



BENCHMARKING METHODOLOGY IN A TRANSPORT SECTOR

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Abstract. The article analyses the following issues: 1) Definitions of benchmarking. Benchmarking as a management tool that has long been successfully used both in the private and public sectors to improve the efficiency and effectiveness of products and processes; 2) Benefits of transport benchmarking. Benchmarking can help transport enterprise to: locate its strengths, pinpoint weaknesses, measure its performance against its competitors, discover what it is possible to achieve; 3) Different types of benchmarking. Different types of benchmarking processes can be distinguished into performance benchmarking, process benchmarking, strategic benchmarking, competitor benchmarking, functional benchmarking, generic benchmarking; 4) Transport benchmarking methodology. The basic transport benchmarking principles – planning, analysis, integration, action and recycle are equally valid for transport policy benchmarking; 5) Key performance indicators in a transport sector.

Keywords: benchmarking, benchmarking methodology.

1. Introduction

There is growing pressure on transport policy makers across Lithuania and Europe to reduce the levels of public spending. At the same time, there is increasing urgency to meet the target set out in the Kyoto Protocol to improve the sustainability of the transport sector. In addition, the electorate is demanding higher standards of quality in both public and private transport sectors (passenger and freight). In this context policy makers need tools to help them improve the sustainability, efficiency and effectiveness of the transport system. Benchmarking is a management tool that has long been successfully used both in the private and public sectors to improve the efficiency and effectiveness of products and processes. Its potential should now be exploited at the policy level to support the implementation of a sustainable transport system in Lithuania. Benchmarking can help Lithuanian policy makers by providing a useful structure to prioritise objectives, set targets, monitor the achievement of those targets, compare their performance to others, learn from the good practices of others and implement changes for improvement. Benchmarking is not the only tool available to policy makers nor is it able to provide a solution to all the challenges faced by policy makers. However, it offers an approach that can certainly provide police makers with support to understand and clarify their work and to learn from others who do the same things better. Benchmarking is one of the management tools that

has recently been introduced in the transport sector, and it is rapidly being applied to a wide range of transport operations, services and policies.

2. Definitions of benchmarking

There is a considerable confusion as to what the term „benchmarking“ actually means. Often, benchmarking is understood as a process of simply comparing numerical performance levels across different organisations. However, if benchmarking is understood as a tool for improvement, it is more than just comparing and ranking. It goes beyond the establishment of benchmarks, standards and norms and investigates the practices that support the benchmarks [1]. The philosophy of benchmarking is very well expressed through the following statement:

„Benchmarking is the practice of being humble enough to admit that someone else is better at something, and being wise enough to learn how to match and even surpass them at it“ [2].

Benchmarking is about finding out why there are differences in performance and about learning from others best practice. The concept of benchmarking was pioneered by the Xerox Corporation to meet the Japanese competitive challenge of the 1970 s.

„Benchmarking is the process of improving performance by continuously identifying, understanding, and adapting outstanding practices and processes founds inside and outside the organisation“ [3].

„Benchmarking is the process of continuously measuring and comparing ones business processes against comparable processes in leading organisations to obtain information that will help the organisation identify and implement improvements“ [4].

„Benchmarking is a method for organisational improvement that involves continuous, systematic evaluation of the products, services, and processes of organisations that are recognised as representing best practices“ [5].

„Benchmarking is a process for identifying and importing best practices to improve performance“ [6].

“A continuous process of measuring products, services, and practices against the toughest competitors or those companies recognised as industry leaders”. (Kearns, David T. (1986)) [7].

Gay (1992) [8] has called benchmarking as “Consumer Report” for the public sector. Benchmarks, he says, provide citizen – consumers with accurate and reliable information with which they can set standards, make comparisons, and judge performances. They have become “important tools for government in setting program and budget priorities and for seeking interagency co-operation on broad issues”.

