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Organization and management of dry bulk shipping companies

Ioannis Theotokas

3.1 Introduction

In this chapter, the analysis centres on the organization and management of dry bulk shipping companies. Organizing is defined as the management function that deals with the assignment of tasks, the grouping of activities into departments, and the allocation of resources to the departments, while management refers to the attainment of organizational goals in an effective and efficient manner through the functions of planning, leading, and controlling (Daft, 2010). The need for a separate examination of the organizational and management approaches adopted by dry bulk shipping companies has to do with the characteristics of the environment in which they operate. As a rule, these are companies which are active in the world shipping market, derive their factors of production on a world-wide basis, and provide their services all over the world. In parallel, they are not subject to geographical limitations either as to the basic factors of production (capital-labour-institutional framework of operation of ships and offices), or as to the offer of their services.

Dry bulk shipping companies produce transportation services to meet derived demand, a characteristic which leads to major fluctuations in freight rates, and, at the same time, to fluctuations in the prices of ships. The strategy they implement determines their degree of flexibility. Thus, they are able to implement strategies which lead to immediate yields, either through the buying and selling of ships, or in the form of chartering of the vessels; at the same time, they are able to remain flexible in dealing with conditions in the freight markets in which they are active, by increasing or reducing their fleet accordingly.

All the above characteristics have a reciprocal influence with the organization of the companies. In the first part of the chapter an account is given of the processes and departments of bulk shipping companies. This provides the basis for understanding the tasks of the shipping companies and the way they are allocated in departments. In the second part, basic principles of the organization of these enterprises are analyzed, which provides a better understanding of structural and contextual factors that affect the structure of organization. The third part of the chapter highlights the structuring of the enterprises including their organizational structure and departmentalization, and the last part discusses issues relating to the human resources on board the ships of dry bulk shipping companies.
3.2 The processes and departments of dry bulk shipping companies

The processes of the shipping enterprise, though in their basic form they do not differ from the processes of other enterprises, nevertheless manifest themselves as complex, since the productive units are constantly on the move and may be thousands of miles away from their headquarters – that is, the administrative centre, where the company is established and manages its fleet. Naturally, a shipping company may have branches in different geographical areas, depending upon the strategy and the range of its activities. The reference to the place of operation of the shipping company is connected to the fact that the conditions which shape the institutional framework, the availability of the factors of production, and a series of other factors pre-eminently affect the manner of organization and operation of its infrastructures on land.

In the case of a shipping company, the groups of processes and the systems of support resources and control can be analyzed by means of the core processes and systems approach (Miller, 1998). However, the individual processes which make up each group differ from one another, since the object of the activity of the enterprises gives rise to special needs which are expressed both in the definition of each process, and in the procedures and activities of which it is composed. The groups of processes and systems of the shipping enterprise include processes relating to the development of the service, those relating to the creation and management of demand, and those relating to the satisfaction of demand, support systems, and control systems (Exhibit 3.1).

3.2.1 Process for developing the maritime transport service

The process which is related to the development of the maritime transportation service is the selection and acquisition of a vessel. This is a basic strategic decision which has to do with the aims, the strategy for their realization, the sourcing of the necessary resources, and the development of the corresponding capabilities. The process includes decisions in connection with the composition

Exhibit 3.1 The processes and systems of a shipping company. Source: I. Theotokas (2018: Figure 3.2), based on Miller, 1998: Figure 4.7).
of the company’s fleet (and therefore the freight markets in which it will be active with its ships) and the purchase of new ships (by means of shipbuilding) or second-hand ships, as well as the time of implementation of the decision. In the context of this process, decisions for the sale of managed ships either for further trading or for scrap are taken. The type and individual characteristics of the ship will determine the freight markets in which it will take part and the service which it will provide. They will also define its earning potential because volatility in the dry bulk freight markets is different for different-sized ships (Kavussanos, 1996). The larger the ship the more drastic are the responses of profitability to unexpected changes in the market (Alizadeh and Nomikos, 2010). In the case of liner shipping or passenger shipping, this process is more complex and includes the planning of the routes or the lines on which the enterprise’s vessels will be active. In bulk shipping, the development of the service involves the choice of the type of vessel and of the geographical region in which it will be active.

