THE BENCHMARKING IN LOGISTIC CENTRES' ENVIRONMENT

Rudolf KAMPF, Jana ROUDNÁ

Department of Transport Management, Marketing and Logistics

Introduction

The company's' external environment is changing quickly nowadays and only such companies, which are able to react flexibly, can succeed in hard competitors fight.

The benchmarking process can be a new tool for increasing competitive advantage. The benchmarking process consist in comparison with other rival firms, identification own strengths and weaknesses. Its results should refer to areas in which the company lags behind the competitors.

Own improvement by learning from the best is the principle of benchmarking. It's continuous activity, which consists in a tendency to find out the best practical processes in the organizations with similar functions. The company tries to incorporate these practical processes into the own activities. The comparison with performance of other companies enables to set firm's strengths and areas for its development.

The benchmarking went from so called problem oriented approach in the world till lately. The impetuses for benchmarking were customers' feedback, tendency to decrease costs, to improve running times etc. Organisations reacted on their problems and tried to find out effective solution by using benchmarking.

The orientation on higher economic return is better direction of the benchmarking activities. Strategically oriented organisations, which have defined their missions and strategic aims, need a tools which ensures them, that they will improve themselves all the time (in an effort to reach their aims). The focusing on the main processes seems to be

as the most effective from this point of view, which contributes to achieving these aims and to improvement of these processes.

1. The Benchmarking Process

The benchmarking process includes consultancy from familiarisation the company (client) with benchmarking process till final presentation results of benchmarking. These activities ensures usually specially trained benchmarking consultant. The benchmarking process can be divided into five phases, it's schematically shown in the following figure (Fig. 1).
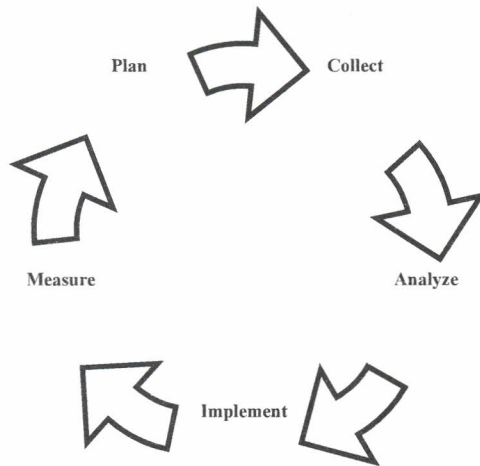

Fig. 1 Phases of the benchmarking process

Source: http://www.changeexcellence.com/

Phase 1: Definition and planning,

- definition aims of benchmarking project,

- establishment of project group/planning form of project,

- schematic presentation of aim process and its documentation,

- setting methods for internal data acquisition,

- identification potential benchmarking partners/contacting partners.

Phase 2: Internal analysis,

- acquiring basic data of observed process,

- instantiation of observed process,

  - modelling and analysis of the process,
  - adding relevant evaluating values and performance indicators,
  - gaining other necessary internal data.

Phase 3: Comparison and analysis / identification of potential improvements,

- comparison of basic evaluative parameters,

- choosing suitable parameters for the benchmarking process,

- gaining data from benchmarking partners,

  - creating detailed questionnaire,
  - visiting the benchmarking partners – reciprocal consultation,

- comparison and evaluating,

- strengths identification - potential improvements,

- interpretation of the results.

Phase 4: Plan of arrangements/ preparing the implementation,

- internal presentation of the results,

- setting real aims and specification priorities,

- elaborating plan of arrangements / setting strategy of improvements,

- elaborating project's plan.

Phase 5: Realization/implementation of improvements,

- realization and proceedings of single actions and arrangements,

- verification of realization (checking achieved aims),

- internal presentation of aims/ending the project,

- evaluating and documentation of project's results.

