



Modeling selection of third party ship management services

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ABSTRACT

Selection of third party ship management (TPSM) in the shipping industry is a complex decision making problem influenced by various factors, which are sometimes contrary in nature. These factors are interrelated and analysing them often requires knowledge, skills and competence from multiple persons. Although multiple attribute decision making methods such as the analytic hierarchy process (AHP) have been widely applied to tackle service selection in many areas, the feasibility studies of using them in TPSM indeed remain scary showing a significant research gap to be filled. This paper aims to develop a TPSM selection model based on AHP, in which major selection criteria are identified through surveying as well as use the developed modeling in a real TPSM selection case of the Bibby Line shipping company. In the case study, the criteria include price, reputation, location, experience, technical expertise and relationship. Data was collected through a combination of relevant literature and interviews with some domain experts/professionals from shipping and ship management companies. The research findings indicate that experience and reputation are the most important criteria for shipping companies when considering the use of the third party services. Also, the developed model as a transparent decision making tool can effectively facilitate ship owners' selection of the TPSM services as well as their benchmark with respect to each criterion identified. The model and tool are demonstrated in a real TPSM selection case of the Bibby Line shipping company. Consequently, the results were in agreement with the current model used at Bibby's operations, while it proves to be more straightforward and visible for decision makers. Furthermore, this study also shows the advantages and disadvantages of the selected TPSM compared to the other competitors with respect to different criteria, which provides TPSMs with clear benchmarks to improve their services to meet their customers' need.

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1. Introduction

Ship management in the 21st century economy is gradually posing some challenges to both shipping companies and ship owners. These challenges cannot be overcome without the integration of proper awareness creation, sustainable framework and strategic management plan among others in this context. Indeed, these measures necessitate the involvement and understanding among the different parties engaged in ship management business for its smooth operations. Third party ship management (TPSM) has been variously defined in different studies. A well accepted definition by Mitroussi (2004) stated that TPSM companies are professional, independent organizations which for a negotiated fee and with no shareholding ties with their clients undertake responsibility for the management of vessels in which they have no financial stake. It has been emphasized that these companies provide a variety of services covering the whole range

of ship management such as crewing and technical management. Insurance, freight management, accounting, chartering, sale and purchase, provisions, bunkering and operations are also in this category.

Ship management originated from an in-house function of vessel owners and their need to operate vessels, has brought about a proper organization to handle their ships and perform shipping functions such as crewing, maintenance, supply and compliance with statutory matters. TPSM has emerged as the preferred ship management option out of three types which enjoyed patronage until mid-1990s. They include (a) traditional, which is entirely combined in-house management by vessel owners; (b) outsourcing (also known as third party management), which is centered on a complete or crew contracted out management of shipping functions to a third-party management company; and (c) the hybrid, which is outsourcing of certain shipping functions to ship managers, and can include joint venture and benchmarking (Branch, 2007).

The growth of TPSM started as a result of vessel owners trying to avoid the limitation of unfavorable fiscal system of national registries and excessive crew expenses. Basically, this will further be stimulated by the fact that lots of vessels owners were

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experiencing high operating costs in the face of a depressed freight market (Bajpae, 2009). Outsourcing of the vessel operations to a ship manager was an efficient way of reducing operating costs.

As a result of an increasing tendency toward the outsourcing of ship management activities, shipping companies and ship owners have been faced with an inevitable need to select the best suitable TPSP. The choice of a third party company with whom the owners can establish strong relationships has become a crucial decision to make. Use of third party managers, which suits the needs of outsourcing companies, has increased profitability of the companies in various ways by allowing them to concentrate on the core operations of their organizations. This paper develops a methodology for designing a transparent decision making tool for shipping companies to select TPSP using the analytic hierarchy process (AHP) approach.

To achieve this aim, Section 2 reviews the relevant literature to address the scope of the study. Section 3 describes the framework of developing a TPSP selection model and decision tool. Section 4 demonstrates the developed methodology using a real case study by the Bibby Shipping Line. Section 5 concludes the paper with the recommendation for future research in the area.

2. Literature review

2.1. Historical background and growth of ship management

The origin of TPSP can be traced back to the time after the Second World War (Mitroussi, 2003). However, in the mid-1960s the growth in shipping operation prompted the creation of a new ship management industry which is illustrated as shipping industry's fourth wave (Sletmo, 1989). The International Labour Organization – ILO (2001) also, noted that outsourcing in shipping started after the Second World War, due to the development of 'flags of convenience', a practice, which expedited in the 1960s with the emergence of professional 'ship management' companies where shipping functions were contracted out from titular vessel owners.