The need for capital for financing the acquisition of high-value assets is very high. Bulk shipping companies enter the international markets to gain access to the capital they need. Thus, like any other resource they employ, capital also comes from the international market. In most cases, the amount of capital needed defines the source as well as the number of institutions which provide it. Fund-raising in shipping is based on financing instruments and tools which are sophisticated, innovative, and complex. These instruments can be distinguished in equity finance (public fundings, seasoned equity offerings, retained earnings, and private equity funding), debt finance (bank lending, corporate bond issues, specialized financial institutions, shipyard finance, private debt finance) and alternative finance (lease, mezzanine finance, securitization, hybrid finance) (Syriopoulos, 2007). The most important source of capital for shipping are still the shipping banks. They provide capital after a credit risk analysis which is based on character and capacity of the head of the shipping company and the management team, on capital, on company, on conditions, on collateral, and on cash flow analysis (Grammenos, 2010). Several factors related to limitations faced by the financial institutions, as well as the need for risk sharing, lead shipping companies to choose a combination of methods for raising the needed funds. For example, the NYSE-listed Star Bulk Carriers, to which the private equity fund Oaktree Capital Management made a placement (Star Bulk, 2017b), states in its website as a core element of its business strategy the support of 15 international banks and two prominent leasing companies (Star Bulk, 2017a).

3.2.2 Chartering process for demand management

This process has to do with the creation of demand for the maritime transportation services of the company, that is, in essence, with making available the company’s vessels in the charter markets and the ensuring of employment for the vessels. It is, then, a process which is carried out by the specialized chartering department. Chartering personnel have duties similar to those of ship brokers and also possess, as a rule, apart from information on the market, the required specialist skills and knowledge (information, technical knowledge, knowledge of the legislation, negotiating skills, etc.) to negotiate the terms of the charter party. The choice of the form of the charter, that is voyage charter, time charter, or bareboat charter, as well as the decision to participate in commercial pool, is a process of strategic character, as it is connected with the approach of the company towards the risk created by the fluctuations in the chartering markets. An accurate analysis of market data and the choice of the appropriate form of charter by a creditworthy charterer are necessary conditions for the survival and development of the enterprise.

Market volatility forces companies operating fleets of medium and large size to adopt a balanced chartering strategy, i.e. a portfolio of voyage and time charters. This allows them to make effective use
of the prevailing conditions and reduces the risks which may result from a sudden fall in the demand for transportation services. Eagle Bulk Shipping, for example, who operates a fleet of more than 40 bulk carriers, focuses on voyage chartering; however, it monitors the dry bulk shipping market and considers taking advantage of long-term time charters when the market conditions favour this choice. At the end of 2019, 23 ships were time-chartered, 17 ships were voyage-chartered, and one ship was linked to a commercial pool (Eagle Bulk, 2017). To further reduce the risk caused by fluctuations in the freight markets, many shipping companies engage in forward agreements, such as forward freight agreements, i.e. agreements between two parties on the determination of a freight rate to be applied to a specific quantity of cargo or type of vessel, for one or a combination of the major shipping routes in the dry-bulk or the tanker markets at a certain date in the future (Kavussanos and Visvikis, 2006; Nomikos and Alizadeh, 2010). Companies implementing freight options are able to hedge if the market moves against their forecast and to take advantage of favourable conditions if their forecast proves to be true (Nomikos and Alizadeh, 2010). The type of charter it employs for the ships affects the flexibility of the company in the short term. The choice of voyage charter provides flexibility for the geographical or market positioning of a ship as well as for the selling of the ship when conditions in the charter market favour this choice.

For the optimal implementation of this process, the company must develop and manage in a suitable way communication with potential clients and, overall, with the stakeholders, that is, with all the groups of individuals with an interest in the course followed by the company (suppliers, state authorities, etc.).

### 3.2.3 Operations, technical, and supply processes to satisfy demand

When the chartering of the vessel has been secured, the enterprise must now ensure the provision of the maritime transportation services to the clients/charterers at the appropriate time, with the quality required by them and with safety for human life and for the environment. In practical terms, this means that the vessel which has been chartered must be ready to load, to carry, and to discharge the cargo at the destination port on the basis of the scheduling in the charter party; it must be properly maintained and observe the terms of the regulations; the crew must have at its disposal all the means necessary for the operation of the vessel, while the ship itself, as a means of production, must be insured against risks, and, finally, the operation of the ship and the crew must be supported by systems which ensure their quality and safety. The above processes are carried out by specialist departments of the enterprise, which have the responsibility for the operational and technical management of the vessel, support for its operation by the provision of spare parts, of catering for the crew, etc., for the insurance cover and handling of the claims for compensation which are generated, and for the management of the safety, quality, and training of the workforce.

