mail marketing, blog marketing and discussion group marketing. The knowledge of characteristics and the specifics of on-line promotional techniques are imposed as an imperative for the people involved in marketing activities.*

Keywords: *Internet, Web, marketing, promotion.*

Introduction

At the beginning of the new millennium, we are witnessing, perhaps, the most dynamic and most revolutionary changes in the entire history of marketing. These changes were caused by advances in technology and development that led to the growth of communications through interactive media, especially the Internet [1]. The Internet has several services, but the most popular is Web. Companies create their own websites in order to follow new trends in designing e-business strategies [2, pp. 11] and because of the needs imposed by new on-line market. With the increasing number of

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UDK 004.738.5:658.8, Review paper

Received: 27.11.2009. Accepted: 08.09.2010.

websites, new on-line promotional techniques appear, making new challenges for Internet marketing.

The aim of this paper is to indicate the currently most actual on-line techniques that can help the enchantment and increase of website promotion possibilities and the overall quality of e-services [3, str. 43], as important factors in making purchasing decisions using Web.

1. The Concept of Internet Marketing and Internet Promotion

Internet marketing is a relatively new concept that is still searching for its theoretical foundation. This is because: (1) Internet marketing is primarily an empirical concept and (2) the Internet itself is in a constant process of change and development.

Chaffey defines Internet marketing as achieving marketing objectives using digital technology [4, pp. 8]. Internet marketing, as a concept which is based on applicative capabilities of Internet, primarily focuses on the promotion and sale [52, pp. 278], although it can be found in all the classic elements of the marketing concept.

Very often, no distinction is made between the concepts of Internet marketing and Internet promotion. Regarding these two terms as identical, is partly caused by a rather colloquial use of marketing in the sense of promotion. At the same time, the concept of Internet marketing is often classified as an element of the traditional promotional mix, which is a much narrow interpretation, which reduces Internet marketing to an instrument of promotion.

All the information appearing on the Internet about the company or products carry some promotional effects. Even the search engine results and website ranking also carry certain promotional effects. However, Internet promotion, as a key component of Internet marketing, is organized activity aimed to promote company, product or idea, using the Internet.

For further analysis, a closer explanation of following terms is necessary: on-line, off-line, on-site and off-site promotion. The subject of this paper is based on the on-line and on-site promotion. On-line promotion includes all techniques based on the Internet that can help achieving website's goals (creating or increasing the number of website visitors, contributing to increased sales, etc.). Basically, on-line promotion is a collection of all on-line promotional techniques. On the other hand, the off-line promotion consists of all the traditional instruments used to generate or increase website traffic [4, pp. 370]. On-site promotion involves all activities that promote communication with target publics based on activities within

On-Line Promotional Techniques as Factor of Enchantment of Website Promotion Possibilities

the website, in order to achieve the traditional goals of promoting [5, 6]. Off-site promotion, on the other hand, includes all the activities that affect the improvement of communication outside company's website (sites) [5].

Website makes a key element of Internet promotion. However, website itself cannot represent on-line promotional technique. The existence of a website is just a necessary condition to start the promotion on the Internet. Website of a company or of some product is the destination where potential customers will be attracted by a variety of promotional techniques [7]. For the full effect of Internet promotion, it is necessary to use special techniques developed by the Internet practice.

2. On-line Promotional Techniques

In practice, Internet marketing mostly involves the use of websites in conjunction with on-line (Internet) promotional techniques [4].

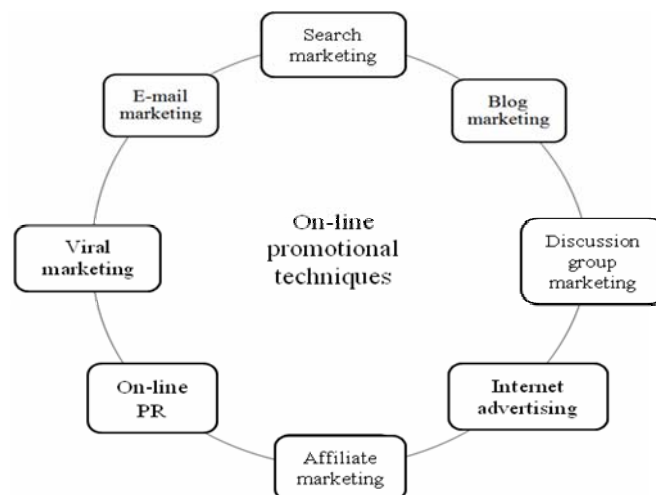


Figure 1. The actual on-line promotional techniques

There are numerous instruments of promotion on the Internet, that is, on-line promotional techniques that are available to marketing sector of every company. Currently, the most common on-line promotional techniques are: search marketing, Internet advertising, public relations on the Internet (on-line PR), viral marketing, affiliate marketing, e-mail marketing, blog marketing and discussion group marketing (Figure 1). The above techniques are only part of a wider range of on-line techniques, which appear very quickly with practical technical development of the Internet. The hierarchy

of on-line promotional techniques cannot be done, because it will be different for each company in relation to the existing marketing strategy, the type of the activities of the company, the product's life cycle, brand recognition, competitive strategy, web development and more.

2. 1 Search Marketing

Just as a good location is important in the trade of products and services in the traditional way, it is also important on the Web [46]. The number of websites is growing with enormous speed. In 1995, there were two million registered domains in the world, and in 2004 that number reached 233 million [8, pp. 672]. In such conditions, it is essential to provide the easy way to find every website.

There are two basic ways to come to a website. The first is that the Web user knows in advance which website he will visit (knows the exact URL). Using the Web browser, user simply access to the desired website. Another way indicates the situation when an Internet user using a search engine comes to the website. The largest number of Internet users, even 90%, use search engines when they are looking for Internet resources [9, pp. 1].

Search results can be unpaid or paid. Unpaid (organic, natural) search results are "best" websites that match user's query (keywords, terms, phrases). Unpaid search results are most trusted and most visitors come to a website using them.

All the activities designed to improve search results, whether they are paid or not, can be considered as part of search marketing. Search marketing is also known as search engine marketing (SEM).

Websites, as the most common form of Internet presence, are not "visible" very often for Web browsers. This practically means that most of Internet users that have interest for website content will not be able to find it. That is why, there is a need to create a website according to the search engine requests. This practical need has created one of the key marketing techniques called search engine optimization - SEO [10]. Search engine optimization represents the application of techniques and tactics that enable better positioning of appropriate Web pages in search results for select keywords that best describe the search term.

The entire SEO process is divided into three main groups of activities: (1) optimization of a website on a technical level, (2) optimization of the website at the content level and (3) linking the website to other websites [5].

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The goal of optimization is to obtain better ranking in search results. What will be the ranking of search results depends on several factors, such as the position of a keyword on the website, the frequency of occurrence of the word on the website, the number of links, the frequency of clicking on the link, or website traffic and other. The importance of these factors varies between search engines and their search algorithms.

2.2 Internet Advertising

Internet advertising can broadly be defined as the use of the Internet as a medium by which advertising messages are transmitted through the computer screen [11]. Narrow understanding defines the concept of Internet advertising as transmission of the advertising messages to Internet users via websites, e-mails and computer programs that support advertising. The narrowest definition identifies Internet advertising as banners [50, pp. 302].

Internet advertising has a goal to create increased visibility of websites and increased the number of visits, to promote sales and to influence the development of brands [12]. Internet advertising is cheaper, faster, and intended for the audience of millions [13, pp. 20].

The most common forms of Internet advertising are banner ads and e-mail ads [14, pp. 251]. At the beginning of Internet development, the only mean of transmitting advertising messages were the banners, which are still the most common form of Internet advertising. Banners are the parts of Web pages showing advertising message in order to attract users to advertiser's website [15, pp. 463, 16, pp. 42]. Banners can be static, dynamic and interactive, and in the form of text, images, animations and videos¹. Banners are also hyperlinks. When user clicks on a banner, it usually opens website of a company, products, etc. (or, in the case of some interactive banners, click on banner causes additional information to be shown on the same Web page).

An important advantage of banners is an ability to determine their impressions according to the specific context of a website, users' behavior and their demographic and geographic characteristics [49, pp. 24]. If banners are not in line with the context of a website, they have very little promotional effect [46, pp. 64]. In 1998, the half of Internet users did not even watch banners during browsing through Net [17, pp. 317].

¹ Banners in form of animation, video, audio, video and audio streaming are referred as rich media banners.

Unlike most other Internet promotional techniques, banners require significant financial investment. There are three basic ways of payment in case of banners. The basic method of payment for publishing is called Cost per Impression (Cost per 1.000 - CPM), when an advertiser pays posting banners on a website after each thousands of visits. This method is taken from traditional advertising and it does not use opportunities brought by hyperlinks. The second way is Cost per Click - CPC, which implies a price that is paid for each click on the banner. The third way is the Cost per Action – CPA. That is the price the advertiser pays if users do certain wanted actions (for example, buy product) [18, 19].

CPC and CPA are two basic ways to set pricing for posting banners and are often used in affiliate programs that will be discussed as separate on-line promotional techniques (affiliate marketing).

2.3 Public Relations on the Internet

The Internet has greatly changed the traditional public relations, which is discussed in numerous studies [20, 21; 22; 23]. Public relations on the Internet (or on-line PR) are the set of all actions taken on the Internet in order to deliver message to users that might have an interest to accept it. In addition, on-line PR could be characterized as the set of all the actions taken, using the Internet, in order to attract the attention of the media, television, radio, newspapers, other websites and on-line forums. Everyone interested in the message could transmit it to others on-line. Shorter, on-line PR is not about how to bring visitors to the website, but it is about how to achieve positive “buzz” using website [24, pp. 59].

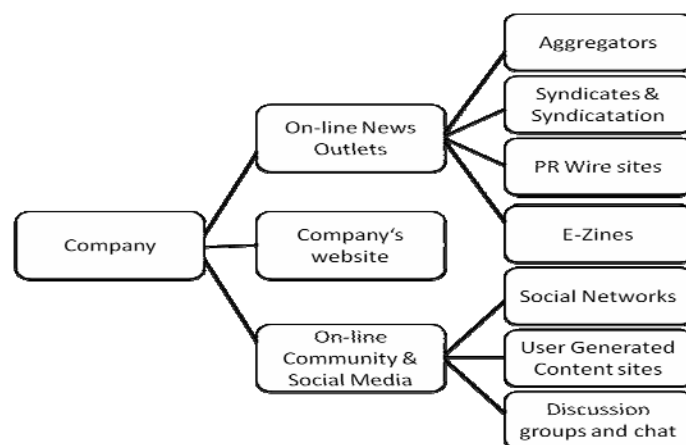


Figure 2. Ways of communication in the on-line environment [according to 5].

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The Internet has brought many new opportunities to communicate with the public and thereby significantly improve this type of on-line promotional technique. Varagić distinguishes three main ways of a company communications in the modern Internet environment: (1) communication activities within the company's website, (2) communication with the on-line news outlets and (3) communication with on-line communities and social media [5]. Varagić gives the almost complete list of communications in the on-line environment for each of the three main ways (Figure 2).

2.4 Viral Marketing

Viral marketing is a recent phenomenon in marketing [26, pp. 42] and still there are various debates about how to define it. One of the definitions described viral marketing as a strategy that encourages individuals to deliver a message to others and thus create the potential for exponential growth of exposure and impact of the message [27, pp. 88]. As a virus, such strategy has advantages of rapid multiplication of advertising messages. The main feature of this definition is exponential growth and transmission of messages to others. Based on the foregoing, it can be said that viral marketing consists of creating a "contagious" advertising messages, which will be transmitted from computer to computer with the ultimate goal of increasing awareness of the brand.

The subject of a viral marketing message can include pictures, jokes, quizzes promotions, advertising games (advergames), videos, electronic postcards, widgets, etc. [28, p. 126].

Viral marketing has positive results when the user understands and accepts the message, and when he is motivated to continue forwarding. However, the success of viral marketing still depends on various elements. There are six basic strategies that should be implemented to ensure the success of viral marketing campaigns: (1) enabling the use of free services or products, (2) enabling an easy transfer of the messages, (3) the provision of sufficient resources in the event of excessive customer demands, (4) researching common motivations and behavior of target groups, (5) the use of existing communication network because of the existing habits of Internet users and (6) taking advantages of other (additional) communication resources (links to other websites, free articles, etc.) for attracting visitors to a website [29].

The advantage of viral marketing lies in the fact that it can be easily included in other on-line marketing techniques and thus becomes an important part of the overall Internet marketing of a company.

2.5 Affiliate Marketing

A special type of Internet advertising represents affiliate marketing. Affiliate marketing (or advertising) is a term that is often used to describe a program determined by website that allows other websites to promote products and services and to receive compensation for that. Affiliate marketing programs can represent one of the most powerful Internet marketing techniques [30, pp. 46]. Website can create own affiliate programs or can be included in affiliate networks [31]. In affiliate marketing organizations share profits with the agent (affiliate), which directs customers using advertising with banners and links placed on their websites, e-mails or paid advertisements on search engines.

