

Ship Management Benchmarking

Simona Utureanu

“Ovidius” University, Constanta, Romania

simona_utureanu@yahoo.com

Cristina Dragomir

Constanta Maritime University, Romania

economie.umc@gmail.com

Abstract

Striving for an equilibrium consistency in the domain of ship management services, benchmarking is a useful tool for learning best practices of the best. We present in this paper our considerations regarding ship management benchmarking, taking into account the particularities of the shipping market.

Key words: seafarer, ship operations, fleet management, quality and safety management

J.E.L. classification: N70, O32, R4, R49

1. Introduction

Seas, oceans and rivers represent a huge potential for commercial activities. Water transport made by ships is by far the most efficient solution to transport large quantities of goods in terms of costs. Also, transport by water is cheaper and less polluting than road or rail transport and do not require large expenditures with investment in infrastructure for roads or railways.

There are several definitions of benchmarking, from many domains, and in this paper we will present two of them, from distinct registries. We also present our own definition and considerations regarding benchmarking applied in the case of ship management companies.

Following, we will use the widely known term “sea transport” to define any transport made by water, including transport made using ships by rivers inside continents or by oceans.

The aim of this paper is to make a step further in developing scientific knowledge in the field of ship management improvement, from a bidimensional approach (technical and social).

The paper is based on scientific literature review, previous research studies and case-studies of world state-of-art ship management providers.

2. Benchmarking

Benchmarking is “a method which allows the establishment of the learning process that the organizations may pursue, in order to increase the internal activity performances”. Benchmarking is different than ranking because it allows the organizations from the same environmental field to learn from one another in order to improve its organizational performance (Romanescu, 2013, 489-491).

From an economic point of view, any benchmarking method includes, in general, “at least four basic elements:

- the data collection from the external organizational environment (the measurement of some variables, relevant for the organization in order to improve its performances);
- the comparison of its own data and the ones that belong to other organizations in this activity field;
- analyzing the way the better or the best performing organizations manage to attend higher performances than the ones of the reference organization;

- adopting the practices and the procedures distinctive to the better or the best performing organizations.”(Paunescu et al., 2011)

Thijs ten Raa gives a more technical definition of benchmarking, regarded as “a function that maps two arguments, namely the object to be benchmarked - a firm, represented by the pair of its input vector and its output vector - and the backdrop against which it is benchmarked - the industry - into a scalar, namely the efficiency of the firm. The mapping summarizes a program that identifies the best practice technologies or benchmarks for the firm. The performance of a firm will be measured by its output/input ratio or productivity - a concept that connects explicitly to the efficiency function”. (Raa, 2011, 285-292)

It is interesting to note that the term “benchmarking” is not only used in business administration or in economic sciences, as probably would be expected in general. The use of this term is spread in almost all scientific sectors. Just a few examples, among many hundreds, to support this idea, are the following works in Computer Science or in Medical Science where the term “benchmarking” is used. Wenzel-Benner and Gräf used the notion of benchmarking in a highly technical paper in Computer Science related to cryptographic algorithms with relevance for developing mobile phones, PDAs and other electronics (Wenzel-Benner and Gräf, 2010, 294-305). R. Weicker wrote also a technical paper on Benchmarking and benchmarks in programming and in computers business (Weicker, 2002). Soelter et al. made a scientific work in neuroscience on benchmarking related to odor receptor responses (Soelter et al., 2014).

Further, in this paper we present a benchmarking study on ship management.

3. What is ship management?

Ship management is a particular management service developed in shipping, that provides a complex management related to ships, including, inexhaustively, crew supply, technical management (monitoring the hull, engines and ship equipment), commercial management (freight management, chartering and operation) and/or insurance management.

The Baltic and International Maritime Council (BIMCO) (www.bimco.org), the world’s largest international shipping association, with more than 2,200 members globally, providing services for shipowners, operators, managers, brokers and agents, helps lightning the notion of this term by providing several models for ship management contracts: Crewman A (cost plus Fee) 2009, Crewman B (lump sum) 2009, Layupman, Shipman 2009 and Superman.

Crewman A and Crewman B are standard crewing model contracts provided by BIMCO for managing ship crews, as well as on shore personnel.

Layupman is the contract signed between the ship’s owner and a manager, when the ship is occasionally unable to be employed due to loss of profitably; in such conditions the ship is temporarily removed from service.

In Shipman model of contracts, the Owner of the ships agrees with the ship managers/ a ship management company regarding several components of ship management: crew management, technical management of ships, commercial management (freight management, chartering and operation), insurance management, accounting services, sale or purchase of the vessel, provisions, bunkering (fueling).