The activities which relate to the day-to-day operation of the vessel are carried out by the ship operators, who are members of the personnel of the operations department. This department in many companies serves as the basic link between the administration, the rest of the enterprise’s departments, the vessels which it manages, the charterers, the suppliers, and other individuals or organizations. The activities of the operations department can be divided into the following areas (Goulielmos, 1996: 290):

- external processes, that is, relations with the ship’s agents, the suppliers of fuel, the charterers, and others having dealings with the vessel;
- the ships, the movements of which it follows closely and supports;
- internal processes, that is, the relations it maintains with other departments of the enterprise and the information which it supplies to or receives from them.
Dry bulk shipping companies

The operator is usually a captain, who possesses first-class knowledge of the individual characteristics of the vessel, of the terms of the charter party which the ship is fulfilling, and of the conditions which its crew is likely to encounter during the course of a charter.

The operator provides the captain with additional instructions or advice where this is necessary, and applies the policies, the rules, and the procedures provided for by the company’s management system. For him to be effective in communicating with the captain, he must be capable of placing himself in the place of the one who is receiving the instructions and is called upon to implement them (Kennedy, 2011). He should, then, have a good knowledge of the organization of the ship, and of the duties and roles for each job. In view of the fact that a large percentage of vessels nowadays are manned by crews of different nationalities, the operator must be able to handle the sensitive issue of cultural diversity (Theotokas and Progoulaki, 2007).

Another important department which supports the day-to-day operation of the vessels is the ships’ technical department. Technical management is one of the most fundamental processes of a shipping enterprise since its effective functioning contributes to the improvement of the vessel’s productivity and influences fundamentally the cost of the transportation services being provided. Furthermore, it includes a wide range of competencies, such as the scheduled maintenance and the inspections of the vessel, its repairs and dry-docking. Technical experts in co-operation with staff in ships carry out the activities of the technical department. They work closely with classification societies and surveyors and inspectors who ensure that the ships are properly maintained (Downard: 1990: 74).

The operational and technical management of a vessel are related to the process of safety, quality, and environmental responsibility management, which includes the development, operation, and administration of management systems which answer to the specifications of regulations such as the International Safety Management (ISM) Code and standards such as ISO 9001 and 14001. These standards set out the requirements for the development and implementation of a quality management system and an environmental management system, respectively.

At the same time, the existence of the necessary equipment (spare parts, engine supplies, lubricants, paints, etc.) and of the services required, as well as the provision of the necessary catering for the enterprise’s crew, are required for the safe and uninterrupted operation of the vessel as a productive unit. The responsibility for this is that of the company’s supplies department, which has to ensure an adequate supply of consumables and equipment on board the ship so that the voyage is not affected, and that risks do not arise either for the ship’s crew or for the cargo because these are lacking.

Insurance cover against risks is another important process in the management of dry bulk vessels. The handling of the insurance covers of a shipping enterprise is undertaken by the specialist insurance department, which is responsible for ensuring the protection of the ship-owner (an individual or an enterprise) from risks by insuring the vessel against total or partial loss, losses caused to third parties, or other risks, such as loss of profit or war risks. Also of importance are the monitoring and processing of any claims which may arise for the company.

3.2.4 Resources systems

Resources systems can be divided into support systems and control systems. Support systems include financial management and the accounts office, the management of information and communications, and the management of the workforce employed on the ships and in the offices of the enterprise, of which a separate account will be given in the rest of the article. The company’s control systems do not necessarily involve specific processes, but activities which are diffused throughout all the other processes and have as their purpose the
monitoring of the distribution and of the effective and efficient employment of the productive resources. For example, the assessment of the performance of the personnel in the offices is a control system which can be implemented both in the process of the human resources management and in each process separately by the person responsible for it. Control of the budget in the case of each ship and of that of the enterprise as a whole can be exercised by the department auditing the financial management and by their heads of operations in the areas of which they are in charge.

The above summary account is proposed as a framework for the analysis of the processes of a dry bulk shipping enterprise, which allows for extensions and adaptations, depending upon the particular requirements and the special characteristics of each shipping company. The company’s development and competition strategy, the strategy for the employment of the vessels, the size of the fleet, the specialization of the ships and the level of technology, the quality of the workforce, and the company’s culture are basic factors which determine the extent of the processes which the enterprise will develop. The above processes, as has already been pointed out, are necessary if the dry bulk shipping company is going to be able to provide the transportation services of its vessels. The company’s strategy as regards its organization will determine how far these processes will be developed by the company itself or will be assigned to third-party enterprises within the framework of the outsourcing strategy.