One of the key marketing segments of affiliate marketing is the affiliate networks. They allow companies to enter into partnerships with other companies and intermediaries. The partnership works in the way that intermediaries usually place the link of companies on its website, thus they can direct users to desired websites. When potential customers click on that link, go to the website and meet the desired action (fill a form, make a purchase, and participate in the survey), agent earns commission that is agreed in advance [31; 32].

There are several significant advantages to using affiliate marketing: flexibility, low costs, lack of need for hiring new employees, and an unlimited number of products and services that can promote the global market [33, pp. 7].

It is often said that this form of Internet promotion does not bring the desired effects because the Internet is flooded with numerous affiliate programs. However, this cannot be completely true if knowing the fact that the number of Internet users is still growing rapidly and that they all will purchase goods and services over the Internet. Affiliate programs will have a special role in the countries where the Internet has yet to experience the expansion.

2.6 E-mail Marketing

Effective marketing in today's business involves communication via e-mail. Even when companies or individuals have no presence on the Internet, the possibility to communicate via e-mail is considered. The average Internet user spends more time reading and sending mail, rather than "surfing" Web [34].

E-mail marketing is a vital part of Internet promotion related to the website (on-site) and off-site promotion. A large number of Internet users

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after one visit to a website will never go back. Nevertheless, if the visitors e-mail is recorded, then it is possible to re-establish contact [35].

Baggott distinguishes four main reasons why e-mail is a great tool for marketing and promotion: (1) e-mail is easy to use, (2) the use of e-mail is not expensive, (3) e-mail is interactive type of communicating and (4) e-mail allows collecting data on consumers [36, pp. 21].

E-mail offers more than just attracting user's attention and directing them to buy products and services. E-mail helps to keep in touch with consumers and to affect their feelings toward certain products and services [18]. With that in mind, key objectives of e-mail marketing can be singled out: (1) creation of demand, or reaching new customers, (2) retention of existing customers, (3) creating brand awareness and empowerment of market position, (4) encouraging potential customers to purchase and (5) providing information related to these goals.

When considering the application of e-mail promotion, two key factors are extremely important: the creation and keeping up-to-date mailing lists and creating the content of the message.

There is a market for buying, selling and renting e-mail address. However, far more value than the purchased or rented e-mail address has a list of e-mail addresses that have been prepared by the company itself in the process of corresponding with customers, registering on Web pages, filling Web form or questionnaires. This way of e-mail promotions belongs to the so-called "permission marketing", which means asking from Internet users permission to send them e-mails with particular content [34, 37, pp. 96].

By registering users to mailing lists, companies avoid sending unwanted messages that can be treated as spam². Spam is often treated as an attack on the privacy of Internet users³. A sender of spam can be considered as someone who violates Internet ethics⁴. Bearing in mind, every e-mail message must have clearly stated possibility for deleting of user from the mailing list.

² Spam is the junk e-mail, or e-mail a user did not requested. They usually represent advertisements or sale offers [16, pp. 485]

³ The development of the Internet brought new techniques of data collection that are questionable in terms of privacy of Internet users [38, pp. 19].

⁴ Internet ethics can be characterized as Internet behavior related to the unofficial conventions that promote the effective, or polite, or friendly on-line behavior. This type of behavior is often called Netiquette. Netiquette can be defined as how should and how should not act in on-line communications or as basic on-line decency. Netiquette violation may be considered unethical, although it is not illegal [39].

Content of an e-mail message should be of interest to the target group. It must have some value for the recipient, and also must build or sustain market position of product, service or company. Content of an e-mail message may vary between different industry sectors, but key types of general e-mail content can be following: products, services or press releases, newsletters, research, promotional activities/special offers, information on website updates, etc [34].

2.7 Blog Marketing

Unlike some websites, blogs are an example of user-generated content. Since 2004, blog becomes one of dominant ways of presenting individuals and companies by providing fresh and authentic information [25, 51, pp. 123].

A blog as a separate website cannot be included in the on-line promotional techniques. However, the blog as a separate form (part of the website content) has been developing rapidly as companies were realizing its promotional value. Today, blogs are planned to be a part of company websites in order to achieve the objectives of the promotion. In that sense, blogs can be classified into one of the techniques of Internet promotion called blog marketing.

Blog marketing could be described as marketing that involves the use of websites that are primarily made up of personal and professional observations in the form of diary or journal [40, pp. 59].

There are several important reasons why companies are using blogs as a form of Internet presence. Blogs have great visibility on search engines and they can be used as a direct communication channel with customers. They are also a mean for creating a market brand, a tool for differentiation allowing personal relationships with customers and providing the better introducing to market niches. Blogs are the good tool for building on-line reputation, allowing expression of personal views and visions, but also they are great mean for internal communication within companies [41, 47, pp. 68].

In the blog marketing, there are six objectives of the blog use: (1) informing and educating the public and current customers, (2) providing customer services, (3) creating an image of the company identity, (4) amusement of blog users, (5) encouraging users to take the action, and (6) encouraging dialogue with existing and potential customers. Most companies combine several previously stated objectives within the same blog, but there is also a practice of creating parallel blogs [42, pp. 14].

2.8 Discussion Group Marketing

Discussion group marketing is often omitted from the list of promotional techniques on the Internet. This is usually done because the discussion group is often considered to be just a technique of on-line PR. However, some authors [43, 44] emphasize the importance of discussion groups in the promotion. It should be added, that the discussion groups are "older" than the Web. Still Web is the place where the most of Internet promotion took place. Discussion groups previously were only available through special readers; currently they are available through the Web browser.

Today a large number of discussion groups are commercialized, but there are still those with loyal members running various discussions. As there are discussions about various topics, they can be seen as a targeted segment of users, if the topic of discussion matches the type of a product or a service offered by a company.

There are several significant benefits that can be used in the Internet promotion when it comes to discussion groups: (1) contact with potential customers (via a message), (2) communicating with existing customers, (3) doing market research, (4) build a reputation and (5) increasing website traffic.

The first step in the discussion group marketing should be the identification of those discussion groups that match a company product profile. Posting comments can be done at the same time in several groups (cross-posting). This is useful when a company is present in several groups that have a similar topic. However, the process of posting same comments in different discussion groups that have different topics is considered as spam. A large number of newsgroups explicitly prohibit advertising. Still, there are discussion groups that are dedicated to advertising topics, so that the advertising efforts can be directed to those discussion groups.

Finally, it should be noted that, unlike the Web, the promotion using discussion groups have the significantly smaller audience and therefore could not be the main promotional techniques in Internet promotion strategy. However, it should not be excluded, but used as a specific mean of promotion [43, pp. 207], because it can be an effective mean of creating interest about the product [45, pp. 31] in the specific target groups.

Conclusion

Website makes a key element of Internet promotion and represents the final destination where potential customers will be attracted by a variety of existing promotional techniques. Currently, very actual on-line promotional techniques are: search marketing, Internet advertising, on-line PR, viral marketing, affiliate marketing, e-mail marketing, blog marketing and discussion group marketing. Featured on-line promotional techniques were created because of technological development of some segments of the global world network. The importance of individual on-line promotional techniques change over time, and their use depends on the specific situation in each company, or even of each particular product. At the same time, on-line promotional techniques itself are developing continuously, providing new opportunities for promotion advancement of companies and their products and services.

Good knowledge of basic on-line promotional techniques and websites makes the basis of the promotion on the Internet. Having information about the characteristics and new features of the actual on-line promotional techniques is an imperative for the people involved in Internet marketing in every company.

References

1. Belch E., G., Belch A. M., Advertising and Promotion, an Integrated Marketing Communications Perspective, Irwin/McGraw-Hill, Boston, 1997.
2. Milovanović S., Osnove formulisanja strategije elektronskog poslovanja preduzeća, Ekonomske teme, 2008/1, pp. 11-20.
3. Ćuzović, S., Sokolov-Mladenović S., Unapređenje kvaliteta elektronske usluge u funkciji satisfakcije potrošača, Ekonomske teme, 2009/2, pp. 43-58
4. Chaffey D., Ellis-Chadwick F., Mayer R., Johnston K., Internet Marketing - Strategy, Implementation and Practice, Pearson Education Limited, Harlow.
5. <http://www.draganvaragic.com>
6. <http://www.marketing-online.co.uk>
7. Roldan M., Marketing Plans for E-commerce Projects, In Bidgoli H. (ed.), The Internet Encyclopedia Vol. 2, John Wiley & Sons, Inc., Hoboken, 2004.
8. Kasi V., Jain R., Internet Search Engines, In Khosrow-Pour M. (ed), Encyclopedia of E-Commerce, E-Government, and Mobile Commerce, Vol. 1, Idea group reference, Hershey, 2006.
9. Viney D., Get to the Top on Google, Nicholas Brealey Publishing, London, 2008.
10. Morgan N., Pritchard A. (2000): Advertising in Tourism and Leisure, Butterworth-Heinemann, Oxford
11. <http://www.businessdictionary.com/definition/online-advertising.html>

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Promotion Possibilities**

12. <http://www.active-domain.com/online-advertising/online-web-site-advertising.htm>
13. Đuričin D., Strategijska analiza ljudskih resursa, *Ekonomске teme* 2009/1, pp. 1-46.
14. Manolis C., Averill N., Brooks C. M., Modeling the Effects of Attitudes Toward Advertising on the Internet, In Clarke I., Flaherty T. B. (eds), *Advances in Electronic Marketing*, Idea Group Publishing, Hershey, 2005.
15. Perreault Jr. W. D., McCarthy E. J., *Basic Marketing, A Global-Managerial Approach*, McGraw-Hill, New York, 2002.
16. Tasić V., Bauer I., *Rečnik kompjuterskih termina*, Mikro knjiga, Beograd, 2003.
17. Afuah A., Tucci Ch., *Internet Business Models and Strategies*, McGraw-Hill Higher Education, New York, 2003.
18. Šapić D., *Marketing za treći milenijum – Marketing na Internetu*, Pešcanik M, Beograd, 2002.
19. <http://www.definethat.com/define/291.htm>
20. Holtz S., *Public Relations on the Net*, AMACOM, New York, 2002.
21. Breakenridge D., DeLoughry T. J., *The New Pr Toolkit*, Prentice Hall, Upper Saddle River, 2003.
22. Aronson M., Spetner D., Ames C., *The Public Relations Writer's Handbook*, Jossey-Bass, San Francisco, 2007.
23. Scott D. M., *The New Rules of Marketing and PR*, John Wiley & Sons, Inc., Hoboken, 2007.
24. Krstić M. Internet marketing i online PR, <http://www.milosblog.com/fajlovi/OnlinePr-InternetMarketing.pdf>, 2003.
25. Varagić D., Blog kao način shvatanja i prihvatanja intenzivnijeg korišćenja Interneta, uključujući poslovnu i promotivnu primenu, www.draganvaragic.com, 2008.
26. Kovač Žnideršić R., Marić, D., Viral Marketing as a Specific Form of Internet-Based Marketing of Products and Services, *Ekonomске teme*, 2008/4, pp. 41-49.
27. Kirby J., Viral marketing, In Kirby J., Marsden P (eds), *Connected Marketing, The Viral, Buzz and Word of Mouth Revolution*, Butterworth-Heinemann, Oxford, 2005.
28. Lindgreen A., Vanhamme J., Viral Marketing: The Use of Surprise, In *Advances in electronic marketing*, Idea Group Publishing, Hershey, 2005.
29. Soldo K., Demistificiranje viralnog marketinga, http://www.grapnet.com/page_net.php?id=351&oid=304, 2004.
30. Slivar I., Tourist Affiliate Program while Using Online Booking System with Possibility of Entering B2B Code, *International Scientific Journal Turizam* 1, 2009/1, pp. 46
31. Borelli A., Holden G. *Affiliate Millions*, John Wiley & Sons, Inc, Hoboken, 2007.
32. Soldo K., Affiliate marketing logičan korak u mrežnom marketingu http://www.grapnet.com/page_net.php?id=350&oid=304, 2004.