Morling and Tanner describe benchmarking as an improvement process in which an organisation measures its performance against that of other similar organisations to determine how such organisations achieve their performance ratings. Subjects that can be benchmarked include strategies, operations, processes and procedures [9].

The term benchmarking is also used in reference to a turning point a milestone, a stage, an event, and even a crisis, but it is most commonly known as a standard (Keehley (1996)) [10]. When benchmarking for best practices, many argue that benchmarking means the highest possible performance, referring either to the highest level of performance currently existing or a level of performance that has yet to be seen but is on the immediate horizon (The American Productivity and Quality Centre (2000)) [11].

Almost any process or activity of an organisation is a candidate for benchmarking, such as [12]:

- work processes;
- products and services;
- support functions;
- organisational performance;
- strategies.

Often, the terms benchmarking and performance assessment are used interchangeably, even though they are not exactly the same. Performance measurement or assessment could be defined as the initial work done to specify and gather data on the criteria that account for the performance of a programme or service. Knowing the factors that are important in ef-

fectively performing a particular service or function is the foundation of benchmarking practice. It could be said that benchmarking is the next step, which is taken to discover what those identified as having best practices are doing what you are not doing.

An important element of the definition of benchmarking is the best practice. The best practice, in the more traditional uses of benchmarking, is defined by Robert Camp as „those practices that please the customer most“. Thus it is argued that goals of a benchmarking study should be based on customer needs, whether the customers are internal (departments within an organisation, higher management levels, employees) or external (consumers, citizens, regulators, legislators, local and national environmental groups, investors).

3. Benefits of transport benchmarking

The goal of benchmarking is basically to learn from others best practice. It is an improvement tool. If used properly, it leads to true, fundamental process improvement, which, in turn, leads to bottom - line performance improvement.

At its most effective, benchmarking can be a powerful tool to help transport enterprise grow business. It gives transport enterprise an insight into the practices other businesses have used to boost its turnover and profitability.

Benchmarking can help transport enterprise to:

- locate its strengths;
- pinpoint weaknesses;
- measure its performance against its competitors;
- discover what its is possible to achieve.

This can help transport enterprise develop best – practices strategies and take action that will:

- improve its products and services;
- eliminate its weaknesses;
- build upon its strength;
- improve business relationships;
- increase efficiency;
- increase productivity;
- attract investment;
- take advantages of new opportunities.

Additionally, some of the specific attractions of benchmarking are as follows:

1. Benchmarking helps the organisation understand and develop a critical attitude to its own business processes. It helps to overcome complacency (it is OK the way it is) and convince the “non – believers”.

2. Benchmarking promotes an active process of learning in the organisation and motivates change and improvement. It can break down ingrained reluctance

to change and create momentum – employees become more receptive to new ideas.

3. Through benchmarking the organisation can find sources for improvement and new ways of doing things outside their own organisation without trying to reinvent the wheel.

4. Through benchmarking reference points for measuring the performance of the organisations business processes are established. It provides early warning for lagging cost structures, customer satisfaction, technology and business processes. It can also correct inaccurate perception about competitor strengths, weaknesses and strategies.

Benchmarking requires significant resources in terms of time, money and staff. It is not easy or can be daunting for those who have never been involved in such exercise. The key is to convince potential participants that benefit gained from benchmarking will repay the effort/expenditure put into the process. The more you put in benchmarking, the more you will get out of it. Commitment to benchmarking is most effectively achieved by making it clear that benchmarking will directly benefit those participating. “Selling” benchmarking is like selling any other product. You have to understand your client when presenting the potential of benchmarking.

Key benefits of benchmarking in transport sector [13]:

- * Benchmarking will force you to start asking questions about how and why you think you do to think of ways to do your job better, whether it involves policy making, strategic planning, administration, maintenance, operational processes.

- * Benchmarking is practical and efficient:

- Practical because it assesses real performance and leads to concrete actions. It is not an academic research exercise.

