Benchmarking as a Tool for Improving the Operations of Transport Companies

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This paper presents the usage of benchmarking as a tool for improving the operation of companies. For analysis are observed three enterprises, dealing with the same activity, transport of goods, and one of them is taken as a standard. The parameters for evaluation are the financial and physical nature as well as non-financial nature. It can be concluded from the presented results that the "benchmarking company" is more successful related to the observed companies regarding both groups of parameters.

Key words: benchmarking, implementation, transport companies, indicators, quality of transport service

1. INTRODUCTION

In recent years, competition and performance expectations among transportation companies have increased dramatically, due to deregulation of the industry, the growing number of transportation providers and the growing demands among shippers for increased levels of service. As in other industries, efforts to improve performance and competitiveness have led transportation companies to design and implement comprehensive quality assessment and improvement strategies or programs [1].

In the evaluation of organizations and companies, there are many theoretical and practical methods to enable the company to determine the current position in the market, its strengths and weaknesses of the competition, its growth opportunities and potential decline in fulfilling their goals and mission. It should be noted that even the retrospective evaluation in the constantly

changing environment, which could be of socio-economic, political-legislative, technological, technical and other nature, complicates the position of companies and organizations in general and to determine the exact position of the organization is practically impossible [2].

A method which defines the position of the company in the market is benchmarking. Benchmarking is a comparing continuous process with other organizations in order to find and perform the best business practices to ensure long-term competitive advantage [3]. Benchmarking is one of the management tools that have recently been introduced in the transport sector, and it is rapidly being applied to a wide range of transport operations, services and policies [4].

This paper presents an example of benchmarking in transport regarding with the comparison three business enterprises dealing with the transport activity and one of them is taken as a standard. For comparison were taken financial and physical indicators (income, expenses, relation employee/driving unit, realized transport operation/driving unit) and non-financial indicators (quality of service from the user's perspective). After the process of comparing, it should be determine

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the strategy of action to reach the competition and become better than the competition

1.1. Implementation of Benchmarking in transport

Benchmarking has found many implementations in transportation and the entire transport system. The goal of any transportation company is to satisfy the expectations of its customers. In recognition of this, most companies are actively reevaluating their transportation management processes, transport policy, organizational structure and technology.

Anderbeen's [5] benchmark of 173 manufacturers distribution organizations, and retailers finds that more than three-quarters have been asked to make recommendations for transportation process improvement in just the past six months. Nearly, two-thirds have also recommended improving their transportation management technology.

Majority has made suggestions or reorganizing the transportation department. Baerlund [6] identifies the relationship between the process of formulating transport policy and the setting of goals and targets such that the implementation of transport policy can be managed effectively.

Examples are given of the applications of benchmarking to transport policy assessment at both at European Union and a national level.

Benchmarking can be used as a method for improving the competitive ability of a complex system of public transport passengers. That is, based on the results of the applied internal and external benchmarking, we can indicate the advantages and disadvantages of public passenger transport [7].

In large cities, the problem of population growth, the quantity of exhaust gases and many other problems are the motivation for defining efficiency benchmarking measurement models for public transportation system in order to evaluate public transportation efficiency in larger cities [8].

If organizations are to improve their competitiveness in attracting and retaining customers they also need to know more about how customers measure value and how different suppliers perform in this evaluation. This requires a more complex matrix of research and measurement [9].

Bateson and Hoffman [10] state that companies should develop a service satisfaction information system which incorporates customer complaint measures; after-sales surveys; customer focus group interviews; mystery shopping scores; employee surveys and total market service satisfaction surveys.

This paper attempted to extend research in this area and using the benchmarking specifically identify the

market positions of the analyzed transport companies over certain financial and non-financial indicators, and to define the measurers of their reorganization to improve market position.

2. KEY PERFORMANCE INDICATORS IN A TRANSPORT SECTOR

Indicators need to be established which are relevant to the exercise to be undertaken. Key performance indicators must include information about: [11].

- reliability/service quality;
- efficiency;
- assets/capability utilization;
- financing;
- regulatory and environmental practice.

They can be divided into qualitative – non-financial indicators (product quality, service quality, customer satisfaction) and quantitative – financial and physical indicators (total income, profit, profitability, return on investment, condition and trade stocks etc. [12]. Service quality from the carrier perspective has been even more sparingly studied. Brown's [13] theoretical paper discussed freight service quality and economic implications for the transportation industry. He theorized that optimal service quality policies would minimize the sum of total shipping costs for both carriers and shippers. Knowing the causes that produce the competitive gap between a company and the international market leaders in the same business activity is the key issue in order to increase company competitiveness.

3. PROFILE OF ANALYZED COMPANIES

In this paper, we will be accessed to benchmarking 2 transport company in Bosnia and Herzegovina (the company "A" and the company "B"). Order to preserve data, the companies will not be named. Data of these transport companies are compared with similar company from Serbia (the company "X").