Uglješa Stankov, Nevena Ćurčić, Vanja Dragičević

33. Palmer J., High Performance Affiliate Marketing, <http://www.affiliateconfession.com/2008/01/30/super-affiliate-jeremy-palmer-gives-away-his-ebook/>, 2006.
34. Cox B., Koelzer W., Internet marketing in Hospitality, Pearson Prentice Hall, New Yersey, 2004.
35. Chaffey D., Total E-mail Marketing, Butterworth-Heinemann, Oxford, 2003.
36. Baggott C., Sales A., Email Marketing by the Numbers, John Wiley & Sons, Inc., Hoboken, 2007.
37. Ivanovic A., Collin P. (2003): Dictionary of Marketing, Bloomsbury Publishing, London
38. Stanković Lj., Stošić D., Unapređenje konkurentske prednosti razvojem društveno odgovornog marketinga, *Ekonomске teme* 2008/3, pp. 17-29.
39. Džonson D. DŽ., Kompjuterska etika, Službeni Glasnik, Beograd, 2006.
40. Dacko S. G., The Advanced Dictionary of Marketing: Putting Theory to use, Oxford University Press, Oxford, 2008
41. Wright J., Blog Marketing, McGraw-Hill, International editon, 2006.
42. Gardner S., Buzz Marketing with Blogs, Wiley Publishing, Inc, Hoboken, 2005.
43. Sweeney S., 101 Ways to Promote Your Web site, Maximus Press, Gulf Breeze, 2005
44. Wilmshurst J., Mackay A., The Fundamentals and Practice of Marketing, Butterworth-Heinemann, Oxford. 2002.
45. Bickart B., Schindler R. M., Internet Forums as Influential Sources of Consumer Information, *Journal of Interactive Marketing*, Vol. 15, No 3, 2001, pp. 31-40.
46. Stankov U., Dragičević V., Pavlović T., Search Engine Visibility and Language Availability of Travel and Tourism Websites In Serbia, *International Scientific Journal Turizam* Vol. 13, No 1, 2009, pp. 58-64.
47. Dyrud M. A., Worley B. R. Schultz B., Blogs: Getting Started, *Business Communication Quarterly* 2005, str. 67-73.
48. Sherman L., Deighton J., Banner Advertising Measuring Effectiveness and Optimizing Placement, *Journal of Interactive Marketing* 15 (2) 2001, pp. 60-64.
49. Ha S., An Intelligent System for Personalized Advertising on the Internet, *Lecture notes in computer science* 2004, pp. 21-30.
50. Mangani A., Internet Advertising: Market Structure and New Pricing Methods, In Bauknecht K., Madria S. K., Pernul G. (eds.), *Electronic Commerce and Web Technologies*, First International Conference, EC-Web 2000, London, 2000.
51. Ćurčić N., Kvalitativna ocena sredstava turističke propagande i primenjenog kartografskog materijala u funkciji unapređenja promotivnih aktivnosti u turizmu, doktorska disertacija u rukopisu, Novi Sad, Prirodno-matematički fakultet, 2007.
52. Ćurčić N., Prezentacija turističke ponude Srbije na Internetu, *Glasnik Srpskog geografskog društva*, sveska LXXXVI (2), 2006, pp. 277-286

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**ON-LAJN PROMOTIVNE TEHNIKE KAO FAKTOR
UNAPREĐENJA PROMOTIVNIH MOGUĆNOSTI VEB SAJTOVA**

Rezime: Broj veb sajtova na Internetu raste ogromnom brzinom uz istovremenu pojavu novih tehnika Internet promocije. U takvim uslovima, Internet marketing uglavnom podrazumeva upotrebu veb- sajtova u kombinaciji sa on-lajn promotivnim tehnikama. Trenutno najzastupljenije on-lajn promotivne tehnike su: marketing pretrage, Internet oglašavanje, odnosi sa javnošću na Internetu, viralni marketing, afilijativni marketing, imejl marketing, blog marketing i marketing diskusionih grupa. Poznavanje karakteristika i mogućnosti konkretnih on-lajn promotivnih tehnika nameće se kao imperativ za nosioce marketing aktivnosti.

Ključne reči: Internet, Veb, marketing, promocija.



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Year XLVIII, N° 3, 2010, p. 435 - 449

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MORAL STANDARDS AS THE KEY PERFORMANCE OF CORPORATIVE BUSINESS OPERATION

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Abstract: *In order to achieve their business goals, modern companies need to adopt the most important standards of corporative business operation, as modern technological manufacturing processes and information systems, a well-developed distribution and sales network, accepting changes in technology and informatics, a successful management and satisfied employees. On the other hand, standards within the framework of moral values have been perceived as main sustainers of the given performances, making the basis of any business activity. To understand the nature of corporative business operation and the relationship of companies towards the customers and the wider public, it is necessary to analyze the core of operation from the standpoint of companies, to get an insight into the nature of business activities, along with the resulting obligations and responsibilities which are based on respecting fundamental moral standards in relationships towards the employees, customers, public, society and the state.*

Keywords: *moral standards, ethics, corporative operation, morally responsible behavior.*

1. Introduction

Company benefit, regarding profit, market share and positive financial performances, needs to be realized and achieved in harmony and accordance of achievement of "benefit" of the public and potential customers, i.e. "benefit" of the local community and the wider society in which the company is operating. Managing the company based on the

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UDK 174, Review paper

Received: 29.09.2009. Accepted: 08.09.2010.

principles of acknowledgement, acceptance and respect of all moral aspects of the market environment results in a rather different approach to corporative operation than the traditional approach, with the shareholders' interests being the most important. To achieve both their business goals and the above mentioned harmony in business relationships, modern companies need to adopt business standards, as modern technological manufacturing processes and information systems, a well-developed distribution and sales network, accepting changes in technology and informatics, successful management and satisfied employees.

While all the above mentioned standards are equally important for market success and survival, standards within the framework of moral standards have been perceived as the main sustainers of given performances and drivers of the entire business environment. Outstanding business results, profit and customer satisfaction may be achieved only by socially (morally) responsible companies and employees, which are operating based on precisely defined ethic codes and rules of behavior. Accordingly, as the key element of creating an advantageous business environment, it is necessary to analyze the core business operation from the standpoint of the company and to conduct a so called micro-analysis of the corporate operation. It is necessary to get an insight to the nature of resulting business activities, which have been based on respecting moral standards in the relation of companies towards the employees, customers, public, society and the state. Also, the following questions need to be answered: What are the main drivers of moral standards? Who has the main responsibility of their establishment, maintenance and application in running the corporate business policy?

2. Moral Standards in General

Both in the form of principles and rules, moral standards are the main elements of moral, essential to identification of the nature of moral attitudes. In fact, these are requirements, adequate human affinities and attitudes by which individuals are affected and motivated to behave according to these standards [10, p. 62]. In order to discern and differentiate moral standards from the other practical standards as the common sense or the generally accepted social norms and rights, their three essential properties need to be considered.

First, moral standards are autonomous standards, affecting only individuals which are accepting them willingly. By this property they are differentiated from heteronymous legal and social norms, but not from the standards of common sense and personal affinity [10, p. 63]. Moreover,

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moral standards are having the tendency of universal application in the sense that individuals by which they are accepted believe that these standards apply to the others as well. From this follows that these standards are different from personal desires, common sense and social practices, but not always from legal norms. Finally, considered as more important than the other rules of human behavior, moral standards are of special relevance, sometimes even overruling these, e.g. the standards of personal affinity and common sense [10, p. 63]. While there are a high number of moral standards existing, they are grouped by some authors into the following three categories [14, p. 24]:

- *Standards within the legal framework* – the key question here is what like they should be and whether to respect them or not.
- *Standards within the framework of economic and social issues, beyond legal issues* – usually called "human values". These are dealing with the specific ways in which one individual should treat the others. In addition to the moral terms of sincerity, truthfulness, honesty, etc. these also include avoid hurting, making-up the damage voluntarily, etc.
- *Standards within the framework of religion* – standards which are based on religious scriptures and teachings have been considered by many philosophers as essential for establishing good and honest relationships towards the other people, i.e. the society and the community. In Christianity, for example, these moral standards and norms have been based on God's moral principles expressed by The Ten Commandments.¹ As opposed to Christianity, other religions (Buddhism, Islam, Hinduism, etc.) have no established Commandments. Instead, each of them has established specific moral standards and norms defining the relationship between men and the Supreme Being as well as relationships between men.

The way in which moral standards have been established, analyzed, accepted and maintained or abandoned is the basis of individual and social

¹ The Ten Commandments, or Decalogue, are a list of imperatives that, according to the Bible, were received by the people of Israel from God on the Mount Sinai through the prophet Moses, after they crossed the Red sea and were delivered from the slavery in Egypt, around 1.200 B.C. They are part of a compilation known as the "Law" ("*Tora*" in Hebrew), or the "Law of Moses". Briefly, the list of the Commandments is as follows: You shall not murder, neither shall you commit adultery, neither shall you steal, neither shall you bear false witness against your neighbor, honor your father and mother and love your neighbor as yourself; You shall not covet your neighbor's wife; You shall not covet anything that belongs to your neighbor. For a detailed discussion, see Biblija (1988), *Pet Knjiga Mojsijevih*, Dobra vest, Novi Sad.

moral development, i.e. the basis of relying on: a) dialogue and compromise in resolving social conflicts; b) commitment to freedom, peace, non-violent behavior and changes; c) the importance of improving the quality of environment and supporting national and ethnic diversity [15, p. 5). These standards are of permanent moral value and of high importance for the life of individual, i.e. if we believe in moral at all. Note that perceptions on good and bad, or evil, are subject to the society or some of its parts. Moreover, moral standards and norms in the society, religious communities, companies, etc. are also changing as the function of internal changes in these organizations.

3. Moral Standards of Corporate Operation

The company's concern for supporting moral business standards is driven by a multitude of factors. Some of these factors are resulting from the business environment, while the others from the wider social framework, through laws, policies, etc. To learn more about these drivers and the basic elements of corporate moral standards, respondents of the 2005 Global Study of Business Ethics of the American Management Association/Human Resource Institute, were asked several questions regarding the drivers of business ethics today and their expectations of what will be the drivers in the next 10 years. The most frequent answer to the question about the reasons for which companies are running their business in a socially responsible manner was "to protect a company's brand and reputation" [1, p. 3]. In the light of recent scandals and the disasters caused by these to the companies and their management, this is an expected and reasonable answer. These answers seem related to those regarding consumer trust, investor confidence and public appraisal (Table 1), which are ranked third, fourth and fifth.

Table 1. The five main factors affecting ethic corporate business operation

Number	Factor	Ranking
1.	Protection of brand and good reputation	4,26
2.	Right thing to do	4,17
3.	Consumer trust and loyalty	4,08
4.	Investor confidence	4,01
5.	Public appraisal	3,98

Source: American Management Association (2005), *A Global Study of Business Ethics 2005 – 2015*, Copyright AMA/HRI, p. 49.

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More interesting and perhaps more surprising was the second ranked reason for operating in a socially responsible and ethic manner which is the desire "to do the right thing". This indicates that instead of perceiving ethics from the pragmatic business standpoint, many employees are perceiving it from the standpoint which has been affected by moral and values [16, p. 7]. Interestingly, when asked to look 10 years into the future, respondents have come to the same ranking of reasons, indicating their stable ethic behavior over the time.

When asked to list the most important factors of the business environment by which moral standards are affected and the employees' dilemma shaped – i.e. does the company operate in ethic manner, should the employee held responsible for conducting unethical business practice – the answers were more dynamic (Table 2). The top-ranked basic priorities are the same, joined by threatening scandals and the role of investors and customers. Here, however, market has been also considered an important factor, both regarding competition and globalization. These two drivers are possibly related by the employees and the management.

Table 2. The five main factors affecting corporate business activities

Business factors	Present ranking	Ranking in 10 years
Corporate scandals	1	4
Market competition	2	2
Investor requirements	3	5
Consumer pressure	4	3
Globalization	5	1

Source: American Management Association (2005), *A Global Study of Business Ethics 2005 – 2015*, Copyright AMA/HRI, p. 50.

In the previous Table the employees' expectation regarding the ranking of business factors in 10 years, is also shown. The five most important drivers of corporate behavior are the same, only their ranking being changed depending on the way future is perceived by the employees. Respondents also believe that globalization will be the number one business driver of ethics in 10 years' time, while scandals are expected to have a decrease in their importance.

When asked to list the factors from the external (non-market) environment by which moral standards could be affected (Table 3), employees responded that today laws and regulative are the most important moral standards of corporate operation, which will be the case in the future

as well. One factor that jumps out as being a lot more important in the future is the "corporate social responsibility" (CSR), shifting from the eight position to the third. An even greater shift may be the increasing importance of "environmental issues", which respondents predict to be the second most important external driver of business ethics in 10 years, as compared to its ninth position today. Many business professionals seem to expect for environmental issues to grow in their importance. This trend has been related to the corporate social responsibility movement. This may foreshadow the increased development of "green" business practices during the next decade.

Table 3. The main external factors shaping corporate moral standards

External factors	Present ranking	Importance	Ranking in 10 yrs	Importance
Legal: laws, regulative	1	3,88	1	4,32
Economic environment	2	3,64	4	4,01
Political environment	3	3,52	9	3,79
Social values	4	3,45	6	3,93
Privacy	5	3,43	8	3,84
Global security level	6	3,43	5	4,00
Technology	7	3,38	7	3,93
Social responsibility movement	8	3,33	3	3,84
Environmental issues	9	3,32	2	4,07
Social pressures	10	3,27	10	4,19

Source: American Management Association (2005), *A Global Study of Business Ethics 2005 – 2015*, Copyright AMA/HRI, p. 51.

In transition countries, as well as in EU candidate countries, the market environment and corporate operation are shaped by similar moral standards as in well-developed countries, the only difference being in their priority (ranking). According to results of the research conducted on the market of the Republic of Serbia in 2009 by the team of researchers from the project "Preduzetnik" ("Entrepreneur", see the web site www.preduzetnik.com) in cooperation with "Evropska inicijativa za razvoj preduzetnistva", the given issue was taken seriously both by the consumers and the employees; they are well aware of the importance of operating in a morally responsible way and are ready to support initiatives and activities the aim of which is to create a morally and socially responsible market environment. The basic factors by which moral standards and socially responsible operation have been shaped are shown in Table 4; here, also the rankings for each criterion are shown (rated on the scale between 0 through 10)

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Table 4. The five main factors of importance for moral standards and running socially responsible business activities on the market of the Republic of Serbia.