- Efficient because it is based on learning from others: experience is the best teacher, but making use of others experiences will save time and help you to avoid repeating the same mistakes on others.

- * Public authorities and operators are under increasing pressure to improve the delivery of transport services because users and authorities are demanding higher quality and more efficient transport services.

- * Benchmarking offers a valuable opportunity to gain insights into the practices of others. A operator or authority on the other side of the world may have found a solution to a specific problem that you are currently facing.

- * Benchmarking can help you to set targets and standards by identifying the best performers in particular areas. These benchmarks can be used to guide your own performance standards. This can be par-

ticularly useful for evaluating and negotiating service contracts between operators and authorities.

- * Benchmarking increases the involvement on commitment of stakeholders. For example, within a transport operating company, involving all levels of staff in a benchmarking exercise can lead to a sense of ownership of performance which increases the motivation of staff to improve current levels of performance. Policy-makers may favour a benchmarking exercise that involves internal and external partners (authorities, operators and users) in order to build consensus or solutions to a particular policy issue and to stimulate joint responsibility for its implementation.

- * Benchmarking enables you to build networks and partnerships which often result in productive working relationship in the future. Benchmarking in the transport sector is not restrictive. You may wish to benchmark with partners from the same specific sector or from countries similar to your own. Or you may wish to look further afield and see how things are done in a totally different part of the world. In either case, your business network will be enriched and expanded at international, national or local levels depending on the scope of the benchmarking exercise.

- * Benchmarking enables you to learn about the good practices of others, but also to promote or “market” the successes of your own organisation, city, region. Benchmarking may help you to demonstrate that your performance in a particular area compares favourably to the performance of others. Policy-makers can use such information to gain wider political support for proposed measures or strategies, and operators can attract more customers by publishing the quality of their services.

4. Different types of benchmarking

Benchmarking activities can have very different objectives and scopes, and there is no single way to approach benchmarking. Different types of benchmarking processes can be distinguished and one way of classifying them is according to what is compared and against whom comparisons are made.

Benchmarking of what?

Performance benchmarking (“How well should we be doing it?”) is the comparison of performance measures (often financial, but also operational). Benchmark might be standard or target that has been established (internally, a nationally defined target or a target set by a professional advisory group) or performance data of other organisations.

Process benchmarking (“How do others achieve it?”) is the comparison of methods and practices for

performing business processes, for the purpose of learning from the best to improve ones own processes. It goes beyond the pure analysis of performance data and tries to identify the design and characteristics of a processes that is the best practices that lie behind the good performance of others. The concept of “a process” is a critical one for benchmarking. The technical description is that process is a set of activities that convert inputs into outputs which meet agreed customer requirements.

Strategic benchmarking (“*What should we be doing?*”) is the comparison of the strategic choices and dispositions made by other organisations for the purpose of collecting information to improve ones own strategic planning and positioning.

Benchmarking against whom?

Internal benchmarking is the comparison between departments, units, subsidiaries or countries within the same company or organisation.

Competitors benchmarking is the direct comparison of own performance/ results against the best real competitors, i.e. that manufacture the same product or deliver the same service.

Functional benchmarking is the comparison of processes or functions against non – competitor organisations (e.g. customer, suppliers) within the same industry or technological area. It tends to involve comparisons between firms that share some common technological and market characteristics and to concentrate on specific functions. The big advantage of functional benchmarking is that it is easier to identify willing partners, since the information is not going to direct a competitor.

Generic benchmarking is the comparison of own processes against the best processes around, regardless of industry or service. It is the study of innovative methods or technologies that can be used in a variety of business processes. It compares your own process with one that was designed for different use, but which can be adapted to your process. This type of benchmarking requires a more creative effort and is therefore more difficult to do. However, the potential for identifying new technologies or practices is the highest in generic benchmarking. Some combination of “types” of benchmarking is more relevant than others. Looking at companies benchmarking experience, it could be said that in many cases there is some kind of succession in the types of benchmarking used, which is “data benchmarking before process benchmarking” and “internal benchmarking before external benchmarking”. Process benchmarking cannot be performed if the organisation does not have an idea about the area of insufficient performance. If an organisation decides to do process benchmarking with no prior benchmarking experience, it is often recom-

mended to start with internal benchmarking before looking for external partners, for example, benchmarking between sister plants or strategic business units.