2. Usage of benchmarking in the logistic centres' environment

According to the European Logistics Association the term logistics can be defined as „*organising, planning, operating and performance of flow of goods, starting with development and purchase, ends with production and distribution according the final customer, so all market's requirements are fulfilled with minimal costs and minimal capital spending*". [5]

Logistic centre is a central link of logistic chains. It can be perceived as a place, which is intended for concentration of broad-spectrum of logistic services, including combined traffic. From this point there is possible to provide the service in the specific area by at least two means of transport. Logistic centres should arise in such places, where sufficient material flow is safeguard and there exists the possibility of connection to the transport infrastructure with several means of the transport with sufficient capacity. Among the areas, where logistic centres are built, naturally belong especially huge economic agglomerations, important traffic junctions etc.

The effort of achieving strategic competitive advantage is the reason for continuous improving logistic processes. The benchmarking is one of the ways how to achieve these competitive advantages.

The goal of the benchmarking is not only a comparison of single indicators, but it's also detection factors, which affect company's achievements. Practically anything can be a object of the benchmarking. It's something, what can be improved in the company (e.g. process, service, method, human resources, system of quality etc.). The management is able to set consecutive company's strategies thanks to continuous comparing with competitors. The aim of this process is not to be as good as the competitors are, but to become the best by learning from the best in this area.

Several types of benchmarking are differentiated according to what is an object of the comparison. Their usage depends on particular aim and the vision of the company's management.

1. Comparing strategies. It's used when organisation tries to totally improve its activities, e.g. new products and services, change in lay-out of activities. This form of benchmarking is difficult to implement and its contributions will be displayed in longer time period.

2. Comparing performance. This kind is used in case, when the company wants to know its position towards performance indicators of services/products in other company. The benchmarking partners are chosen from similar economic sector. This form of benchmarking is the most common.

3. Comparing processes. It's used when the goal is to improve particular processes and critical activities within organisation. The benchmarking partners are chosen among

organisations, which have the best practical proceedings and they provide similar service or product. This type of benchmarking can involve important contributions in short time horizon.

4. *International benchmarking*. The partners are from different countries, because the services or company are multinational.

5. *Internal benchmarking*. It surveys different subjects within one organisation, e.g. similar organisational units in the whole company. Main advantage is that sensitive data and information can be easily gained and standardised data can be created. It can be done quite quickly.

6. *External benchmarking*. It's the same as internal benchmarking, but it provides the possibility to learn from top organisations. It's obvious that it's not possible to take over all practical proceedings from other organisations. This type of benchmarking can be very time consuming, because of aversion to changes, which come from outwards from other organisation [6].

3. Key Performance Indicators

Total company's strategy influences the choice of key performance indicators which we want to measure. Setting the right indicators is not easy, because the unsuitable choice can cause that gained frame is not right. If the company focuses only at some indicators, while the others – which are key for the company – are skipped, the results of the company can be distorted.

Well done mix of the key performance indicators should help to find out shortcomings in the company, it takes into account all facts, which lead towards required goal and it sets area for improvements on their basis. By the market comparison the goal is not to find out, which indicators are measured by the others, but to know the values of these indicators [7].

One of the areas, which can be done within benchmarking test, is the area of company's results. These indicators reflect if the employees are really the competitive advantage, set the investment returns to human resources. An example is the indicator turnover, costs or profit per employee. The indicator for profit per customer is calculated as:

$$I_{FCR} = \frac{P}{NE},$$

$$(1)$$

where:

I_{FCR} .... index for company's results,

P .... logistic centre's total profit,

NE .... logistic centre's number of employees.

Different key indicator mix is suitable for different branches. The indicators, which characterise basic properties of logistic centres, are used in this branch. It can be quite number of these indicators, but it depends on punctuality of the benchmarking test.

The example is an index which represents relationship between total costs of logistic centre and total number of employees. It is calculated according following formula:

$$I_{TC} = \frac{TC}{NE},$$
(2)

where:

I_{TC} .... index for logistic centre's total costs,

TC .... logistic centre's annual total costs,

NE .... logistic centre's number of employees.

Single indicators can't be evaluated by itself, e.g. concerning topic total costs, it's necessary to take into account also the flooring of the logistic centre. This question is solved by following index, which is calculated as:

$$I_{NS} = \frac{TC}{S},$$
(3)

where:

I_{NS} .... index for relationship between total costs and flooring of logistic centre,

TC .... logistic centre's annual costs,

S .... flooring of logistic centre.