TPSP started in the shipping industry with those whose core business and interest were not directly linked to ship operations, such as the oil majors who transport oil from independent vessel owners through chartering. With the high tax allowances on ship investment, they sought to avail themselves of the financial prospect ensuing from ship ownership. Ships obtained by this means were handed over to professional ship management companies in meeting this demand.

Also, due to the economic transformation of the 1990s the development of ship management occurred in opposition to the international background of articulation of ship management as a separate discipline. This resulted in the formation of International Ship Managers' Association (ISMA) in 1991 and the approval of the International Safety Management (ISM) Code by the International Maritime Organization (IMO), which started in 1 July of 1998 and was employed to ships in 2002 in ensuring excellence, professionalism and reliability in every areas of ship management business (Bajpae, 2009).

2.2. The rationalization for outsourcing ship management

As competition increases and companies enlarge or even scale down, there is high demand for companies to reach a higher level of operational effectiveness and good customer service quality. To attain this, companies have the option of either adding significant logistics headcount to their existing infrastructure or subcontracting to third party suppliers (Gilley and Rasheed, 2002). The latter is now the preferred option by many firms.

Besides, in manufacturing, there is improvement on supply chain arrangement by outsourcing in order to attain the needed "demand-driven manufacturing" where companies only manufacture what is ordered by their customers. Typically, the business of shipping conforms to the standard of outsourcing in its basic features which is understood by the protection of core business practices and cost cutting (Halvey and Melby, 2000). It is a process of cutting down running costs and employment, through the reorganization of managerial power and operational locations (Bergstrom, 2001). Growing demand for supply chain outsourcing and increasing the numbers and types of logistics service providers (LSP) enhance the importance of LSP selection process. Firms use different approaches to analyzing, evaluating, and selecting the appropriate LSPs. Bhatti et al. (2010), Daim (2013), and Talluri and Baker (2002) applied different mathematical models to evaluate, rank, and select the appropriate suppliers in specific industries based on limited number of criteria. While Wu and Huang (2007), Ramanathan (2010), Alvandi et al. (2012), Büyükoçkan et al. (2012), Ha and Krishnan (2008), and Falsini et al. (2012) applied an integrated mathematical models to handle both qualitative and quantitative data in different evaluation and selection cases, some which were so complex and difficult to implement. While many previous studies focused on the outsourcing activities from a supply chain perspective, few have been down in the literature to investigate the selection of TPSP in the shipping sector which is often deemed as an important transport element in a supply chain system. Outsourcing transforms the current shipping industry.

Furthermore, there are many arguments made for and against the use of third party ship managers over the years. However, a key rationale for outsourcing ship management activities is the intensified globalization of businesses. This has been sighted by many as the most significant factor (Foster and Muller, 1990; Trunick, 1989). As a result, this has motivated a more complex decision compelling companies and ship owners in using the services of a professional ship management company, in order to focus on core operations and leaving the rest to professional TPSP companies (Grewal et al., 2008).

Trunick (1989) identified emerging technology and versatility of third parties as two other essential drivers of outsourcing. Since it would be time consuming and costly to build up and execute new technologies in-house, companies can simply make use of those available from TPSP. Efficiency and cost reduction are also vital areas related to adherence in international shipping regulations that are becoming more stringent. Implementing and adhering to the stipulations of policies like the International Safety Management (ISM) Code necessitate additional personnel that is technically experienced.

The question of outsourcing is more than a simple "make or buy decision". Companies have to consider carefully the mix of services they desire. Hence, there is a need for clients to understand what kind of services they need from third party providers, as the dangers involved in outsourcing are not insignificant.

2.3. The difficulties in the current status of third party selection practice

The selection of the right ship management company is not a simple task. This is because there are many companies offering ship management services from many different locations worldwide with various service quality provided. The complexity is further due to the number of factors which influence shipowners' decision making. While some of these factors can be quantified, others are less tangible and must be assessed on a qualitative basis.

Selection of TPSP is just like another outsourcing decision and commences with recognition of the problem whether to outsource the management of a ship to third parties, when considering the

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