5. Transport benchmarking methodology

Benchmarking is a process, a series of actions, steps, functions, or activities that bring about an end or result: the identification and importation of the best practices to improve performance. There are several types of benchmarking and the steps of action can therefore differ. Process benchmarking is the source for “true” improvement. The objective is to learn how to design and operate processes in a much better way than currently happening. There are dozens of sources which describe the benchmarking process. It is called some “the nine – step benchmarking process”, or by others “the four steps of benchmarking”. The following description is based on Andersen and Pettersen [4], which call the process “the benchmarking wheel”, in order to indicate that benchmarking is an ongoing process.

1. Plan. The planning phase is the most crucial of all the phases. It includes the following activities.

* **Select the process to be benchmarked.** This selection should be based on the organisation strategy. An organisation should not embark on a benchmarking study without a clear strategic vision. Without clear strategic objectives the benchmarking study may focus on issues that do not have the potential to deliver the improvement the benchmarking study is aiming at. The process to be benchmarked can be selected, for example, according to the impact of the process on the company’s critical success factors, on the importance of the process for the main functions of the company, and according to whether the process represents or impacts on obvious problem areas in the organisation.

* **Form the benchmarking team.** The benchmarking team should consist of a process owner, one or more of those who perform the process, one person with connection to management, and preferably a supplier and a customer. One person can take several roles, depending on the size of study. Persons that are significantly involved in the process should take part in the benchmarking study, as their commitment is very important for the success of the whole study.

* **Understand and document the process to be benchmarked.** Prior to observing the process of benchmarking partners, it is extremely important to understand one’s own process. The process has to be defined in the terms of input and output and the parties involved in the process, such as suppliers and customers. This has to be for the whole process as well as for the steps within the process.

*** Establish performance measures for the process.**

In order to determine the present levels of performance and compare them to benchmarking partners, performance measures for the process have to be established. The three main dimensions often mentioned for performance measures in transport services benchmarking are quality (defect rates), time (delivery time), and cost.

2. Search. A primary task is to search for and identify suitable benchmarking partners. This includes the following activities.

*** Design a list of criteria** which an ideal benchmarking partner should satisfy. Criteria can cover issues such as geographical location, size, structure, products, technology, industry, and organisational climate.

*** Search for potential benchmarking partners**, i.e. organisations that are better than oneself at the process in question. Sources of information about benchmarking partners could be the organisations network, subject and area experts, industry and trade organisations (statistics, conferences, exhibitions), publications, the media, or public information such as national statistics or trade offices. It also has to be remarked that there is an increasing amount of benchmarking networks and associations for different industries and processes which are specialised in providing performance data and in helping companies to find partners.

*** Compare the candidates** and select the best – suited benchmarking partner (s). It is recommended to select more than one possible benchmarking partner.

*** Establish a contact** with the selected partner (s) and gain acceptance for the participation in the benchmarking study.

3. Observe. The purpose of the observation phase is to study the selected benchmarking partner (s) to understand its (their) processes. Before visiting the partner organisation the organisation performing the benchmarking study should be well prepared. This means that it should know its own process very well and also that it should have gathered as much information as possible about the benchmarking partner beforehand. A site visit should not be used to obtain trivial information that can be gathered. The steps of the observation phase are as follows.