So it's important that indicators cover all area, which we want to evaluate. On the other side they shouldn't make duplicate useless evaluations, which don't add any new information and they can cause overload the client with useless information [8].

Qualitative and quantitative company's resources (financial, material, human, organisational, technological) in the widest conception are the matter of benchmarking.

Mathematics and statistics provide for comparison intercompany, and so as well for index benchmarking, number of methods and consecutions for evaluation the level of companies' activities and results. On the other side, it's necessary to say, that economic

features aren't stationary, respectively they are changing dynamically and the characteristics in a set o firms seldom have a normal distribution, often there is lack of sufficiency of comparable data for statistical processing, e.g. a set of data with sufficient frequency is heterogeneous. These are only several examples which complicate a usage of simple mathematical-statistical methods in economics.

Many methods provide methodological processes also for complicated behaviour from the set of managerial-economical data. These methods are more difficult, such as distribution function, interval analysis, huddle analysis and many others which are used minimally in practice.

4. Setting Position of the Firm

During the research, there were used fractiles for setting position of the firm for intercompany comparison of logistic centres. Fractiles provide scatter survey of parameters, which distribute the set into several the same size numerous subsets (zones). So it doesn't depend on how much higher is one value above the second one, but the crucial fact is, that one is superior to second one at all. The sensitivity on the value sequence results from this, it also predestinates resistance against size of the values and above all the sensitivity of extreme values (contrary of averages and variable measures).

Median is basic type of fractiles; it splits the set of values in two equinumerous groups. So it represents median element of data series, which are ordered according to size. Median Me is calculated according to formula:

$$Me = A + h \frac{\frac{n+1}{2} - \sum n_i}{n_{me}},$$ (4)

where:

A .... beginning of the median interval,

h .... range of median interval,

n_i .... sum into median interval,

n_{me} .... frequency of median interval.

During intercompany comparison the median provides the possibility to specify area of some indicator (object), submit it into better or worse half of the set.

This type of dividing set of companies only into two groups is not sufficient from the point of view of evaluation and comparison of them and their single areas. This is reason why are used smoother dividing of sets, smoother divided fractiles, which provides more detailed characteristics of objects' site:

- Fractiles divide the set into four ranges with frequency 25 % of objects in each range,

- Quintiles divide the set into five ranges with frequency 20 % of objects in each range,

- Deciles divide the set into ten ranges with frequency 10 % of objects in each range.

It's necessary to establish the variability of the set also in the case of usage fractiles for characterising the level of values in the set. Usually it's not expressed as the distance of values from median (similar to standard deviation in the case of average), but by the range of values between the first and the last fractile. Such indicator of sets' variability is expressed in the same units as an analysed indicator, so it impedes to comparison of heterogeneous indicators' variability. The solution could be a construction of ratio indicators of variability, if the difference between fractiles is divided by the median value.

Fractiles provides wide range of possibility for intercompany comparison, also on the basis of several criterions. Knowledge of single sets' ranges of comparable companies, bounded by fractiles, enables evaluation of these indicators according to specific point scale and consequently summary of achieved points in single indicators, eventually "weighing" their importance, we will receive complex characteristics of each analysed company, which enables to create a chart of companies' fruitfulness.

Conclusion

Nowadays, there are quick and continuous changes in company's external environment. Simplified said the benchmarking consists in comparison with other companies in a sector, search out the best and learning from the best.

So, the benchmarking should help to companies to reveal the necessity of changes, make costs and performance more transparent, successfully implement possibilities of improvements and make clear the position in the market. It's the reason, why benchmarking is considered as important strategic tool for relatively fast increasing of competitiveness.

Rudolf Kampf, Jana Roudná:
The benchmarking in logistic centres' environment

References

1. ŠTEFÁNIK, A. Návrh metodiky diagnostického benchmarkingu pre slovenske podniky. Žilina 2003, Doktorandská dizertačná práce.