No.	Factor	Importance
1.	Consumer trust and loyalty	8,96
2.	Public appraisal	7,18
3.	Right thing to do	6,48
4.	Foreign investors confidence	6,01
5.	Protecting company brand and reputation	5,98

Source: www.preduzetnik.com; date of accessibility (23.07.2009).

Respondents believe that consumer trust and loyalty are the key drivers (rated 8.96) of running socially responsible operation on the Serbian market. Similar is the belief in the region's neighboring countries: Croatia – 8.32, Bosnia-Herzegovina – 7.98 and Bulgaria – 7.43. The fact that only companies focusing their business activities and policies on the benefit of consumers and the public, and changing the way of operation which has been predominant in recent decades, may success and achieve positive results and public appraisal, is confirmed by such a high ranking of this indicator.

Public appraisal is the second ranked indicator (rated 7.18). By this indicator, the level of accepting the product by consumers, the wider public, the consumers' movement, the media, the organizations of public interest etc. is indicated. Without the above mentioned support it is difficult to achieve advantageous market results, especially when it comes to introduction of a new product to the market. In this context, the public pressure on government institutions to accommodate the basic laws of consumer protection to modern trends in the world is also a very important factor. The company's belief regarding the correctness of the product it manufactures and sells, i.e. all its activities may be called "*right thing*", is also an important indicator (rated 6.48).

Also a high importance is given by our respondents to the pressure regarding certain behavior, imposed through investments by foreign companies to companies by which the domestic market has been served (rated 6.01). To protect the company's brand and reputation honestly, which implies the analysis of consequences of a specific action upon the company image before it has been realized, is the last ranked indicator (rated 5.98).

Respondents were also asked to list the highest threats to moral standards in Serbian companies and on the Serbian market. Results are shown in Table 5.

Table 5. The five main factors by which moral standards of the markets of Republic of Serbia are affected adversely

Business factors	Present ranking
Company scandals	1
Business pressures	2
Globalization	3
Investor requirements	4
Market competition	5

Source: www.preduzetnik.com; date of accessibility (23.07.2009).

Notably, answers to the questions of the American Management Association are in agreement with the answers of our respondents, who believe that the highest threat to market operation comes from corporate scandals and financial misconducts. An example for such business operation has been revealed in 2008 in the "Agroživ" company in Zrenjanin. Here, after discovering financial misconducts and corruption, a large number of managers were arrested, the company was brought to bankruptcy and almost all the subsidiaries of the parent company were shut down. This is only one in the series of examples proving the fact that top management, primarily focused on personal benefit and creating scandals, represent the highest threat to harmonious relationships on the market. In our market, an obviously adverse effect of globalization has been observed as well (3rd position). There is a belief existing in the public that globalization leads to mutual dependency, resulting in an increasing gap between the developed and underdeveloped countries, affecting domestic companies adversely. Globalization has been evaluated as fatal to the workers. Many people have been hurt by globalization, especially in less developed countries, lacking a network of social protection. Namely, both the extent to which workers can affect the result of their work and their negotiation power has been decreased. Investor requirements and competition pressure have been ranked last (positions 4 and 5). In order to survive in fierce market competition, with foreign companies often having a privileged position (especially regarding tax relieves); companies in the Serbian market are mainly forced to avoid ethical guidelines and moral standards.

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3.1. Corporate Scandals

The highest threat for moral standards and socially responsible operation in a company comes from corporate scandals. They are of many different types, but the most common are financial misconduct, illegal manufacturing and sales (weapons, narcotics, drugs, etc.), pollution of the environment, manufacturing unhealthy or deadly products, etc. Indeed, under the term corporate scandals we could imply disrespect towards moral standards and procedures in business activities, i.e. their violation, both by the company management and by the other employees. In order to take this problem and its consequences seriously, the full awareness of the employees is required in such situations.

The American based company Enron has become the brand for scandals which have ridden the companies in the first half of this decade. But this wasn't the only case where the investors' trust in corporate ethics and behavior had been shaken. American based companies Adelphia, WorldCom and Tyco (all accused for financial misconduct) are only some of the best known names caught in serious scandals and illegal and immoral activities. Mainly as the response to such scandals in the US, the "Sarbanes-Oxley" act (SOX) has been enacted in 2002. It has been called the most important law since the 1930s' which affects company management. The goal was to protect investors by requiring companies to:

- set higher standards of reporting and transparency,
- hire external auditors to help reducing fiscal misconducts,
- establish an independent auditing body [5, p. 267].

To adopt these, companies have to do certain things, e.g. to embed ethics training for the employees and establish confidential proceedings for reporting misbehavior. Companies are also required to protect whistleblowers and prevent retaliation. Criminal penalties for violation of SOX are determined based on several factors. One of these is whether the company had an organized program for prevention and exposure of violation of the "Sarbanes-Oxley" Act, or not [8, p. 7]. Corporate violators may be fined or imprisoned, or both. For example, the Adelphia Corp. had to contribute to the victims' foundation with \$ 715 million which will help investors who have lost their money as the result of irregularities in the company [8, p. 6].

In order to reduce corporate scandals as the most serious threat to moral standards and ethic behavior, other governments have also introduced increasingly strict laws. The Public Disclosure Act 1998 of the UK is intended to provide legal protection for individuals who disclose information

so as to expose malpractice. Both those who expose malpractice from the inside and those who do it outside the corporate walls are highly protected by this Act [6, p. 47]. The South-Korean government has also introduced a model of business ethics: companies may be evaluated regarding 36 different indicators from areas such as management culture and corporate management.

3.2 Business Pressures

In addition to corporate scandals, market pressures are the second highest threat to moral standards, being one of the main factors stimulating the employees to expose immoral corporate activities. Moreover, respondents of the previously presented 2005 Global Study of Business Ethics of the American Management Association/Human Resource Institute believe that market pressures will be the greatest threat in 10 years [1, p. 5]. This is a simple verification of facts from business life: companies are pressed by the competition to achieve better results, which sometimes implies to "make ethic shortcuts in order to gain competitive advantage" [16, p. 7).

Respondents to the joint survey of the Columbia Business School (USA) and AMA/HRI, have also been asked to identify the three main reasons for which people will the most likely violate the company's moral standards. The top answer, by far, was "pressure to meet unrealistic business objectives/deadlines" (55% of respondents). "Careerbuilding" was the second ranked answer (29%), and the "desire to preserve the earnings" was the third (29%), (Table 6).

Table 6. The main market factors affecting companies to violate moral standards

Market factors	Present ranking	Importance
Pressure to meet unrealistic business goals/deadlines	1	4,25
Careerbuilding	2	4,01
Desire to preserve the earnings	3	3,96
Working in a cynical and amoral environment	4	3,56
Insufficient training/not understanding the unethical nature of an action	5	3,14

Source: American Management Association (2005), *A Global Study of Business Ethics 2005 – 2015*, Copyright AMA/HRI, p. 52.

Some other surveys have yielded with similar results. In a survey of the Society for Human Resource Management (SHRM)/Ethic Resource Center (ERC) in the US, 48% respondents stated that "setting highly

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aggressive business goals" is the main cause of violation of standards. This was closely followed by the "need to fulfill the bosses' orders" (23%) which could possibly also result from the need for improving productivity. Similarly, the "Watson-Wyatt Worldwide WorkUSA" survey (2004) found that 31% of employees are frequently pressed by the requirements imposed by their job to violate their personal standards and standards of behavior [6, p. 157].

Such pressure will likely create a cynical corporate culture, with ethics being not taken seriously. If corporations fail to maintain the "culture of different opinions", encouraging the employees to freely express their opinion, they will likely fail to criticize unethical behavior, fearing of retaliation or possibly having a strong desire to keep their job [8, p. 7]. This was reflected by the Watson Wyatt's 2004 survey. According the results of this survey almost 1/5 of respondents has stated that the employee by whom unethical behavior has been reported was perceived as a peace-breaker [8, p. 8].

3.3. The Role of Management

As the result of belief that good management is the key to success of any company, in the last decade the area of management had become a distinctive field. According to P. Drucker (1989), a renowned management theorist, the role of knowledge, previously treated merely as decoration, has been changed in 20th century by introduction of management into capital of the economy. Drucker said that "the use of high number of principles, which has been later called 'management', has been known for centuries, developing parallel to the human society and manufacturing relationships" [12, p. 2].

Some define management as science, some as skill; it is both science and skill. As science, it is based on theories and principles, the correctness of which is possible to verify and prove in practice, as well as on knowledge which could be learned and transferred. Management is also a skill; to reach goals and fulfill objectives requires the managements to master many skills, to be creative, to be able to reach compromise, etc. Company management may well be the largest individual carrier of culture and ethic behavior [8, p. 2]. Personal values and the strength of character of an executive have become critical issues of corporate operation [14, p. 26]. The survey of "Korn/Frerry International" and the Columbia Business School have found that personal ethics is believed by over 1.500 executives from 20 countries to be the most important single characteristic of an ideal leader. As highlighted by D. B. Staley, former executive of NYNEX, "When speaking of reputation and success of this company, we are depending on each single manager" [14,

p. 27]. In other words, the essence of business leadership is in personal integrity and personal characteristics of any manager. The AMA/HRI survey has also found that the two most important organizational processes of ensuring ethic corporate culture are related to management; the top ranking process was "having support and model ethical behavior", followed by the process of having "consistent communications from all leaders".

These findings are supported by other surveys as well. According to the ERC 2005 survey, with top management behaving ethically, employees will less likely (for 50%) behave unethically. In one word, improvements in the ethical environment are most efficiently supported from the top. Employees believe that any change in the company's normative domain starts with the chief executive.

Table 7. The basic characteristics of managers affecting the company's moral standards

Basic managerial characteristics	<u>Present ranking</u>	<u>Importance</u>
Leaders supporting and practicing ethical behavior	1	4,35
Permanent ethical communication from all leaders towards the employees	2	4,11
Leaders need to integrate ethics into the company goals and business strategies	3	3,96
Willingness to punish immoral actions	4	3,86
Willingness to reward those exposing immoral business practices	5	3,23

Source: American Management Association (2005), *A Global Study of Business Ethics 2005 – 2015*, Copyright AMA/HRI, p. 52.

Most of the executives are well aware of their influence and responsibility regarding ethics and running moral business activities, as well as of the support needed by the employees exposing unethical activities. For example, a 2004 global survey of senior executives, conducted by Booz Allen Hamilton and the "Aspen Institute" (USA), found that the most frequent and most efficient single managerial practice for strengthening corporate values has been realized through the support from the board of executives [1, p. 51].

4. Closing Remarks with Ethical Evaluation

The most frequent dilemma regarding unethical behavior is: Is it possible to predict unethical behavior and which moral standards of behavior make the foundation of morally responsible operation? Corporate ethics is a

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complex, multidimensional issue with far-reaching consequences. Since ethical crises are developing gradually, accelerating and losing control, it is highly important to have a monitoring system enabling early warning and taking corrective steps. Also, it is important for the employees (both lower level individuals and top management of the company) to be familiar with key moral standards, which are focused on:

Company values

- Values: core values are clear, appropriate and respected by the company.
- Openness: people are speaking without fear, challenging tradition.
- Honesty: the company's actions are honest, both inward and outward.

Internal policies

- Communication: information on the company (e.g. its visions, goals, future) is public, correct and timely.
- Enforcement: there are procedures of reporting and responding to unethical behavior.
- Employee relationships: performance is evaluated honestly, differences are respected.

External relationships

- Transparency: the company's actions are responsible towards both the environment and the community.
- Relations with the market/consumers: products are safe; competition is fair.
- Relations with the investors: information to the investors are correct, timely and complete.

A good company is acting ethically in all of these areas and fairly in all its dealings and with all stakeholders, both internal and external. If employees are introduced with these items, answers to the following questions become clear:

- Is there any moral issue?
- How serious and disadvantageous it is for the company and the public?
- Where is it located inside the company?
- How to resolve it?

Companies which are able to answer these questions and take appropriate steps, can possibly avoid ethical crisis and immoral corporate behavior, representing the basis of running morally and socially responsible business activities towards the potential consumers, the public, the employees, the society and the state. As such, they are able to protect and promote the most important **moral standard** – the "benefit" of both the local community and the wider community where they are operating.