*** Assess the information needs.** Information on three levels should be collected.

*** Performance levels**, which indicate how good the partner is compared to oneself.

1. Practices or methods, which make it possible to achieve these performance levels.

2. Enablers, which make it possible to perform the process according to these practices or methods.

*** Select the method and tool for collecting information and data.** There are many ways to collect data, and the organisation has to select the most efficient and suitable way. Different tools can be used, such as questionnaires, interviews, or direct observations. Also, it has to be decided how these tools shall be used, for example, whether a questionnaire should be sent by mail, whether it should be done over the telephone, or whether it should be filled in during a personal interview. Even a certain tool can be designed in many ways. The way the questions are posed in an interview, for example, can influence the outcome considerably.

*** Observe and debrief.** It is important that after the visit a debriefing is conducted as soon as possible in order not to lose any details of the observation which might not have been put down on paper.

4. Analyse. The main purpose of the analysis phase is to uncover the following.

*** Gaps in performance levels between own and partners process.** The collected data and information have to be sorted, controlled for quality, and normalised before then can be analysed for performance gaps. However, the team has to be aware of not “normalising away” all the explanations between the performance gaps. Often, for the analysis, some kind of comparison matrices are made to present performance measures collected from the benchmarking partners.

*** The causes of the gaps, i.e. the methods and practice that make it possible for the partners to achieve their high performance levels.** For the analysis of the causes different tools can be used such as comparison of flow charts, qualitative data matrices, relations diagrams, root – cause analysis, or the cause – and effect diagram.

*** The enablers that particularly contribute to the gaps.** It can be observed that often, having visited one or more partners, the study can lose some of its momentum. The team might lose some of the motivation to start the analysis and the quality of the results will accordingly be poorer. The team might not manage to find any performance gap and the causes of it. Very often, it will be hard to find and collect numerical data from the partners, which will, to a large extent, eliminate the quantitative part of the analysis. Instead of first determining a performance gap, one will proceed directly to identifying why the partners are better. This part of the analysis will be based more on qualitative observations.

5. Adapt. The main findings from the analysis phase must be communicated and gain the acceptance of the involved persons, otherwise the study will not be successful. Simply identifying the best practices without importing them to ones own organisation is

not benchmarking. The findings have to be adapted to the organisations own conditions and implemented within it. Improvement opportunities have to be identified, targets for improvement set, measures implemented, and progress monitored. Furthermore, the benchmarking study should be well documented and closed with a final report.

6. Recycle. Benchmarking should not be a one – time event, but a continuous process for improving the organisations performance. Benchmarks identified in benchmarking processes are not static. They will change as organisations improve their processes, and therefore have to be recalibrated. The long – term objective is to establish benchmarking as a natural problem – solving and improvement techniques on the level of other more established methods. Thus, benchmarking can be put to work in different situations:

* for developing goals strategic or operational, benchmarking can be used to ensure that sufficiently ambitious goals are set;

* for specific problems which the organisation is facing benchmarking can contribute to finding solutions by studying others which have already solved similar problems.

6. Key performance indicators in a transport sector

Indicators need to be established which are relevant to the exercise to be undertaken. Very often both benchmarking exercise and the choice of indicators fail to leave the starting line because the objectives have not been identified, the strategy for using the results has not been agreed or because those involved have not been briefed an accepted the process [14].

The primary and secondary key performance indicators must include information about:

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

To define indicators it is necessary first of all to identify:

The Starting Point

- Where are we now?
- Where do we need to go?
- Is there a possible route to follow?

The Finishing Point

- Do we have a Vision?
- What are the critical success factors to

achieve it?

- Do we understand the key process involved?

The Process

- What key process impacts most the critical success factors?
- What key processes can be measured usefully and accurately as indicators?

Only once the processes have been identified and indicators be defined. To be effective an indicator must be:

- a true measure of an element of performance;
- a measure which is made at defined time, place and situation;
- a measure of reliability;
- a measure of inputs and output of all types;
- a measure of quality or customers satisfaction.

If the indicators are chosen successfully they will tell

us the quality of the output or service, the reliability of the service or product, the areas where improvements can be made, and the areas where change of policy or process will be beneficial.