There is a difference in the number of employees and number of vehicles, but since the companies engaged in the same activity (passenger transport in urban, suburban and interurban traffic), that are at approximately the same time started to work and they are located in a similar market environment, it is considered that are suitable for the comparison. The main characteristics of companies are given in Table 1. All information dating from 2011. The criteria for comparison are choice of the author.

Based on the data in table 1, we can see that the vehicle fleet at all three companies is heterogeneous, and that the average age structure of the fleet is approximate.

Table 1. Basic characteristics of the observed companies for 2011

	Company "X"	Company "A"	Company "B"
Year of establishment	2006	2006	2007
Number of employees	58	104	102
employee/driving unit	1,9	2,6	3,0
Number of vehicles	30	40	40
Average weighted vehicle age	10,2	11,03	10,1
Structure of the vehicle fleet	heterogeneous	heterogeneous	heterogeneous
Total achieved transport operation, U (passenger*km)	87.085.120,00	59.824.141,00	98.215.253,00
U/driving unit (passenger*km/vehicle)	2.902.837,33	1.495.603,53	2.455.381,33
U/employee (passenger*km/employee)	1.501.467,59	575.232,125	962.894,64
Income (EUR)	1.229.337,39	1.699.530,07	3.819.349,29
Expense (EUR)	1.220.079,48	1.690.375,44	3.818.838,00
Profit (EUR)	9.257,91	9.154,64	511,29
Income/Expense	1,007	1,005	1,000
Income/driving unit	40.977,91	42.488,25	95.483,73

The main difference is in relation to the total number of employees and the size of the fleet, which at the company "X" was 1.9 workers / vehicle, while the firms "A" has a size of 2.6 workers / vehicle while in the company "B" 3.0 workers / vehicle. This relation in Serbia for similar companies by an average of 2.5 workers / vehicle while in Europe this ratio ranges from 1.6 to 1.8 workers / vehicle. By reducing this indicator can be found the area for business improvement. The difference is in relation to the total transport operation and the size of the fleet, which is favorable for enterprise in Serbia amounts to 2.902.837,33 passenger*km/vehicle. Relation to the total transport operation and the number of employees indicates the the lower values in the enterprises "A" and "B". Table 1 also shows that the companies "A" and "B" are worse in financial indicators.

Profits of the analyzed companies are smaller than the standard(the company "X"), which amounts to 9.257,91 EUR. Similarly, the ratio of income / expense was favorable in the company "X". When it comes to expense, the data indicate a high proportion of salaries, amortization and energy costs in total expenses.

Current conditions in the observed companies require performing certain measures to improve the business. Their direction of activities oriented towards the:

a) Reorganization of enterprises (introduce the internal control of traffic safety that will certain programs and policies concerning working conditions of drivers and fleet)

b) Employees in companies (reduce the number of workers by driving unit, require higher number of highly educated, changing driver's way of driving)

c) Introduction of modern information system through specific software packages and information technologies (to increase the quality of transport services, increase technical accuracy of vehicles; optimizing the use of the fleet)

d) Regular survey of travelers (to analyze attitudes about the quality of transport services)

e) The structure of the fleet (make procurement plan homogeneous the fleet).

4. ANALYSIS OF QUALITY SERVICE THE USER'S PERSPECTIVE

As discussed above, the comparison of observed business enterprises except the financial and physical indicators, they are taken into consideration non-financial indicators, such as the quality of transportation services and customer satisfaction. To determine the current state of quality of service from the aspects of passengers and the importance of certain parameters of quality of service, it conducted a survey of travelers. Results of the interviewer entered into a pre-prepared questionnaire. In addition to questions of passengers, the survey form shall also contain information about the passenger - gender, age and profession. Each question on the survey form has offered answers and space for writing code responses that gave the traveler. The basic requirements to be complying with any question are: simplicity, user-friendliness and empathy. After

the survey implemented, it carried out the processing and analysis of data from the computer. The results are presented in tables and graphs.

In company, which was taken as a standard, the company "X", 200 passengers were surveyed, in company "A" 150 passengers and in company "B" 150 passengers. Passengers have evaluated the following parameters of service quality (Table 2):

- transportation reliability

- ticket price
- driving comfort
- kindness of the staff
- availability of transport information

The passengers were also asked about the importance of different ways of obtaining transport information and in the end, they gave a general assessment of transport companies.

Table 2. Evaluations Quality of service

Company	“X”	“A”	“B”
Grade	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5
Transportation reliability (%)	0 3 15 42 39	0 10 41 29 20	0 3 48 35 13
Ticket price (%)	13 19 10 34 23	9 14 49 17 11	20 28 23 18 10
Driving comfort (%)	7 23 25 31 24	11 25 38 19 7	2 19 33 28 18
Kindness of staff (%)	2 6 24 37 31	5 16 41 24 14	0 5 42 28 25
Availability of transport information (%)	3 4 15 40 38	11 27 24 21 16	2 10 43 32 13

Reliability of transport implies probability of departures planned timetable. Passenger requirements are as minor deviations to preserve passenger confidence in the carrier and in order to be in a smaller loss because the time which traveler lost in waiting is expressed as its lost money. The most common grade company "X" for reliable transportation by travelers is 4 (42%), 41% of travelers have rated a 3 company "A" and 48% of passengers gave the same grade to enterprise "B".