5. References:

1. American Management Association, A Global Study of Business Ethics 2005 – 2015, Copyright AMA/HRI, 2005.
2. Alvin Day, L., *Etika u Medijima*, Medija Centar, Beograd, 2004.
3. Balj, B.; Čučković, A., *Prilozi za uvod u filozofiju*, IP Beograd, Zrenjanin, 2006.
4. Balj, B., *Prilozi za uvod u filozofiju*, IP Beograd, Zrenjanin, 2006.
5. De George, R., *Poslovna etika – Bussines Ethics*, Filip Višnjić, Beograd, 2003.
6. DesJardins, J., *An Introduction to Business Ethics*, McGraw-Hill, New York, 2006.
7. Donaldson, T., *Ethical Issues in Business: A Philosophical Approach*, Prentice-Hall, Nju Džersi, 1983.
8. Forcade, W.J., *The Ethical Enterprise, Doing the right things in the right ways, today and tomorrow*, The American Management Association, USA, 2005.
9. Grdelj, S., *Profesija i korupcija*, Centar za monitoring i evaluaciju, Beograd, 2005.
10. Koller, P., *Pravo, moral i vrlina*, Anali pravnog fakulteta u Beogradu – br.2., Beograd, 2005.
11. Lancaster, G.; Massingham, L., *Menadžment u marketingu*, Grmeč, Beograd, 1997.
12. Legatić, B., *Menadžment u zdravstvu*, <http://www.izzns.org.yu/>, 2006.
13. Miletić, S.D., *Ekonomska globalizacija kroz prizmu sociologa i ekonomista*, Univerzitet „Braća Karić“, Beograd, 2007.
14. Nesh, L., *Otkud sad poslovna etika*, Zbornik radova: Poslovna etika, Clio, Beograd, 2001.
15. Plavšić, M., *Moralni razvoj čoveka*, <http://www.see-ran.org/>, 2002.
16. Rosenthal B.S.; Buchholz A.R., *Rethinking Business Ethics: A Pragmatic Approach*, Oxford University Press, Oxford, 2000.
17. Schramm, M., *Unternehmens etic immerzeitafterder globalizirung*, Erfurt, 2000.
18. Subotić, D., *Korporativna poslovna etika*, IPS Beograd, Beograd, 2009.
19. Vučković, Ž., *Biznisi i Moral – osnovi poslovne etike*, Cekom books, Novi Sad, 2005.
20. www.arhi.com.au/scripts - Human Resources Institute.
21. <http://search.amanet.org> - American Managenent Association.
22. www.preduzetnik.com

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MORALNI STANDARDI KAO KLJUČNA PERFORMANSA KORPORATIVNOG POSLOVANJA

Rezime: Da bi uspešno realizovale svoje poslovne ciljeve, moderne kompanije treba da poseduju najvažnije standarde korporativnog poslovanja, kao što su: savremeni tehnološki procesi proizvodnje, moderni informacijski sistemi, razvijena distributivna i prodajna mreža, uvažavanje novih tehnološko-informacionih promena, uspešan menadžment i zadovoljni zaposleni. S druge strane, kao glavni nosioci datih performansi figuriraju standardi u okviru moralnih vrednosti, koji čine temelj i početak svake poslovne aktivnosti. Da bi se razumela priroda korporativnog poslovanja i odnos kompanija prema potrošačima i široj javnosti, neophodno je analizirati srž poslovanja iz ugla kompanije, proniknuti u prirodu sprovođenja poslovnih aktivnosti, u obaveze i odgovornosti koje iz toga proizilaze, a temelje se na poštovanju osnovnih moralnih standarda u odnosima prema zaposlenima, potrošačima, javnosti, društvu i državi.

Ključne reči: Moralni standardi, etika, korporativno poslovanje, moralno odgovorno ponašanje.



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Year XLVIII, N° 3, 2010, p. 451 - 463

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QUALITY OF HUMAN RESOURCE MANAGEMENT AS A KEY FACTOR IN THE SUCCESS OF A TOURIST ORGANIZATION

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Abstract: Every tourist company is exposed to the challenges of globalization and constant changes in the market. As one of the most successful requests for overcoming all problems and changes in the environment is the achievement of a high level of quality of customer services. Tourist consumers want high quality services, delivered with an appropriate price, in the appropriate time. Human resources in the development of the tourist industry must be viewed as the center of value, and considered as a capital investment for each tourist society. The focus of this paper is on the key role of human resources in the area of management in the tourism industry. The capability and quality of management, together with the quality of service and expertise manpower at all levels, can give excellent results. This paper will show the success factors of tourist business in the dependence of the ability of management to manage human potential and use it as a development resource.

Keywords: tourism, quality of tourist service, human resource management

Introduction

Today, organizations operate in extremely complex conditions, characterized by intense change, constantly intensifying competition, choosy users/clients and globalization. Such business circumstances affect the need

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UDK 005.96:338.48, Review paper

Received: 09.04.2010. Accepted: 08.09.2010.

for reviewing all the factors that affect the business organization and constant review of management methods.

Tourism as an economic activity today is in extreme expansion. Competition occurs from all parts of the world. Clients are becoming ever more demanding and choosy. Organizations that deal with tourism as an economic activity are faced with the need to operate as rationally as possible on one hand, and on the other hand design their services as originally as possible. By achieving quality of services the tourist company is able to meet all the requirements and expectations of tourists. Quality as a performance that needs to be reached on all levels of business becomes the strategic task for management. Since 1980 in a vast number of industries and markets, quality has become what buyers believe it should be, and taking into account the demands of consumers in terms of quality, activities are undertaken for the quality performance of all functions in enterprises [6, pg.100]. Part of the process of creating quality is also the way people behave as members of a team or how they care for their visitors or customers. Quality is the result of treatment by the employees, their training, company operation, as well as the result of the structure, system and strategy of the company.

In conditions of openness of the world market and high competition, competitiveness and profitability of tourism will much depend on the skills and knowledge of tourist management, but on a quality, creative and professional work force as well. The pleasure of guests, and thus total tourist revenue, depends on their quality. In a very dynamic and complex environment human resource management gets a new dimension and becomes an increasingly important strategic issue for success in tourism. The basic starting point of this work is the standpoint that the center of tourist business is the guest /client, his needs and wishes, and this requirement can only be met by a satisfied, motivated and creative tourism employee. The quality of services provided depends on the quality of the staff and thus the competitive advantage of the tourist organization that is providing the services. Therefore, if we go from the fact that guests are the greatest asset, then it is an imperative to ensure adequate management of employees who will retain and enlarge this asset.

The question of the importance of human resources for a tourist organization is not debatable, and stems from the very nature of this specific service. Much more complex, however, is the question of how can this remarkable and complex resource, which is significantly different from all other resources, be set as a function of organizational performance in the provision of tourism services? We must look for the answer to this question in the analysis of the factors that influence people's behavior in an

Quality of Human Resource Management as a Key Factor in the Success of a Tourist Organization

organization and modern management methods, which make up the content of the concept of human resource management as a theory and practice. On the way in which we identify, activate and develop human resources in the process of the realization of entrepreneurial goals, significantly depends the overall quality of the offer and services in tourism. Seeing how the primary relationship in tourism is between the service provider and recipient, the way in which an organization treats people directly reflects on these relations. That is why special attention in this paper is focused on how the methods and techniques of human resource management need to shape the tourist organization to ensure success through people.

Basic Settings for Quality Business of a Tourism Organization

The basic condition for ensuring the vitality of a tourist enterprise and its ability to respond to ever more sophisticated demands of consumers is its capability to create and maintain a competitive advantage based on quality. In order to achieve this, it is necessary for a tourist organization to develop a service-oriented approach to business, which includes the following [13, pg.64]:

- Understanding of the value that consumers receive by consuming or using the organization's offer and knowledge of how the services by themselves, or together with information, physical goods or other types of tangible attributes, contribute to this value; understanding of how the overall quality of the relationships with consumers is perceived, how this value is achieved and how it changes over time;
- Understanding of how the organization (people, technology and physical goods, systems and consumers) can produce and deliver the perceived quality and value;
- Understanding of how the organization should be developed and managed in order to achieve the desired perceived quality;
- Creation of the function of the organization in a way that its perceived quality and values are achieved, as well as the goals of all the parties involved (organizations, consumers, others...)

The given facts mean that an organization must understand the following: perceived quality and values that consumers seek in the service competition; how to create value for customers; how to manage available resources in order to create this value.

The quality of a service is defined as the totality of the properties and characteristics of the service that affect its ability to satisfy expressed or implicit needs. That is a definition of quality that is clearly directed towards

customers. It suggests that a company offers quality whenever its service meets or surpasses the needs, requirements and expectations of customers. A company that meets most needs of its customers in most cases is a company of quality. [18, pg.125]

The basis for understanding quality in the service context is, when defining and determining it, the consumer's view, or his understanding and perception of quality. Therefore, quality is what the consumer, or target market segment, considers it to be. Quality is, according to this, the ability of a service to meet and go beyond consumer expectations.

To ensure the quality of services of a tourist organization, it is necessary to establish an effective human resources management system. Successful management of human resources is vital for a service organization. Inseparability of production and consumption for many services means that customers are actively involved in the process of providing the services and are often exposed to actions and attitudes of the employees. The nature of services requires different types of human resource management from those required in the production of natural products [24, pg.10]. This is particularly pointed out in literature in the field of management of services, and that it is an imperative to have the right staff in place to provide the services, because they influence the perception of the quality of the service provided, as well as the fact that actions of the staff are a part of the product that the customer is buying.

Human resources, especially qualified personnel, are the most important for ensuring the quality of services of tourist companies. As a key feature of tourist services we can identify complexity, which is determined by the connection of a whole range of economic and non-economic activities with various technical, technological and organizational characteristics. In this sense the tourist product can be viewed as a unique "amalgam", in whose creation, at the same time, participate producers as well as users [3, pg.34]. They bring into it their characteristics, concepts and styles of behavior, which creates a combination of tangible and intangible elements.

Given that the quality of a service is based on the perception of fulfillment of expectations and meeting the needs of the user, service encounter in tourism significantly determines the quality of the services provided. [1, pg.14] This means that the subjectively experienced process of interaction between the provider of the services and the recipient plays a crucial role in the perception and experience of the services. Managing human resources deals with a set of decisions and policies, through which an organization attracts, recruits, motivates, rewards and improves its employees.

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Characteristics of Human Resources in Tourism

The analysis of the factors of success in services, especially in tourism as a specific and complex service activity, showed that the importance of human resources for the success of tourism organizations is undeniable. It is not, however, just about the people at the front line of servicing, but also the creators of the tourist services, as well as the management of a tourist organization. In the hands of management is the driving lever, which creates and runs entrepreneurial energy, and connects and harnesses the power and potential of all the employees. The success of a tourist organization depends, therefore, on all the employees and the extent to which they support each other in the process of providing services and creating a so-called "network of services" in which each employee provides a service to another, in order to service the end user with as high quality as possible [7, pg.207]. In such an organization the pyramid (an expression of organizational structure) is upside down, and in its foundation are the managers, who provide the vision and spread awareness about the mission, and customers/users are at the top of the inverted pyramid, as the ultimate purpose and goal. Communications run both ways and information about users from the "first-line of servicing" is the basis for continuous improvement of services. Employees on the "front line" shape the user's experience and directly affect the image of the organization [21, pg.49].

All this confirms the high level of dependence of tourism services on human factors, or the ways of connecting, presenting and providing tourist services. Even other elements are basically dependent on human factors, and it can be said that tourism as a specific service industry is an expression of man's creative energy.

When it comes to human resources, the tourist sector has some special features compared to other service companies. Most staff working in the tourist business in our country, as in the world, is not sufficiently educated. Secondly, short-term contacts and freelance jobs are very common, often due to seasonal work. Salaries are in most cases small, and working hours are not always the best. Because of all this, the flow of labor here is much higher than is usual in other sectors. The quality of tourist services depends on the employees in the tourist industry. There are several factors that determine the quality of services in the tourist service industry, among which the most important is human resource and satisfaction at work [11, pg.125]. A crucial indicator of employee satisfaction is job security. Ensuring permanent employment in tourism is very problematic, because of the seasonality of business activity which implies seasonal employment. Third, and last, tourism is difficult for building a career in the traditional

sense. All of the above affects the level of innovation, since it is unlikely that someone who is not committed to a long-term company will have motivation, knowledge or experience to contribute to the development process of the given enterprise in tourism. On the other hand, this can be an advantage. Large flow of the labor force leads to exchange of personnel between companies in a certain area which can increase the transmission of knowledge. This, of course, requires that executives of the companies are ready to accept new ideas that their staff can present [17, pg.32].

It is not enough to simply state that the human factor is a key determinant of the success of a tourist organization and determine its specificity. Such cognition does not bring results and is not enough to ensure competitive advantage and market performance. It's just a starting point for understanding the possibilities and ways that human potential, as an opportunity and presumption, can be turned into power and advantage of an organization and to realize economic value. That is the reason that we view this resource as a potential which, through appropriate allocation and management decisions, can become an exceptional value for the organization. Depending on the way that we manage these resources, human resources will become the driving force or the limiting factor of growth and development of a tourist organization.

Management of Human Resources in the Function of Improving the Quality of a Tourist Service

Further discussion on the importance of the existence of a quality human resource management system in tourism stems from the very specificity of these resources. We start primarily from the fact that human resources are not like other organizational resources. People have their own interests, goals, characters and points of view. Employees are individuals with their own egos and are willing to invest their knowledge, skills and energy for organizational goals only if in this way they are achieving their own goals or meeting their needs. An organization and an individual are in a relation of interdependence, from which both parties can derive profit under certain conditions [12, pg.118].