3.3 The organization of dry bulk shipping companies

A systems approach of the organizations provides the framework for an understanding of the interdependences which shipping companies manifest in their organization. A shipping enterprise can be analyzed as a system of interconnected and interdependent parts. Its administration is complex, because it includes the management of units of high capital value which are scattered in distant regions of the world, so that the day-to-day monitoring of their operation is difficult (Frankel, 1982: 103). For organizations that “perform the same functions with the same division of labor and hierarchical arrangements in multiple locations” (Hall, 1996: 56) spatial dispersion is an element of their organizational complexity. Bulk shipping companies manage ships which, although identical in structure, differ from one another, and operate branches at different geographical positions, i.e. they are organisations with high spatial dispersion.

At the same time, the company’s offices are organized in departments using the criterion of the management or support of the operation of the vessels. The performance of the ships is affected by physical factors, as well as by the acts and omissions of the crews on board of them and of those working in the enterprise’s offices on land. This means that careful co-ordination and co-operation between the various departments and the ships are required for the achievement of the common objective. Furthermore, an estimation of the direct and indirect impact of specific decisions or actions taken either by a vessel or a department on the rest of the company’s ships and departments is needed. Within this framework, communication between the different departments and the ships, which are the sub-systems of the system in the case of a shipping enterprise, is a precondition for effective functioning and the achievement of the aims both of each sub-system and of the enterprise as a whole.

The organization of shipping companies, like that of any other company, is characterized by standardization, that is, the degree to which expectations in connection with the means and the final result of its work are specified, written down, and enforced to the members of the organization; the concentration of power, that is, the degree to which decision-making remains
at the highest levels of management or is decentralized to the other levels; and the complexity in
the division of labour, that is, the degree to which there are different job titles or occupational
groupings and different units or departments (Donnelly et al., 1995: 231).

Starting out from standardization, it should be noted that the introduction of regulations and
codes which deal with safety and the quality of services led to an increase in the degree of stand-
ardization of jobs carried out by the human resources on land and on the vessels. This tendency
appears to have also affected the degree of centralization and decentralization of decision-taking,
as it has led to the ceding of decision-taking power to operational personnel of the enterprises,
on the basis of the provisions of their management systems. The available infrastructure of com-
munication between a company’s ships and offices is also contributing in this direction.

With regard to complexity, this may be horizontal (number of departments in the enter-
prise), vertical (hierarchical levels), or geographical (dispersion of activities and personnel). Dry bulk shipping companies are organizations of relatively large horizontal complexity,
which, of course, is a function of the size of the fleet which they manage, but also of the
degree to which they carry out internally the whole of their management processes and
do not outsource some of these to third parties. Further, dry bulk shipping companies are
organizations of small vertical complexity, since their hierarchical levels are, usually, few. On
the other hand, the ships display less horizontal complexity, but, as organizations with many
hierarchical levels, they manifest great vertical complexity. Thus, bulk shipping companies’
organization could be presented as a flat hierarchy; each ship as a vertical one. As regards geo-
ographical or spatial dispersion, shipping companies are systems containing complex organi-
zations which carry out the same processes, have the same division of labour, and maintain
the same hierarchical levels in branches which operate in many different locations (ships and
offices). Spatial dispersion is a matter of size of the fleet managed by the company, as well as
of the differentiation of the fleet. The higher the number of ships and the differentiation of
the fleet are, the higher the spatial dispersion of the company is expected to be. For example,
Oldendorff, which operates approximately 600 privately owned and chartered ships, is the
world’s leading dry bulk operator, with offices not only in Germany, where it is based, but in
16 different countries (Oldendorff, 2017a).

Of importance are factors related to the chartering strategy of the company and the extent to
which they manage processes related to ship management internally or outsource them. For ex-
ample, Torvard Klaveness owns 16 vessels but it commercially operates close to 135 vessels. The fact
that technical management of ships is insured, and that it provides commercial services to many
vessels through the Klaveness Chartering and runs two dry bulk pools, led the company to oper-
ate chartering offices in Oslo, Singapore, and Shanghai, and offices in the Philippines, Romania,
and South America for technical management services (Klaveness, 2017). Golden Ocean, which
outsources technical management of ships, at the end of 2016 managed more than 70 capesize,
panamax, kamsarmax, and supramax, and operated offices in Oslo and Singapore. The company
contracted with independent ship management companies to manage and operate its vessels,
while technical supervision services were provided by Frontline (Golden Ocean, 2017). It should
be noted that Frontline itself implements a strategy of outsourcing management, crewing, and
accounting services to independent ship management companies (Frontline, 2017).