2. Web site <http://www.deloitte.com/view/cs_CZ/cz/sluzby/poradenstvi/lidske-zdroje/article/03ca7c5eb6efd110VgnVCM100000ba42f00aRCRD.htm> [24. září 2008].

3. Web site <http://209.85.135.132/search?q=cache:vwLSCKk1rDAJ:www.haken.eu/studium/2_V%C5%A0FS/Logistika_Benchmarking.doc+haken+benchmarking&cd=3&hl=cs&ct=clnk&gl=cz> , Praha: 20.10.2007.

4. Web site <http://www.changeexcellence.com>, 2000-2004 Carla Carter & Associates, Inc.

5. Web site <http://www.ewizard.cz/logistika-slovnik.php?detail=204>, Economic Wizard v.o.s., 2004.

6. Web site < http://www.kvic.cz/detail.asp?ID=2177>, [15.12.2007].

7. HITKA, M. Metodika analýzy motivátorov v podnikoch DSP. Monografia, TU Zvolen, 2004. ISBN 80-228-1331-1.

8. MAJERČÁK, J., GAŠPARÍK, J. Prozessportal für Eisenbahnverkehrsunternehmen. In: Wischenschaftliche Zeitschrift der Hoschule Mittweida (FH), Postersession 17. IWKM, č.13, Mittweida 2005. ISSN 1437-7624.

9. DVOŘÁKOVÁ, E. Firemná kultúra v železničných podnikoch. Železničná doprava a logistika 1/2007. ISSN 1336-7943.

10. HITTMÁR, Š., STRIŠŠ, J., MELICHAR, V., MATIAŠKO, K. Manažment v doprave. Monografia ŽU, 317 str., Žilina: Žilinská univerzita, 2001. ISBN 80-7100-784-6.

Resumé

BENCHMARKING V PROSTŘEDÍ LOGISTICKÝCH CENTER

Rudolf KAMPF, Jana ROUDNÁ

Tento článek se zabývá problematikou benchmarkigu v prostředí logistických center. Benchmarkingový test by měl logistickým centrům napomoci sběru objektivních informací, které jsou nutné pro tvorbu strategických rozhodnutí.

Celková strategie společnosti významně ovlivňuje volbu klíčových ukazatelů výkonnosti, které chceme měřit. Stanovit ty správné ukazatele není jednoduché, neboť při nevhodném výběru může být získaný obraz o firmě (logistickém centru) nesprávný. V článku jsou pro určení pozice firmy použity kvantily, konkrétně medián, který je základním typem kvantilů.

Summary

THE BENCHMARKING IN LOGISTIC CENTRES' ENVIRONMENT

Rudolf KAMPF, Jana ROUDNÁ

This paper deals with topic the benchmarking in logistic centres' environment The benchmarking test should help to logistic centres with gaining objective data, which are necessary for making strategic decisions.

General strategy of the company influences singnificantly choice of key indicators of the performance, which we want to measure.Setting the right indicators is not easy, because the unsuitable choice can cause that gained frame of the company (logistic centre) is not right. In the paper there are used fractiles for setting the company's position, in the concrete the median, which is basic type of the fractiles.

Zusammenfassung

DAS BENCHMARKING IN DER UMWELT DER LOGISTISCHEN ZENTREN

Rudolf KAMPF, Jana ROUDNÁ

Der Artikel befasst sich mit Problematik Benchmarking in der Umgebung der Logistikzentren. Der Benchmarkingtest sollte der Logistikzentren mit der objektiven Informationenerfassung helfen, die für die Bildung der strategischen Entscheidungen nötig sind. Die Gesamtstrategie der Gesellschaft beeinflusst bedeutend die Wahl der Schlüsselzeiger der Leistungsfähigkeit, die wir messen wollen. Die richtige Zeiger ist nicht einfach bestimmen, denn bei der ungeeigneten Wahl kann der Firmenbild (das logistische Zentrum) unrichtig sein. In dem Artikel sind für die Bestimmung der Firmenpozition Quantils angewandt, konkrete Median, der den Grundtyp der Quantils ist.