It is the modern approach to human resource management that offers a framework for successfully satisfying the needs and goals of employees and their alignment with organizational objectives. The new approach to the human factor in an organization was created as a result of the organizations being faced with competition in a global environment and open market, from which came the need for reducing operational costs. Organizations gain increased awareness of the importance and possibilities of human potential.

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In this context, the work force often begins to be referred to as intellectual capital [20, pg.21]. Before the management of human resources, as a theory and practice, a new task is set of turning intellectual capital into value for the organization. We start from the assumption that a human is a resource, a potential, which with appropriate management procedures and skills can create economic value for an organization. Significant changes in approach and understanding are in the sphere of responsibility for human resources, which is from functional areas that are responsible for personnel transferred directly to managers of all levels and which underlines the strategic importance of human resources. This assumes a long-term assessment of strengths and weaknesses of the human resources from the aspect of opportunities and threats from the environment. Human resource management has a primarily developmental and dynamic character, as opposed to an administrative-organizational and bureaucratic approach to the personnel (HR) function, which is a direct expression of the need of adjusting to environment variables [15, pg.367]. Flexibility of an organization in terms of rapid technological change is possible only if its employees are ready for constant learning and professional development.

The modern approach to human resource management includes leverage which directly affects the performance of individuals and the organization. Performance is modern concept of human resource management which stems from the following characteristics [8, pg.65]:

- Strategic character that includes linking business strategy and human resource management;
- Observation of employees from a management perspective and responsibilities of managers at all levels with the advisory and coordinating role of human resource professionals;
- Connection and instrumentality of individual's goals to organizational goals, or commitment of employees;
- Approach to employees as human capital;
- Dynamic and developmental character.
- Interconnection of all processes in human resource management.

For the business of a tourist organization, it is of crucial importance to identify links between performance of employees and performance of the organization, or the quality of management of the performance of employees and the quality of the tourist service [4, pg.24]. It is important to note that there is no one best way to work, or a set of practices that when implemented in an appropriate way can increase the performance of a tourist enterprise. If this could be done, human resource management systems would be easily

copied and imitated and thus would lose their strategic character. This flexible perception of the importance of management of human resources for improving the performance of tourist companies recognizes that what is adequate and gives results in one company will not necessarily correspond to another organization. What is important is the manner in which the employee strategy connects with the strategy of the organization. Every tourist company should develop its own model that describes the impact of its employees. Companies must understand their resources, to put them to use in the right way, connect them with the business strategy and invest into their development. This is crucial because the lack of motivated and trained staff will disable the provision of a service of high quality and thus shall not achieve the necessary level of customer satisfaction. The aim of tourist business is the same: a satisfied guest, but the ways to achieve this goal are different and are obtained precisely from the approach to human resource management.

Generic Functions of Human Resource Management

Human skills, motivation and commitment do not come to stand out by themselves, so it is important that managers find the right formula for the discovery and use of this precious resource. In this regard, particularly important are generic functions of human resource management in a service oriented travel organization [9, pg.130]. That is why it is necessary to observe which are the main functions and in which way they affect the performance of the tourist organization. The way in which the processes of human resource management are shaped in a tourist organization strongly determinates the attitude of the employees towards work, the organization and its goals, and thus the overall organizational effectiveness.

Through review of relevant literature in this field, as generic functions, which directly affect the results of tourist organizations, the following have been identified: selection, development, evaluation of performance and rewarding. In order for human resources to be a factor of success of a tourist organization, it is necessary to model these functions and base them on strategic criteria, to have motivational and developmental effects and be directed at generating business results. In shaping these processes it is necessary to start from the following principles [10, pg.76]:

- All processes need to be interconnected and together make up a unique concept of human resource management,
- All processes should be based on unique strategic criteria,

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- Ways and processes of managing human resources should express key values of the organization and send their employees certain messages,
- Processes need to be managed by managers with expert assistance from professionals for human resource management.

The interactive nature of tourist services, the intensifying competition on the market, the level of customer standards and choosiness, and the secondary nature of the needs in this field indicate the need for each organization to devote full attention to the planning of human resources. Planning is a complex process of predicting future needs for human resources and the activities that can satisfy those needs. On this process depends whether the tourist organization will in a future time face the lack of personnel and knowledge for the realization of strategic goals, or will have the problem of excess staff, which is always an awkward situation with a negative energy climate. For business of a tourist organization it is very important to ensure adequate human potential, which has the necessary prerequisites for further development. Therefore, full attention must be given to finding (recruiting) adequate staff and the appropriate selection of candidates that best match the requirements of jobs in tourism. However, the acquisition of adequate staff is only the first step, which remains incomplete if insufficient attention is devoted to constant development and motivational factors.

The key generic function of human resource management is the development of employees. Tourism is a very specific activity which itself determines the number of business engagements and their sustainability, thus completely depends on the work intensity of the employees. Their ability and efficiency, however, depends on good professional training, which includes lifelong learning [19, pg.45]. It is very important that maximum attention be paid to education that improves the ability of people to be flexible, professional, communicative and willing to meet the different needs of users of services in tourism. Therefore, the future of the tourist industry is in the hands of education.

The development of human resources in a tourist organization is one of the key functions of human resource management due to the specificity of this activity. Given that the tourist industry is subject to rapid changes caused by technological developments, changing tastes of customers and competition from all over the world, the employees in this area require a high degree of flexibility and professional mobility, which can be provided only with the help of a continuous and well thought out concept for

development. Development may include a whole range of designed and planned activities aimed to acquire new skills and capabilities necessary for future tasks. It is primarily education in the function of developing new knowledge, abilities and skills. Due to the complexity of the content of work in a tourist organization and the use of new information and communication technologies, employees should planned and continually attend seminars to improve their knowledge. Jobs in tourism have a seasonal character and are subject to constant change. Therefore, they require flexibility and mobility of employees. This is possible to obtain through a rotation or planned change of jobs, which enables the identification of potential and the gain of new knowledge and skills [14, pg.145]. In this context, attention should be paid to the design of work which allows deepening and expanding business in accordance with the requirements and evaluation by the manager.

A motivational effect is provided through a system of rewarding and valuing performance, as the basis of feedback on results and a foundation for further development, training and assignment of new jobs. Particularly important elements for a tourist organization are elements such as conduct, responsibility, reliability, attitudes and attitudes toward the service users, as criteria for evaluating work performance. A tourist organization should specifically assess its relationship with users of its services. These elements should be subject to evaluation and at the same time have a stronghold in the job requirements, as they significantly affect the successful work of a tourist organization.

A well designed system of rewarding can as a motivational factor influence the increase in work efficiency and quality of performance of tasks. A poor reward and salary policy, which employees consider insufficient or unfair, is often the cause of lack of motivation for work and a negative climate in the organization [5, pg.14]. All this reflects on the level of service, as an unsatisfied, existentially unsecured worker cannot concentrate on work and provide satisfactory services to customers. If we look at the specifics of a tourist organization, which can be expressed as complexity, multi-functionality, strong interaction with users of the service (in the process of delivery, as well as creation of the service), a high degree of competition and customer demands, we come to the conclusion that the system of wages in a tourist organization should meet the following requirements: the basic salary needs to express the value of work according to the following elements: complexity (multi-functionality), responsibility (in relation to the overall goals of the organization in relation to risks, meeting the needs of users, liability for resources, etc.), required knowledge and level of education, work experience (routine, skills, knowledge of the

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market, etc.) and working conditions, that the basic salary upgrades based on the value of individual performance (skills, expertise, value on the external market), that the value of work and individual performance is increased by measurable work results in relation to standards or verified targets, and that stimulation is provided to groups, in order to promote cooperation on jobs that are interconnected and build healthier interpersonal relationships [16, pg.187]. In this way, a tourist organization can through a reward system support its strategic criteria and link earnings to commitment, which would positively affect overall business results. The management of a tourist organization is thus required to greatly engage in the creation of a system of rewards, as well as monitor individual work results.

Conclusions

A tourist product is approached as a chain of services which arose to meet the needs of ever more demanding visitors. Services are provided in a particular area, in a certain time period, environment, and other conditions. In order for a service to be attributed with quality, it is necessary for it to in all its segments meet the expectations of tourists, but to overcome them as well, and to offer the market products of a defined quality, today is considered a condition for survival.

The concept of quality itself is in the sense that a product or service meets the consumer's needs and expectations. Therefore, all strategies based on quality standards are based on good knowledge of consumers. However, as far as tourists are concerned, the satisfaction with a tourist destination and services depends not only on the direct service providers, but also more extensive factors such as: hospitality, safety, health insurance, traffic, attitude towards guests, etc.

This paper presents the view that the quality of tourist services above all depends on the ability of management to manage human resources and to use them as a development resource. All management levels must be aware of the importance and training of personnel, the effects of applying their knowledge and the importance of motivation of employees in the tourist sector. It is generally known that man is the driver and bearer of all activities in the economy and society, and influence of the human sector on global economic development is becoming more and more complex. Human resources are a fundamental factor of every company. The importance of "hard" variables is being reduced in enterprises (finances, processes, technology, and structure), while "intangible" resources are becoming more and more important sources of added and newly created value of companies (participants, intellectual capital, and creativity).

The focus of this work is the claim that the human factor is crucial for success in tourism. However, human resources are not on their own a key factor in the success of a tourist organization, therefore it is necessary for management to create, through certain methods and instruments, such conditions as to develop the potential of the employees, encourage motivation and identification in order to positively affect the performance of the organization. Such methods and instruments are offered to us through the modern concept of human resource management. For this purpose, it is necessary to take appropriate action towards all factors that influence the behavior of employees in an organization. An analysis of the factors of success in services, especially in tourism as a specific and complex service activity, showed that the importance of human resources for the success of a tourist organization is undeniable.

Long-term success in tourism is limited by the pace of introduction of standard business processes and procedures for quality control of services, that are introduced in order to "impose" the same standards to all those participating in the creation of the tourist product, and guarantee that guests receive quality and efficient services. Long ago we realized that only a happy employee can give the best results, no matter what the line of work. Therefore, talking about quality is important, but making a decision on its implementation and actually doing it, is responsible and exceptional.

References

1. Armstrong, M., Human Resource Management Practice, 8-th edition, Kogan Page 2001;
2. Bakić, O., Strategijsko planiranje turističkog proizvoda, Narodna knjiga, Beograd 1988;
3. Bartunek, J., First, Second and Third Order Change and Organizational Development, Journal of Applied Behavioral Science, vol. 23, no.4, p.23-29 1997;
4. Baum, T., Human Resources in Tourism. Human Resources in International Tourism, Butterworth Heinemann, Oxford, pp.3-21. 1993;
5. Baum, T., Managing Human Resources in the European Hospitality. Tourism Management, p. 91-111. 1998;
6. Baum, T., Unskilled work in the hospitality industry. International Journal of Contemporary Hospitality Management, 15(3), p.207-209. 1998;
7. Cascio, W., Managing Human Resources. McGraw Hill. 2003;
8. Choy, D., The Quality of Tourism Employment. Tourism Management, 16(2), p.129-137. 1995;
9. DeCenzo/Robbins, Human Resource Management. John Wiley & Sons. 1999;
10. Dessler, G., Osnovi menadžmenta ljudskih resursa. Data Status, Beograd. 2007;

Quality of Human Resource Management as a Key Factor in the Success of a Tourist Organization

11. Gajić, T., Upravljanje razvojem turizma Južnobačkog okruga. PMF, Novi Sad, str.118-129. 2009;
12. Gustafsson, A., Johnson, D., M., Natjecanje u uslužnoj ekonomiji. Mate, Zagreb. 2006;
13. Lucas, R., Social policy in tourism. The Hospitality Industry, Tourism and Europe, Cassell, London, p. 135-165. 1999;
14. Miner, J., Crane, D., Human Resource Management – The Strategic Perspective. Harper Collins College Publishers, p.65-73. 1995;
15. Noe, R., A., Hollenbeck, J., R., Gerhart, B., Wright, P., M., Menadžment ljudskih potencijala, Mate, Zagreb. 2006;
16. Nordin, S., (2003) Tourism Clustering & Innovatin. ETOUR, Ostersund.
17. Pfau, B., Measuring The Link Between Human Capital and Shareholder Value. Journal of Cost Management, January/February, p. 123-135.. 2003;
18. Price, L., Poor personel practice in tourism industry, does it matter? Human Resource Management Journal, 4(4), 44-62. 1996;
19. Pržulj, Ž., Menadžment ljudskih resursa. Institut za razvoj malih i srednjih preduzeća, Beograd. 2002;
20. Riley, M., Labour markets and vocational education. Human Resources in International Tourism, Qxford, p.47-59. 1999;
21. Stone, Th./Meltz H., Human Resource Management in Canada. Rinerhart and Winston of Canada, Toronto. 1988;

KVALITET UPRAVLJANJA LJUDSKIM RESURSIMA KAO KLJUČNI FAKTOR USPEŠNOSTI TURISTIČKE ORGANIZACIJE

Rezime: Svako turističko preduzeće izloženo je izazovima globalizacije i konstantnih promena na tržištu. Kao jedan od najuspešnijih zahteva za savladavanje svih problema i promena u okruženju jeste postizanje visokog stepena kvaliteta pruženih usluga. Turistički potrošači žele visokokvalitetne usluge, isporučene po odgovarajućoj ceni, u odgovarajuće vreme. Ljudski resursi se u razvoju turističke industrije moraju staviti u centar vrednovanja, odnosno smatrati kapitalnom investicijom za svako turističko društvo. Fokus rada je na ključnoj ulozi ljudskih resursa u području menadžmenta u turističkoj delatnosti. Osposobljenost i kvalitet menadžmenta, udružena sa kvalitetom usluga i stručnosti radne snage na svim nivoima, može dati izvanredne rezultate. U radu će biti navedeni faktori uspešnosti turističkog poslovanja u zavisnosti od sposobnosti menadžmenta da upravlja ljudskim potencijalima te da ga koristi kao razvojni resurs.