The above-mentioned examples, however, should not lead to the conclusion that spatial
dispersion is high for all dry bulk shipping companies. A great percentage of them operate fleets
of small or medium size, which are managed from their head office, located in one of the main
ship management centres such as Piraeus, Oslo, Singapore, or Hong Kong. For these companies,
spatial dispersion is a dimension of organisational complexity related to the ships they operate.
3.4 The organizational structure and departmentalization of dry bulk shipping companies

Success for a shipping company is related with the existence of an organisational structure which facilitates organisational development, use of necessary know-how, change, simplicity, concentration on its aims and cost control (Lorange, 2005). The structuring of shipping companies is based on criteria such as interdependence and specialization of jobs and the pursuit of the best employment of resources. Furthermore, factors which are taken into consideration in the choice of structuring are the size of the enterprise, the spread of its activities, the complexity of the operational environment, the type of service which it provides, that is, the type of vessels which it manages, relations with the charterers, and the chartering strategies which it implements.

The strategy is one of the factors that define the organizational needs of the company and affect the choice of its structure. Different levels of strategy and the related alternative options affect the decision. In this context, strategies for ships' acquisition and finance, investment strategy, competitive strategy, chartering strategy, strategy for insourcing or outsourcing of processes, and strategy for ships' crewing define the vertical, horizontal, and spatial complexity of dry bulk shipping companies, i.e. their organizational structure.

An example can be given with regard to the investment strategy of the company, i.e. the choice between the long-run selling of shipping services or the beating of the market with sales and purchases of ships (Hope and Boe, 1981). The first choice mainly involves planning investments and purchasing ships in order to offer transport services over a long period, while the second sees ships as an asset with the aim of buying and selling ships on the markets. Companies active in second-hand market for ships employ personnel for the scanning of the market either to buy or to sell ships. The organisation of Oldendorff Carriers, for example, includes departments in Germany and Tokyo, responsible for the sale and purchase of ships (Oldendorff, 2017b). On the contrary, companies adopting the first choice invest in the development of their chartering operations.

The basic forms of structuring observable in dry bulk shipping are the following:

3.4.1 Functional structure

In functional structure, activities are grouped in departments on the basis of their operational specialization. This applies to companies with a small range of services which do not change over the course of time. It allows for central control, leads to a clear definition of competences, and at the same time facilitates concentration on operational issues, and therefore on the development of specialization among the personnel. At the same time, it has weaknesses which are connected precisely with the concentration of the personnel on their specialization, to the detriment, perhaps, of overall company objectives, with the emergence of problems of horizontal communication and difficulty in adapting to changes in the business environment.

In the case of a shipping company which applies a functional structure, there are departments which correspond to the processes which were analyzed in Section 3.2. A typical form of functional structuring according to the process involved is shown in Exhibit 3.2. The extent of functional structuring depends upon the size of the enterprise, and, consequently, upon the volume of jobs and the number of its personnel. In large-size companies which apply a functional structure, each process is organized into an independent department. Functional structure is the traditional form of organization in shipping companies also (Smith and Roggema, 1980). The majority of dry bulk shipping companies, especially those operating fleets of medium and small size, adopt the functional structure for their organization.
Exhibit 3.2  Functional structure.
Source: Theotokas (2018: Figure 6.1).
3.4.2 Divisional structure

This is a structure by division of activity, which is often referred to as divisional structuring by product or service, or by strategic business units, groups activities, and processes on the basis of the organization’s outflows (Daft, 2010: 105). In the case of the shipping industry, it is adopted by enterprises which manage diversified fleets with a large number of ships. The fleet is divided into groups, depending on the specialization of the vessels, and each group constitutes a division. Within each division, those processes which involve the management of the vessel and require specialization as regards its type, such as technical and operational management, are organized into a department, whereas support processes are organized into independent departments, which serve all areas of activity. Exhibit 3.3 shows an indicative form of divisional structure by product or service on the basis of the types of ships managed by the enterprise. The logic of this form of divisional structure is based on the fact that different divisions (types of ships) require different knowledge and skills.

Among the advantages of divisional structuring is the scope it provides for rapid changes in an unstable environment, flexibility in the organization of each division, the co-ordination of different processes within each division, and the development of personnel with overall supervision of the company’s processes.

Among the disadvantages of divisional structures are the increased cost of implementation, as it eliminates economies of scale in the operational departments, the likelihood of a conflict between the divisions over claims on business resources, and the addition of a further level of management.

Its full implementation in the shipping industry is observable only in enterprises with very large fleets and many types of vessel, each fleet being made up of a large number of ships.

Exhibit 3.3 Divisional structure.
Source: Theotokas (2018: Figure 6.2).
3.4.3 *Matrix structure*

The matrix form of organization involves the grouping of activities on the basis of process and activity and combines vertical and horizontal lines of power simultaneously. On the vertical axes are the company’s various processes, and on the horizontal, the different areas of activity or the various tasks which the enterprise carries out (Carrell et al., 1997).