Superman is a contract between ship managers or consultants and their clients to provide supervision services during the construction of a ship.

4. Benchmarking in ship management

Relevant works for benchmarking in ship management were done, among others, by F. Waals et al. (Waals and Veenstra, 2002), K. Mitroussi (Mitroussi, 2003, 77-90) and Christian et al. (Christian et al., 2015).

Considering the multidimensional approaches in defining benchmarking – some socio-economical and some technical as described in Chapter 2 of this paper, our field of expertise recommends us to point and evidence our own perception regarding benchmarking in ship management.

Benchmarking in ship management is a method of improving the business strategy of a shipping

company that is striving for excellence and for the highest positive recognition on the market.

Benchmarking in ship management should be perceived from a double point of view: the point of view of the “follower company” (the company that urge for improvement and wants to reach the top) and the “leader company” (the top company, meaning the companies which already are on the highest level of recognition on the market).

We point here the observation that the general term “market”, in our case, doesn’t refer only to the shipping business market (i.e. the market where water transport services are commercialized). The notion of “market” is more complex and, beside shipping companies (meaning the companies owning ships and selling transport services), it also includes industry sectors like the shipbuilding market (companies building new ships or making repairs and docking), the financial market (banks and financial institutions lending money to new investors or to ship owner companies for buying new ships or for covering expenses), the legislative environment (the International Maritime Organization and many other shipping-related governmental and non-governmental companies) and other businesses related to shipping but non-providers of sea transport service (ship management companies, crewing companies, shipchandling companies, insurance companies and P&I clubs, bunkering companies, education and training companies etc.).

Therefore, from our point of view, when considering benchmarking in ship management, benchmarking doesn’t refer only in establishing the ‘best of the best’ practices of ship management, to be followed, as delivered by the top listed companies in ship management. Indeed, top ship management companies are able to communicate their key practices to the external environment. But it is more accurate to analyze ship management benchmarking taking into consideration the complex background of the shipping business, as well as the background of those businesses related to shipping directly or indirectly. We conclude that, in the case of benchmarking in shipping, a “follower ship management company” that strive for excellence should take into consideration not only its own internal and external business environment and top examples of its direct competitors, but it also should take into account top examples of other companies of the complex shipping market, though such companies might not be neither clients, providers or competitors. Why? Because new ideas of improvements can come from everywhere throughout the market.

5. How to establish benchmarking in ship management?

There are several answers and point of views for this question.

Comparing companies in the same business is made with the help of comparing various indexes. The flair of a researcher that has to answer such question resides in choosing the right indexes for comparison. From our point of view, is significant to compare not only the companies’ turnover over the same period of time, but also there should be compared key indexes specific to the shipping sector. What kind of indexes is relevant enough for benchmarking ship management companies? From our point of view, certainly is the case of those indexes which reflect the activity of ship management, as following:

- for crew management performance: employees performance is reflected by the number of incidents on board ship; employer’s motivation performance is reflected by the rate of crew drop out, etc.;

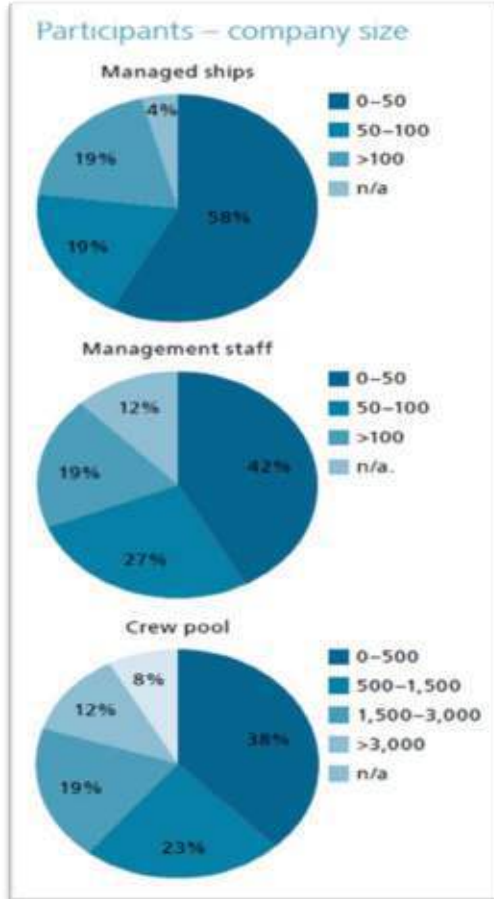
- for technical management of ships: performance of ship operations reflected by the numbers of technical breakdowns; the financial value of the technical failures; the financial value of investments in high technology; medium rate of provider’s discounts;

- for commercial management: number of ships, number of clients (freighters), value of contracts, value of transported cargo; medium rate of fleet’s age etc.