The most common rating of ticket price in the standard enterprise "X" is a grade 4, in the company "A" is grade 3, and in the company "B" rating is 2. It can be seen that the passengers in the observed companies are not satisfied with the price of transport. Passenger comfort has been considered in many aspects, from the comfort of standpoint to the comfort of the vehicle, the crowd, the staff kindness, understanding of a particular problem, driving style, the entry and exit of passengers, control, vehicle cleanliness, comfort, air conditioning, ventilation, heating, noise, lighting etc.

The greatest significance passengers give the capacity utilization of vehicles (the crowd). 31% of passengers gave a grade 4 for comfort and 24% of them a grade 5 company "X", while 38% of passengers rated comfort in the company "A" with grade 3, and 33% of passengers the same grade gave to enterprise "B". Kindness of staff can influence the choice of carrier. In company "X" 68% of respondents rated the kindness

of staff with grades 4 and 5. The companies "A" and "B", respectively, 38% and 53% of respondents rated the staff kindness with the highest grades.

Generally, transport users are not satisfied with the existing information system, and the reason is the fact that the timetable and other services can only be found at a bus station (bulletin boards and counters) or by phone. A part of them is still satisfied, but they are mostly everyday travelers who are well versed in the schedule. The highest score for availability of information in the company "X" was found in 38% of the passengers, while in the company "A" the same assessment gave 16% of travelers and in the company "B" 13%.

Evaluating the overall transport of the enterprise "A" passengers are rated in most cases with grade 3 (45%), while grade 5 gave 9% of the passengers, in the company "B" commonly given score 3 (55%) and only 7% gave a rating of 5. Standard company "X" as the most common assessment received a score of 4 (43%) and 13% of them gave a rating of 5 (Figure 1).

In all companies there is space for improvement in the services they provide. Most intercity traffic passenger in the observed companies complained to the bus without air-conditioners, a large number of intermediate stops, the uncomfortable seats, etc. By renewing the fleet and better organization of transport, these deficiencies could be reduced.

Figure 1 - General assessment of transport from the aspect of passenger

5. CONCLUSION

Benchmarking can be a powerful tool to help transport enterprise grow business such allowing to: locate its strengths, pinpoint weaknesses, measure its performance against its competitors and discover what it is possible to achieve. The problem of applying methods of benchmarking in transport companies is a certain reluctance of companies to provide with their data. Most companies have even developed systems, data privacy, that include especially transport prices and discounts, and these data are protected as trade secrets. Use of benchmarking is organizationally difficult and time-consuming because it requires the creation, internal testing and approval system of indicators for comparing. It is thus clear that in our conditions the use of benchmarking for transport companies is entrepreneurial and economically beneficial. We think that the biggest advantages will have that companies which first establish a method of benchmarking in their activities and strategies.

The conducted analysis is research in relation to the competition and identification their own position in the transport environment. What can be concluded from the presented results is that the "benchmarking company" is more successful related to the observed companies both the financial and physical indicators, as well as non-financial indicators? Evaluated companies have almost 50% higher number of employees than the "benchmarking company" to maintain an approximate capacity, due to which his productivity is far above the productivity of the evaluated companies. Annual profit of evaluated companies is less than the chosen standard companies. The ratio of employee / driving unit in the company "X" is 1.9 which is much more preferably than in the companies "A" and "B". Service quality parameters of "benchmarking company" were rated higher marks than quality parameters observed companies.

Also, a general assessment of transport from the passenger's aspect of company "X" is higher than that observed companies.

After the process of comparing, it should be determine the strategy of action to reach the competition and become better than the competition. Our study is the first step in "benchmarking" that needs to continue in the direction of the concretization of measures and instruments to improve their own performance.

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REZIME

BENČMARKING KAO SREDSTVO ZA UNAPREĐENJE POSLOVANJA TRANSPORTNIH PREDUZEĆA

U ovom radu je predstavljena upotreba benčmarkinga kao koristan metod za unapređenje poslovanja preduzeća. Za analizu posmatrana su tri preduzeća koja se bave istom delatnošću, transportom robe, od kojih je jedno preduzeće od njih uzeto kao standard. Parametri koji se analiziraju su finansijske i fizičke kao i nefinansijske prirode. Rezultati pokazuju da je 'benčmarking preduzeće' uspešnije u odnosu na ostala dva preduzeća po pitanju obe grupe parametara.

Ključne reči: benčmarking, upotreba, transportna preduzeća, parametri, kvalitet transportne usluge