Ključne reči: turizam, kvalitet turističke usluge, menadžment ljudskih resursa



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FACULTY OF ECONOMICS
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Year XLVIII, N° 3, 2010, p. 465 - 477

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THE YOUTH'S ENTERPRISING BEHAVIOUR –THE RESEARCH RESULTS FROM SERBIA

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Abstract: According to some experiences of developed countries, the young who start their own business for the first time, represent a very important category for development of enterprise climate at the national economy level. The ambience where young people can be stimulated to start their own business is not developed enough in Serbia. Possible solutions can be the education and encouragement of the young to start and perform their own business. Stimulating enterprising behaviour of the young is especially important in transitional countries which are faced with recession. The authors of this paper analyze the necessity of implementing a modern enterprise concept on the territory of the Republic of Serbia, with a special attention to the role of young people and the opportunities of their involvement in enterprise activities. The results of two researches, carried out in 2008 and 2009 among Serbian students are compared and shown here. The theme was: enterprise and enterprising behaviour of the young.

Keywords: enterprise, young entrepreneurs, small and medium size enterprises, competitiveness, knowledge.

1. Introduction

Enterprise is a continuous creative process of implementing innovations in organizations [12], with the aim of successful business performance and solving problems of consumers and the society as a whole.

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UDK 005.961:005.914.3, Review paper

Received: 09.04.2010. Accepted: 08.09.2010.

Modern organization has to be based on enterprise concept of behaviour. In order to become able to take over innovations systematically the present company has to make the appropriate organizational structure which enables employees to behave enterprisingly, in other words, to implement a system of relations and connections which will make possible focusing on enterprising behaviour.

Enterprising behaviour in a modern organization is not related only to one person and his/her abilities and experience but is, more and more, related to team work. Because of that a model of corporative enterprise [8, 24, 25] has been developed, which initiates team work; the members of the team are motivated to work on achieving success and accepting risks. Big companies have to initiate enterprising behaviour in order to overcome problems which occur while learning how to work with partners and collaborators.

Draker [13, pp. 82] thinks that every big company must be able to do three crucial things simultaneously – to improve, to expand and to innovate. Draker says that he still hasn't seen such a company, but that a great number of companies working on it exist.

Most developed countries respect the following principles that are valid for labour market, especially when the young and their employment are in question: unemployment of the young is greater than unemployment of adults and the rates are at least doubled; increase of formal education of the young is becoming more important and this trend will continue in the future; young people are afraid of getting married because of social insecurity so they decide to get married later ; participation of women in employment is more noticeable; labour market's programs for the young generally have small rate of return.[3, pp. 1]

State administrations of developed countries are trying to find new solutions for employing the young, whereas development of enterprise abilities and self-employment are especially emphasized as possibilities for individuals to define their own model of business and development. Governments of developed countries consider self-employment as a measure that enables solving problems of poverty and employment of the young so they support development of small business. Confirmation for these actions is based on a greater number of possible benefits and the following are stressed: enterprise promotes innovations and creation of new work places; enterprise and starting their own bussines have a direct influence on employment increase based on creating new work places at the very beginning and in the near future; new small firms increase their competitiveness in national economy by making benefits for consumers;

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young entrepreneurs can respond flexibly to market's demands, especially from the standpoint of implementation of new technologies and trends follow-up; greater self-employment of the young makes possible building self-confidence, as well as social welfare. [3, pp. 5]

There is a great number of studies dealing with motivation [21], intentions [9] – elements which influence enterprising behaviour and starting-up business in different ways [14, 16, 22], in other words, enterprising behaviour of the young and students [6, 16] and self-employment [18]. This trend is expanding, concerning time (historical) and space (geographical) dimensions [7]. The reasearch which results are presented in this paper is based on one part of these studies.

2. Analyses of Competitive Abilities of Domestic Companies

Competitive position of Serbian companies concerning good reputation on the world market is extremely bad. Domestic companies mostly haven't invested appropriate business efforts in building good reputation, as an element which influences their market position and competitive abilities. According to Global Index of Competitiveness of World Economic Forum [23], Serbia finished the year of 2009. as 93rd country out of 133 countries. (**Table 1**). In front of Serbia are Slovenia, Montenegro, Croatia, Macedonia, Hungary, Romania, Bulgaria, and the countries such as Panama and Khazastan. Only Bosnia and Herzegovina is lagging behind Serbia, taking 109th place.

Table 1: Ranking the countries of West Balkans according to competitiveness in 2009 [23]

Country	Place
Slovenia	37
Montenegro	62
Croatia	72
Macedonia	84
Serbia	93
Bosnia and Herzegovina	109

Old-fashioned technology, poor quality, unattractive packaging and high prices are the main reasons for bad competitiveness of Serbian products even in the nearby surroundings. The least competitive are manufacturing industry, producing metal and electronics, where hasn't been any technological innovations for years. Business people consider that import and tax relaxations, reducing state taxes, as well as prices for electrical energy, gas and petrol are necessary for increasing competitiveness. It is

necessary to raise the level of technological equipment, because the average age of machines in Serbia is 30 years. Comparing to the region, the delay is about 12 years. Serbian economy has technological delay of 29.5 years comparing to EU. This is proved on representative sample of 154 small, medium and big companies within six economy branches with similar production programmes.[1] The comparison was done with textile, food, pharmaceutical, mechanical and chemical industry, as well as with building material industry. Austria was taken as a criterium because of its similar natural, social, population characteristics in relation to Serbia. Companies from the field of textile (35 years) fall behind mostly, then companies from mechanical industry (34,5 years). Pharmaceutical companies are the least behind, with 21 years of delay. From the regional observation, equipment, tool and other manufacturing means are mostly behind in south Serbia (41 years), and the best situation is in Bačka (18,5 years). In Belgrade, falling behind is 20,5 years.

According to data from The World Bank, the market of Republic of Serbia is also poorly marked. The World Bank has published, for the 7th time, a report “Doing Business” which aim is ranking of the countries according to the quality of bussines surroundings. Unlike similar reports which mark regulations, “Doing Business” marks business practice.(Table 2).

Table 2: Ranking of West Balkan countries according to the report of the World Bank for 2009. [19]

Country	BiH	CRO	MK	MNE	SRB	SLO
Total index	116	103	32	71	88	53
Start-up business	160	101	6	85	73	26
Building licence	136	144	137	160	174	59
Employement	111	163	58	46	94	162
Registration of estate	139	109	63	130	105	108
Receiving credits	61	61	43	43	4	87
Protection of investors	93	132	20	27	73	20
Paying taxes	128	39	26	145	137	84
Trade across the border	63	96	62	47	69	84
Conducting contracts	124	45	64	138	97	60
Closing business	63	82	115	44	102	40

In the last five years 80% of Serbian economy growth has been based on three sectors – finance, trade and telecommunications but there is no direct export from these sectors. Similar trend can be noticed in other developing countries, too. In order to stimulate export, direct investments in production sector are necessary. Comparing to the countries in Central and Eastern Europe, Serbia is a country with the smallest participation of foreign

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direct investments. Serbia is behind Romania, Poland and Bulgaria, the countries which are among ten most attractive locations for investments.

According to the data of International Organization for Standards, in 2008 there were 2091 organizations in the Republic of Serbia which implemented Quality Management System according to the requirements of international standard ISO 9000 (according to the ISO survey for 2008 [15]). No matter how many organizations have implemented quality system and how developed is the quality movement in domestic economy, general results are still unsatisfactory. The results of the research dealing with analyses of competitiveness in domestic companies (May-June 2007, market of Republic of Serbia) point to the following:

- The interviewed respondents stated the following main obstacles in development of competitiveness in domestic companies: lack of knowledge – 24,8%, old-fashioned equipment and technology – 24,1%, inappropriate usage of modern methods and techniques of management – 16,54%, insufficiently stimulating business ambience – 8,27%, lack of financial means – 8,27%. internationalization of business in domestic companies – 2,34%.
- The interviewed respondents noticed the following necessary elements for developing competitive abilities of domestic companies: permanent improvement of knowledge both of executives and employees – 20,74%, standardization of business quality – 20%, development of enterprise culture in business surroundings – 17%, investments in development of national brands – 14,8%, developing the concept of corporative enterprise of the organization – 8,88%. [20]

3. Analyses of Conditions for Enterprise Development in the Republic of Serbia

For successful transformation of the economy, going from plan to market one, it is important to strengthen private sector and its future development. The development of small and medium-size enterprises (SME) is very significant for privatization because it enables acceleration of privatization – SME represent autochthonous private sector and they enable the development of domestic private capital.[10]

Development of SME sector represents one of basic priorities in our economy. Serbian Government adopted the strategy for development of competitiveness and innovations for SME for the period from 2008 to 2013. This strategy should contribute to further strengthening and efficient use of

developing potentials of SME sector which will have positive effects on economic growth of the Republic of Serbia. This direction should contribute to increase of competitiveness and exports, to further strengthening of companies' capacity, dynamic development of employment and to more equal regional development.

In the Republic of Serbia, small and medium-size enterprises participate in total number of companies with 99,8%, with 65,5% in employment, with 67,6% in turnover, with about 36% in gross domestic product. In total export the sector SME participates with 50,2%, in import with 64% and with 51,2% in investments in non-financial sector. Micro companies are dominant in SMC sector with participation of 95,6% from the total number and they employ almost 50% from the total number of employed.[2]

According to the last year (2009.) data, in the Republic of Serbia almost 40.000 small businessmen closed their business, among them 3.455 are economic organizations and 34.909 enterprise shops. The reasons for closing business are, according to them, heavy state strain, slow payment, lack of favourable credits and high interest rates. According to the survey carried out by National Agency for Regional Development the main problems for businessmen are lack of means and administrative obstacles. In practice, business people have problems with liquidity and impossibility to charge claims and, in the same time, the state forces them to pay their obligations in certain time. The consequences are heavy banking debts and their further degradation.

In order to support start-up business the Serbian Government passed the programme for favourable financing of beginners. The planned amount for start-up financing is 2,2 billions dinars. From 2007 to 2009, 6.625 new companies were opened and 21.121 workers employed by the help of Ministry for Economy and Regional Development, National Office for Employment and Fund for Development, which indicates justifiability of this programme. Entrepreneurs can also apply for start-up credits in amount from 500 thousand to 1,3 million dinars, with annual interest rate of 2,5% and maturity payment date from 3 to 5 years, with delayed payment period of one year.

According to the data of National Employment Office, in February, 767.418 unemployed persons were registered, which is a rise of 16.000 persons comparing to the January. The data from 2009 also show that young people make 26,7% out of the total number registered and that the biggest group make the young from 25 to 29 years of age, or 94.380, behind them are those from 20 to 24 years of age, or 78.640 of them. These data about

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unemployment point at the fact financial means offered by Serbian Government are not sufficient to include all those who need them. The problem especially concerns people who represent the most important resource of the society.

Unfortunately, the young do not have enough business experience and domestic firms hardly employ them. Because of that Serbian Government decided to support financially the firms which employ a certain number of unemployed people by giving them free means and it started the program for employing young people “The first chance 2010”. In other words, the aim of this program is to provide young unemployed people with voluntary work lasting three months in a company and also to give them an opportunity to work for 12 months in order to get professional practice as trainees.

4. Researching the Attitudes of the Young Concerning Start-up of their Own Business

The research called “The analysis of attitudes and opinions of the young concerning start-up of their own business” was carried out from 15th September to 24th December, on the sample of 520 students directed towards management. Similar research was also carried out a year ago, in 2008, including similar number of students (506) and similar structure of the interviewed. Its results are used, here, as relevant for the sake of comparison and completing the picture about the research theme.

The results from 2009 point at the fact that the majority of students, 80,73% of them want to start-up their own business. But, most of them (78,42%) say that they do not have any idea what to do, so it seems necessary to insist on developing enterprise skills within the enterprise concept taught at faculties and colleges.

The interviewed students are mainly oriented towards their own means concerning start-up of their own business (60,38%). The reason for that may be the consequence of insufficient trust in banks and other financial institutions which offer financial means for business start-up. The attitudes of the interviewed students are in favour of this (53,74%) because they think that credits offered by banks are not favourable. In other words, the students think that start-up credits are burdened with high interest rates (80,38%) and also with long waiting process concerning receiving financial means (14,42%). The data from 2008 showed that the students were not satisfied with start-up credit's conditions (54,03%) and they stated that high interest rates were to be blamed for that (33,79%).