A complete list of key indicators in shipping is known as referring to the “Shipping KPI System”, including “a standard of 64 different performance indicators (such as ship unavailability and number of environmental related deficiencies) to allow the most specific and accurate comparison of ships – within each sector and more broadly across the industry”, covering: health and safety management and performance, HR management performance, environmental performance, navigational safety performance, operational performance, security performance and technical performance (<https://www.shipping-kpi.org>).

Also, a significant study was *Best Practice Ship Management Study* made in 2013 by Germanischer Lloyd and Fraunhofer Center for Maritime Logistics and Services [12]. The study discussed best practices on ship management, comprising “approaches, procedures, business models or tools that ship managers use to do their business smarter, safer, and greener – i.e. to be on top of competition”. The study was based on data collected from around 100 ship management companies worldwide that were analyzed regarding what they were doing to improve their operations and what they considered as being of “best practice” in the industry. The selection of the participants to the study was made in regard with the size of the company, the staff dimension and the crew pool, as shown in Figure 1 below.

Figure 1. Types of participants at the Best Practice Ship Management Study.



Source: (Bussow and John, 2013, 5-31)

According to the study, the world current situation in ship management is of increasing pressure, though today there is some slight relaxation period in the market from the 2009's sharp edge crisis period. While overcapacity in the market is driving charter rates down, ship owners face higher costs to finance vessels. Also, ship operators fight for cargo and reduce the fuel costs, meanwhile ship managers “sit in the middle with increasing burdens for the same management fees” (Bussow and John, 2013, 5-31)

6. Conclusion

Benchmarking is a term met not only in economic sciences, as widely known, but also in other scientific domains. Benchmarking ship management companies involves establishing “the best of the best” companies that have the role of trend-setters for the domain, from the point of view of their business model practices. Benchmarking can be made using a classification system based on various key indexes. This paper presents our point of view in establishing guidance parameters for a proper benchmarking in the ship management services sector.

7. References

1. Romanescu, M. L., "The Analysis of the Benchmarking Method Specific to the Romanian Quality Assurance of Higher Education", *"Ovidius" University Annals, Economic Sciences Series, Volume XIII, Issue 2*, Ovidius University Publishing, Constanta, 2013, pp. 489-491
2. Păunescu M., Vlăsceanu L., Miroiu A., *Calitatea învățământului superior din România: o analiză instituțională a tendințelor actuale*, Polirom Publishing, Iași, 2011.
3. Raa, T., Benchmarking and industry performance, *Journal of Productivity Analysis*, December 2011, Vol. 36, Issue 3, pp 285-292.
4. Wenzel-Benner, C., Gräf, J., "XBX: eXternal Benchmarking eXtension for the SUPERCOP Crypto Benchmarking Framework", *Cryptographic Hardware and Embedded Systems, CHES 2010*, Vol. 6225 of the series Lecture Notes in Computer Science, Springer Berlin Heidelberg Publisher, 2010, pp. 294-305.
5. Weicker, R., "Benchmarking", *Performance Evaluation of Complex Systems: Techniques and Tools*, vol. 2459 of the series Lecture Notes in Computer Science, 2002, pp.179-207
6. Soelter et al. , "Benchmarking physicochemical vs. vibrational descriptors in predicting odor receptor responses", *Flavour* vol. 3(Suppl 1), 2014, pp:O6.
7. www.bimco.org
8. Waals, F. A. J., Veenstra, A.W., *A Forecast Model and Benchmarking of the Supply and Demand of Maritime Officers*, Erasmus University Rotterdam, 2002
9. Mitroussi, K. 2003, ' *Third Party Ship Management: The Case of Separation of Ownership and Management in the Shipping Context* ', *Maritime Policy and Management*, 2003, Vol. 30, No. 1, 77-90.
10. Christian, M., Jakobsen, E. W. and Zhovtobryukh, Y., *GCE Blue Maritime – Global Performance Benchmark*, 2015, Menon publ. no 34/2015, available at www.menon.no
11. <https://www.shipping-kpi.org>
12. Bussow, T.; John, O. (coord.), *Best Practice Ship Management Study*, Germanischer Lloyd Maritime Software GmbH and Fraunhofer CML, Hamburg, Germany, 2013, pp.5-31.