There are some important principles to be established in connection with the acceptance of indicators linked to benchmarking or indeed any other process as part of establishment of the methodology as the way we do things round here:

- what gets measured get done;
- establish a culture of change;
- determine positioning and capability;
- support the change process organisationally;
- agree that the future has not achieved yet.

7. Conclusions

1. Lithuanian transport policy makers need tools to help them improve sustainability, efficiency and effectiveness of the transport system. Benchmarking is a management tool that has long been successfully used both in private and public sectors to improve the efficiency and effectiveness of products and processes. Its potential should now be exploited at the policy level to support the implementation of sustainable transport system in Lithuania.

2. The basic transport benchmarking principles – planning, analysis, integration action and recycle are equally valid for transport policy benchmarking.

3. Benchmarking can be integrated into:

* continuous transport improvement programs (comparisons with other organisations are important sources of ideas for improvement);

* changing of workplace culture (people observe first-hand the practices of other organisations. This means they are more likely to commit to changes implemented within their own organisation as a result of the benchmarking exercise);

* transport sector strategic and business planning

(benchmarking can help identify achievable goals to be included in the plan and a good strategic plan can identify areas to be benchmarked);

* annual budgeting process (benchmarking projects can identify the cost implications of improvements required);

* quality assurance systems (process benchmarking can identify improved processes to incorporate into standard operating procedures).

4. The benefits of benchmarking must be more actively disseminated to Lithuanian transport policy makers.

5. Clear objectives and specific topics must be identified for benchmarking.

6. Benchmarking is a continuous process. Lithuanian transport policy makers should establish a long – term vision for benchmarking to ensure that the value of its individual activities is maximized.

11. The American Productivity & Quality Centre (<http://www.apqc.org/free/whitepapers/bmksm/index.htm>), 2000.

12. GEMI (Global Environmental Management Initiative, various authors). Benchmarking: The primer. Benchmarking for continuous environmental improvement, GEMI, Washington DC, 1994.

13. Draft recommendations to BOB pilot participants and DG TREN, Resulting from BEST Conference 4. Putting Benchmarking Methodology into Practice, October 2001.

14. Draft recommendations to BOB pilot participants and DG TREN, Resulting from BEST Conference 3. Indicators and Benchmarking in the Transport Sector, June 2001.

References

1. Van Schalkwyk, P. W.; Smit, E; Morgan, N. Contemporary issues in strategic management. Kagisco Publishers, Pretoria, 1996.
2. APQC (American Productivity and Quality Center). What is benchmarking? (<http://www.apqc.org/best/whatis.cfm>) The statement seems to originate from Dr Carla O'Dell, President of the APQC, in 1993.
3. Various authors, APQS White Paper for senior management based on the internationally acclaimed study organizing and managing benchmarking, APQS (American Productivity and Quality Center), 1999.
4. Andersen, B. and Pettersen, P- G. The benchmarking handbook, Step – by – step instructions. Chapman & Hall, London, 1996.
5. Marosszeky, M. and Karim, K. Benchmarking – A tool for lean construction. University of New South Wales, Sydney, Australia, 1997 (<http://web.bham.ac.uk/d.j.crook/lean/iglc5/marton/marton.htm>).
6. Keehley, P.; Medlin, S.; MacBride; S.; Longmire, L. Benchmarking for best practices in the public sector. Achieving performance breakthroughs in federal, state and local agencies. Jossey – Bass Publisher, San Francisco, 1997, p. 39.
7. Kearns, David T. Quality Improvement begins at the Top. *World 20*, Vol 21(5) May 1986.
8. Gay, W. Benchmarking: A Method for achieving superior performance in fire and emergency medical services. Herndon, Va: Public Management Group, 1992.
9. Morling, P.; Tanner, S. Benchmarking a public services business management system. *Total Quality Management*, Vol 11(4), 2000.
10. Keehley, P. et al. Benchmarking best practices in the public sector. San Francisco: Jossey – Bass – Publisher, 1996.