The matrix form increases flexibility and allows for adaptation to any rapid changes in the conditions of the operating environment of the enterprises. It makes possible the optimal use of specialized personnel and equipment, motivation, flexibility, encouragement of co-operation, staff development, creativity, and the creation and diffusion of knowledge. Of course, it possesses disadvantages which have to do with the existence of a system of duplicated power and responsibility and probably time-consuming procedures in the taking of decisions and the resolution of disputes.

This is a kind of departmentalization suitable for dry bulk shipping companies, which operate in a dynamic and uncertain environment. A shipping enterprise requires an organizational structure which is simultaneously centralizing and decentralizing, since it needs special decisions on technical fields of high specialization, such as technical management or the scheduling of movements of a ship, but also a high degree of unification of all these decisions. For this reason, the role of a matrix organization is considered substantive in shipping, as it permits the co-ordination of specializations both at the level of process and at that of activity (Frankel, 1982). Furthermore, departmentalization of a matrix form orientates to a greater extent the whole organization towards the vessel and favours decentralization through the entrusting of more decisions to its personnel (Downard, 1990). The diversification of fleets they manage and the need for greater efficiency to increase competitiveness were factors that favoured the implementation of matrix structure (Smith and Roggema, 1980).

**Exhibit 3.4  Matrix structure.**

*Source: Theotokas (2018: Figure 6.3).*
3.4.4 Team structure

The structure of this form is based on interdepartmental teams. These teams include employees of differing specializations from different departments, a factor which leads to the development of new knowledge and its diffusion, while also contributing to the sound co-ordination of activities in the interior of each team. In effect, each team consists of employees with specializations which correspond to the processes of the satisfaction of demand, described in Section 3.2.

Team structuring constitutes a flexible structure as it keeps the hierarchy and the boundaries of the operational departments within limits. It is thought to increase the adaptability of organizations, improve the co-ordination between the functional specializations, and contribute to the proper employment of the human resources (Morgan, 1986: 82). Nevertheless, it is likely to cause an increase in complexity in the organization of the enterprise, particularly if that includes many small-size teams, resulting in difficulties arising with regard to control. For this reason, a factor crucial for the success of the teams is their unification (Mullern, 2000).

As by means of team structure an organization acquires a horizontal orientation, its flexibility is increased, while at the same time, decentralization in the decision-making and specialization of personnel who take on overall supervision of the task of management are facilitated. It is also important that the employees on land are orientated towards the result, that is, serving the ships so that they operate effectively. Each team is co-ordinated by the manager of the fleet, and itself undertakes the management of a group of the company’s ships. Organization based on teams is thought to be appropriate for shipping enterprises (Korres and Thanopoulos, 2005: 109–110). Because it “reduces interfaces and waiting times, gives clear ownership and accountability of results”, its adoption is considered as a best practice in ship management (Fraunhofer CML & GL 2013: 13).

Norden has adopted a similar approach (Norden, 2014). The technical department of the company (which actually brings together technical management of the fleet, crewing, safety and environment, inspections and purchase, and newbuildings), consists of four vessel groups (Norden, 2017d). Each vessel group is in charge of the technical operation of the vessels, which means that members of the group hold the responsibility of managing all issues for their vessels, either themselves or by asking for the assistance of support functions of the department which they need (Theotokas, 2018). An approach based on team structure adopts for its organisation the Thenamaris (Ships Management), who operates a diversified fleet of more than 90 ships (Thenamaris, 2017).

Exhibit 3.5  Team structure.
Source: Theotokas (2018: Figure 6.5).
Geographical structuring is designed in light of the region in which the enterprise operates and is active, and is based on the logic of the concentration of all the activities associated with a region in one structure. The basic advantages of a geographical structure are better co-ordination of activities and scope for the decentralization of decisions. Nevertheless, its implementation precludes the possibility of making use of economies of scale, since it leads to the existence of many employees with the same duties in different geographical regions.