The research from 2009 showed that more than half of the interviewed students (53,18%) were not informed about the existing means for business start-up. However, according to research results even 54,44% of the interviewed students were interested to become users of these means. For all these reasons it is very important to inform the young permanently via media, public presentations at faculties and colleges about these issues in order to provide them with real information about credits and conditions for getting them. Serbian Economy Chamber, Belgrade Economy Chamber, National Agency for Regional Development, Ministry for Sports and Youth and other institutions which aims are supporting the youth's employment and their education for business start-up should be included in these promotional activities.

The interviewed students stated that they mostly need the following knowledge: foreign languages (21,62%), the basics of enterprise and small business (20,66%) and the basics of management (17,37%). The data also indicate that the young understand the need for knowing business communications (13,32%) beside basic professional knowledge. Business communication skills within the company and also with business partners are of crucial importance for modern successful businessman.

According to students' opinions (88,08%) the ambience that would stimulate the young for business start-up is not favourable in the Republic of Serbia nowadays. The students mentioned the following obstacles: high taxes, unstable political and economic situation and long and complicated registration situation. In 2008. research the students were unsatisfied (78,70%) by the ambience for stimulating the young to start-up their own business. The biggest limiting factors are the same as in new (repeated) research, only the order is different. (**Table 3**). On the ground of these two research data it can be seen that the precondition for improving the SME sector is making the appropriate ambience that will stimulate creating new and developing the existing SME. However, three elements are necessary for creating such an ambience: laws/regulations, institutions and associations of entrepreneurs. Thus, a consensus between the state and its institutions and associations is necessary in order to make an appropriate ambience.

The greatest number of the interviewed in 2009 research, even 88,08% of them, thought that the state should have a key role in stimulating the young for starting-up their own business. The interviewed selected the following ways of support as very important : promoting the concept of the young as entrepreneurs and favourable credits. This attitude supported also 90,78% of the interviewed students in 2008 research – the ways of supporting are the same, but the priorities are different. (**Table 4**).

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Table 3: Limitations that inhibit the young to start-up their own business (part of the ambience)

Limitations	Research from 2009. (in %)	Research from 2008. (in %)
Too high taxes	35,52	10,02
Unstable political and economical situation	29,92	36,54
Long and complicated procedure of registration	21,62	13,75

Table 4: State ways of support for start-up business

The way	Research from 2009 (in %)	Research from 2008 (in %)
Promotion of the youth concept as entrepreneurs	25,38	26,86
Favourable credits	23,08	13,14
Market regulation	16,15	14,71
Laws/regulations concerning the young as entrepreneurs	14,42	11,76
Education and development of new business centers	10,38	15,10

The developed countries, as well as EU have special programmes for stimulating the concept of the young as entrepreneurs. Within these programmes there is cooperation among many institutions and the result is practical education of the young for managing companies. Our young people who do not have such experience find it hard to deal with it but efforts should be taken to improve that.

5. Directions for Developing Enterprising Behaviour in the Market of the Republic of Serbia

The aim of the global economy is to enable the regions to bring the wealth from the rest of the world. The regions should be equipped by highly educated and disciplined people led by a visionary leader, able to communicate with the rest of the world [17, pp. 256]. Some of those regions are Hainan island (south of China, province Guandong), Vancouver and British Columbia (Canada), Estonia, Ho Shi Min City (Vietnam), Primorska and the island Sahalin (Russia), Sao Paolo (Brazil), Kiushu (Japan).

American marketing professor of Indian origin, Mahajan, the author of the world marketing bestseller "Solution for 86%" says: "The state doesn't make business opportunities. Entrepreneurs make these chances. Whatever the state does it must stimulate enterprise. It is very important which entrepreneur has better idea, who knows to realize it better. Enterprise is not a monopoly of the French, Americans, Chinese, Germans and Indians. The

region of the West Balkan is full of entrepreneurs. The problem lies in the fact that these Balkan countries are very small. They have the challenge how to improve in the future. For their further growth they should have global vision, they must turn around and see the rest of the world and find the opportunities on the global level.”.[4]

Serbia has all pre-conditions to become one of these regions in the near future, if domestic businessmen change their business philosophy very soon. The owners of capital and executives are those who should establish new elements of competitiveness in domestic companies. It is necessary to overcome old-fashioned policy and techniques of management and to accept modern management methods, as well as to learn from experiences of global leaders and the companies coming from newly industrialized countries which are exceptionally successful on the global market.

According to some opinions [11], competitiveness, on the long run, cannot be increased by state's subventions, nor by favourable rate of exchange, positive trade balance or low inflation rate. Competitiveness can be increased by improving business productivity. The role of the state should be to make equal conditions for all participants on the market, to protect ideas, innovations, property, to help the interests of the whole group and not any individual firm, as well as not to decide who is the winner or loser, in advance. The problem of permanent increase in productivity of domestic companies and creating equal conditions for all business organizations is a crucial and long-lasting indicator for the exit of the crises, especially from transitional recession.

During development process of enterprising behaviour in the Republic of Serbia, it is necessary to work in several directions – that will increase business ambience for easier business performance of the existing and future entrepreneurs. This process includes several elements:

- creating regulations that will make easier the business process of all entrepreneurs, especially the young ones,
- developing strategy for enterprising concept of the young,
- credit support for start-up business concerning young people,
- stimulating measures for the implementation of QMS (individuals and groups), integrated management systems in order to develop competitiveness of domestic SMC,
- more active role of universities in helping entrepreneurs,
- start-up of business incubators and business centres,
- more active role of entrepreneurs associations with the aim to promote enterprising concept among young people,

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- promotion of enterprising concept as a way of overcoming problems in transitional recession.

It is important to say that the problem of developing enterprising behaviour must be treated by several interest groups, such as: the state through its institutions and Ministries, Universities, entrepreneurs associations, as well as media that can positively influence the making of appropriate ambience for start-up of small business.

6. Conclusion

Enterprising economy represents a reality in the global economy, where the number of competitors is increasing more and more. Global economy is characterised by insecurity. In the same time it offers huge opportunities to organizations and individuals that are brave and energetic enough to adapt themselves to new conditions. Adižes [5, pp. 187] well notices that success comes from inside. If we are strong inside, we are able to solve every outside problem and to accept it as a good opportunity. On the other hand, if we are weak inside, every outside opportunity will be considered as a problem. National economy which supports enterprising behaviour creates conditions for increasing productivity through investments in personal abilities of individuals in the society, as well as in every company, no matter the kind of the organization or the character of ownership. Young people are interested in start-up of their own business all around the world.

Our domestic companies have been insufficiently competitive in the international market in the last ten years, and the consequences of the world economic crises have even made the things worse. The competitors of domestic companies are not only the companies from developed countries, especially from EU, but the ones coming from newly industrialized countries like China, India, Brazil, Mexico, Turkey, etc. Domestic companies have to create their own development strategy more clearly and to harmonize it with European and global trends. They also have to use modern management methods and techniques, such as integrated management systems, relationship marketing and corporative social responsibility which represents the basic precondition of successful market development.

The results of this research point at the fact that the state must have the key role in this sphere on domestic market through making certain documents which aim is promoting the concept of the young as entrepreneurs. Universities, Serbian Chamber of Commerce and its regional offices, appropriate departments and entrepreneurs associations must be included in these projects.

References

1. ***, Privreda Srbije tehnološki zaostala 29,5% godina, Poslovni Magazin, 15. Jul 2009., dostupno na adresi: <http://www.poslovnimagazin.biz/magazin/privreda-srbije-tehnoloski-zaostala-295-godina-30-1970> (poslednji put posećeno 23.02.2010.).
2. ***, Strategija razvoja konkurentnosti i inovativnosti MSP za period 2008-2013. godine, Službeni glasnik RS, br.55/05, 71/05-ispravka, 101/07 i 65/08, Beograd, 2008.
3. ***, Youth Unemployment: The Policy Agenda, Promotional Activities, ILO, <http://www.ilo.org/public/english/region/ampro/cinterfor/temas/youth/news/youth1.htm> (poslednji put posećeno 15.03. 2010.)
4. ***, Zemlje u razvoju novi marketinški eldorado, Novac, Ringier, Beograd, 11. 07.2009. str. 8-9.
5. Adižes I., Upravljanje promenama, Adižes, Novi Sad, 2006.
6. Berglund H., Wennberg K., Creativity among entrepreneurship students: comparing engineering and business education, Int. J. Cont. Engineering Education and Lifelong Learning, Vol. 16, No. 5, 2006.
7. Bhandari N.C., Intention for Entrepreneurship among Students in India, Journal of Entrepreneurship, vol 15, 2006. pp. 169-179.
8. Block Z., MacMillan I.C., Corporate Venturing, Harvard Business School Press, Boston, MA. 1993.
9. Crant M.J., The proactive personality scale as a predictor of entrepreneurial intentions, Journal of Small Business Management, 34, 1996. pp. 42–49.
10. Đorđević D., Anđelković M., Bogetić S., Proces tranzicije i domaća privreda, KAS, Beograd, 2002.
11. Đorđević D., Anđelković M., Bogetić S., Unapređivanje konkurentnosti domaće privrede, KAS, Beograd, 2003.
12. Drucker P., Inovacije i preduzetništvo – Praksa i principi, Grmeč, Beograd, 1996.
13. Drucker P., Upravljanje u novom društvu, Adižes, Novi Sad, 2005.
14. Gartner W.B., Who is an entrepreneur? Is the Wrong Question, American Journal of Small Business, 12, 1988. pp.11–22.
15. ISO (ed.) The ISO Survey 2008, http://www.onac.org.co/portal/images/stories/ISO_Survey2008.pdf (poslednji put posećeno 15.03.2010.).
16. Johannisson B., Landström H., Rosenberg J., University training for entrepreneurship – an action frame of reference, European Journal of Engineering Education, Vol. 23, 1998. pp.477–496.
17. Kenichi O., Nova globalna pozornica, Mate, Zagreb, 2007.
18. Kolvereid L., Organizational employment versus self-employment: Reasons for career choice intentions, Entrepreneurship Theory and Practice, 20, 1996. pp. 23–31.
19. Paunović M., Poslovanje u Srbiji, Fokus – kvartalni izveštaj o institucionalnim reformama, Centar za liberalno-demokratske studije, Beograd, oktobar 2009.
20. Sajfert Z., Bešić C., Petrović N., Uloga korporativnog preduzetništva u procesu unapređenja kvaliteta poslovanja domaćih preduzeća, JUSK Međunarodna

The Youth's Enterprising Behaviour –the Research Results from Serbia

- konvencija o kvalitetu/YUSQ 2008, "Kvalitetom ka evropskim i svetskim integracijama", Beograd, 27. -29.05.2008., International journal "Total Quality Management & Excellence" no.1-2, vol. 36 2008. str. 259-260.
21. Scheinberg S., MacMillan I., An eleven country study of the motivations to start a business, *Frontiers of Entrepreneurship Research*, 1988.
 22. Scherer R.F., Brodzinski J.D., Entrepreneur career selection and gender: A socialization approach, *Journal of Small Business Management*, 28, 1990. pp. 37-44.
 23. Schwab, K. (ed.), The Global Competitiveness Report 2009-2010, World Economic Forum, 08.09.2009. dostupno na adresi: <http://www.weforum.org/pdf/GCR09/GCR20092010fullreport.pdf> (poslednji put posećeno 23.02. 2010.)
 24. Zahra S.A., Predictors and financial outcomes of corporate entrepreneurship, *Journal of Business Venturing*, Vol. 6, 1991. pp. 259-85.
 25. Zahra S.S., Environment, corporate entrepreneurship, and financial performance: a taxonomy approach, *Journal of Business Venturing*, Vol. 8, 1993. pp. 319-40.

PREDUZETNIČKO PONAŠANJE KOD MLADIH – REZULTATI ISTRŽIVANJA U SRBIJI

Rezime: Prema iskustvima razvijenih zemalja, mladi koji prvi put počinju sopstveni biznis predstavljaju veoma značajnu kategoriju za razvoj klime preduzetništva na nivou nacionalne ekonomije. U Srbiji nije dovoljno razvijen ambijent u kojem mladi mogu biti podstaknuti za pokretanje sopstvenog biznisa. Kao jedno od rešenja nameće se ohrabrivanje i edukacija mladih za pokretanje i vođenje sopstvenog biznisa. Stimulisanje preduzetničkog ponašanja kod mladih posebno dobija na značaju u zemljama u tranziciji, koje se susreću sa tranzitornom recesijom. Autori u ovom radu analiziraju neophodnost primene savremenog koncepta preduzetništva na tržištu Srbije, sa posebni osvrtom na ulogu mladih i mogućnost njihovog uključivanja u preduzetničke aktivnosti. Iznose se, takođe, i kompariraju rezultati dva istraživanja sprovedena 2008. i 2009. godine u Srbiji među studentima. Tema je bila: preduzetništvo i preduzetničko ponašanje mladih.

Ključne reči: preduzetništvo, mladi preduzetnici, mala i srednja preduzeća, konkurentnost, znanje

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