It is suggested for the organization of businesses which have activities at many geographical points, such as shipping enterprises, the central co-ordination of which is not always effective. Liner shipping companies mainly belong to this category, as they maintain extensive networks of agents in many ports all over the world. Enterprises with bulk shipping fleets of high specialization fall in the same category. By implementing this form of organization, they are able to have a better knowledge of the particular features of each market which they address, thus increasing their effectiveness. Oldendorff Carriers, for example, an operator specialized in transshipments, implements a structure similar to the geographical, as it can be seen in Table 3.1, where the different offices of the company and their responsibilities are presented. Commercial, operation and administration are the processes met in most of the offices' structures. Each structure, depending on the specific needs, size and resources, might adopt the functional, the matrix, the team structure, or a combination of them. Adopting a similar approach, Pacific Basin, who manages a fleet of over 200 handy-size and supramax bulk carriers, operates a network of 10 commercial offices and three technical/crewing offices around the world in order for its chartering and operations staff to be positioned close to customers and markets (Pacific Basin, 2017). Taking into account that large ship management companies have become international with established offices in the main maritime centres (Panayides, 2001), their organizational structure could be considered as geographical.
<table>
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<th>Branch</th>
<th>Commercial</th>
<th>Operations</th>
<th>Technical</th>
<th>Fleet Management</th>
<th>Research</th>
<th>Financial</th>
<th>Administration</th>
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Source: Based on data from Oldendorff (2017b)
3.4.6 Network structure

The network structure is implemented by companies which outsource many of their management processes to other enterprises in the same group or to external associates, and maintain a small-scale structure with a co-ordinating role. This form of organization provides the company with maximum flexibility and makes it possible for it to concentrate more effectively on the processes which it carries out itself or that it regards as crucial for its competitiveness. This, of course, is likely to lead to a reduction of control over the processes which it outsources to external associates. Network structure orients the company towards cost control by means of a search for effective options in terms of cost and towards the avoidance of overlapping in its internal operation (Lorange, 2005). Among the advantages of this structure are a reduction of cost and increased flexibility and innovation, while the disadvantages include difficulties in coordination and control, together with probable competition on the part of external associates who may extend their activities. A crucial factor for the effectiveness of the network structure is the IT-based linkage between the partners, which permits their control and co-ordination by the central structure. Golden Ocean, as already mentioned, outsources extensively operating a limited structure, which is linked with independent ship managers to whom the technical management of vessels is assigned (Golden Ocean, 2017).

3.4.7 Combination of forms

In the case of many shipping companies, there might be a combination of the above forms of organizational structure so as to respond to their individual characteristics, strategies, resources, and needs. Thus, they develop mixed forms of structuring, basic combinations of which are the following:

- the combination of structuring by functions and divisional structuring. This is implemented by enterprises which manage a diversified fleet. Depending on the strategic approach of the company, divisions may be based on type of vessels or on type of services provided. Rickmers Group, for example, operated two segments or divisions, one for Maritime Assets...
Ioannis Theotokas

(Rickmers, 2017a), which provided services related to financial and commercial management of vessels, and one for Maritime Services (Rickmers, 2017b), which provided technical and operational ship management for own and third-party vessels. In each division, services are provided by specialized companies. In a similar approach, Chinese Maritime Transport (CMT), a diversified shipping group, organizes in departments the finance, the general administration, the information technology and the personnel, and in divisions each one of the sectors to which is active, i.e. shipping, inland trucking, terminal & logistics and agency & travel, respectively (CMT, 2017);

- the combination of functional and team structuring. This is usually adopted by large enterprises. Within groups of core functions, such as technical, team structuring is followed. In the case of the rest of the line and staff departments, functional structuring is applied. For example, in case of Danaos, a company operating container vessels chartered by liner operators, the technical department of the company, whose aim is high vessel utilization, cost-effective efficiency, and the promotion of environmental awareness, consists of teams, with each team responsible for a certain number of vessels (Danaos, 2016);

- the combination of functional, divisional and geographical structuring. Large companies are likely to have offices in different maritime centres, each of which is capable of undertaking specific processes for one of the types of vessels which they manage. Large diversified groups, whose dry bulk activities form part of their activities, as for example Mitsui O.S.K. Lines (MOL, 2017), implement this approach.

3.5 Crewing issues

The workforce of ships, the crew, constitutes a special category of employees, for reasons which have to do with the nature of the work which they carry out. The working environment of a ship itself gives rise to conditions which differ significantly from the corresponding conditions on land. Furthermore, while in the case of the human resources of the offices, the labour market has geographical limits, in that of the crews, this does not apply, as the seamen’s labour market is global.

Technological developments in the design, building, and equipping of ships have significantly reduced the number of members of a crew required, but, at the same time, the working conditions for seafarers have intensified. In the last ten years in particular, with the introduction of a series of regulations concerning the operation of a vessel, the workload has increased considerably for seamen. Attention should be drawn particularly to the negative experience produced among seafarers by the fact that the burden of bureaucracy which they have to manage is particularly large, complex, and time-consuming (Danish Maritime Authority, 2013). The regulations seek to focus on the human factor and to regulate matters concerned with training and safety, but, since in their drafting, factors relating to the seamen’s workload are not taken into consideration to the necessary extent, they do not fully succeed in this objective.

At the same time, the search for low-cost seamen has led to the existence of multicultural crews, but attention has not always been given to the socialization of crew members, resulting in the creation of conditions of alienation. This, in conjunction with the introduction of regulations such as the International Ship and Port Facility Security Code (ISPS Code), which restricts seamen’s shore leave in ports, gives rise to conditions which could be compared to those of “house arrest” on land (Horck, 2005).

Many enterprises seek to exploit the advantages provided by communications technology, both in the effective management itself of the vessel, and in the satisfaction and cohesion of the crew. With the passage of time and the creation of the necessary technological conditions, the provision for those employed on the ship of conditions of unimpeded and constant
communication with the external environment will be the rule for well-organized shipping companies, given that one of the factors which contribute to the attraction and retention of crews is the possibility of communication with their families during the course of the voyage. As can be seen from recent research, a lack of proper communication with the family appears to be the most important reason for the abandonment of the seafarer’s profession (Papachristou et al., 2015).

The management of the vessels’ workforce is the responsibility of the crewing department. The task of the crewing department is the selection and staffing of ships with capable and qualified individuals, their training, and the planning of their career, as well as the resolution of any related issue.

The need for there to be a separate crewing department is due to the fact that, even in the case of small enterprises, the number of the crew and the special characteristics of the seafarers’ profession call for the presence of personnel in the offices who are concerned with the management of their labour issues. If in the offices of a shipping company which manages ten ships with 25–30 shore staff, its crews can number in excess of 280 seamen, including those onboard, as well as those on shore leave. The need for a separate department for crew management applies to those shipping companies that do not implement the strategy of outsourcing the crew management processes to external associates.

The staffing of the crewing department is based on former seafarers, that is, on individuals who have experience of working on a ship and are in a position to understand the seafarers’ attitudes and behaviours and to appreciate their needs.

Given that the crew of every ship is a team which lives and works at a great distance from the shipping company’s headquarters, the choice as to its composition has to be made in a way which ensures its cohesion and efficiency, as well as its ability to perform well and safely, both in normal and in emergency conditions. To safeguard this last characteristic becomes even more difficult in the case of ships which employ crews of differing nationalities. Several studies which focus on the management of cultural diversity, as well as on the safety management of shipping companies, reveal the importance of national culture and of other factors that lead to differentiation among the crew members (Havold, 2007; Progoulaki and Theotokas, 2016).

The world seafarer’s labour market is made up of individual markets, the existence of which makes possible a distinction between groups of seamen and the payment of differing remuneration to them (Leggate and McConville, 2002). For shipping companies to be able to exploit these differences, they must be in a position not only to identify the individual markets, but to attract and engage high-quality seamen from them. If those who take the decisions do not possess the knowledge and information necessary for this choice, and if, at the same time, the cost of their acquisition is great and in excess of the potential benefits, the outsourcing of the relevant activity to enterprises which possess the appropriate know-how is an attractive strategic option (Theotokas, 2018).

In light of the above, the management of crews may be carried out either by a special department within the enterprise or by a specialist subsidiary, or be outsourced in its entirety to third-party enterprises (ship management or crew agents). The choice is determined, inter alia, by the approach which is followed for the development of its ships’ human resources. (Papadimitriou et al., 2005)

3.6 Concluding remarks

Dry bulk shipping companies operate in a dynamic and changing environment. In order for them to respond to the demands to which this gives rise, it is necessary to maintain degrees of flexibility which make it possible for them to engage in the necessary adjustments. In spite of
the fact that as a whole they are active and operate competitively in the world markets, differentiating factors, such as size, strategies, the level of technology, or the culture, lead to different approaches to their organization and management.

It is precisely because of this characteristic that an analysis of the organizational and management phenomena of these enterprises should take into account the way these interact and define. In this direction, further research on the differentiating factors mentioned above and the way they affect the organization of dry bulk shipping companies, and create the need for specific adjustments to it, could contribute in the expansion of the research field. Furthermore, enrichment of existing literature with research focusing on approaches adopted by dry bulk shipping companies in various national contexts could offer better understanding of their organization.

Notes

1 Basic points in the analysis contained in this chapter are drawn from Theotokas I. (2018).
2 For the strategy of outsourcing activities in shipping see Panayides, (2001); Theotokas (2018).
3 For the systems theory, and the organizations as open systems, see Clegg and Dunkerley, (1999: 198–212).
4 This chart as well as those presented in Exhibits 3–7 are indicative of the way in which the structure they describe are developed. It should be noted that the charts don’t describe nor include the complete range of the departments of a shipping enterprise.

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