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**"The Importance of Procurement Department
of a Maritime Company and its Impact on
Board"**

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Abstract

This paper aims to present and highlight the crucial role of procurement department of shipping companies, analyzing its structure, importance and mode of operation. The method followed to complete the research is the review of relevant literature. According to the results the importance of this department for the shipping company is linked to many different parameters, as it is responsible for ensuring every means that will allow the safety and smooth conduct of the voyage. In addition, the head of the department must be extremely competent, as they must handle many different situations, communicate both with the crew and with suppliers and ports and know how to act in emergency situations.

Key words: Procurement Department, Spare parts, Budget planning, Spares Forwarding

Περίληψη

Η παρούσα μεταπτυχιακή διατριβή στοχεύει να παρουσιάσει και να αναδείξει τον κρίσιμο ρόλο του τμήματος προμηθειών των ναυτιλιακών εταιρειών, αναλύοντας τη δομή, τη σημασία και τον τρόπο λειτουργίας του. Η μέθοδος που ακολουθήθηκε για την ολοκλήρωση της έρευνας είναι η ανασκόπηση της σχετικής βιβλιογραφίας. Σύμφωνα με τα αποτελέσματα, η σημασία αυτού του τμήματος για τη ναυτιλιακή εταιρεία συνδέεται με πολλές διαφορετικές παραμέτρους, καθώς είναι υπεύθυνο για τη διασφάλιση κάθε μέσου που θα επιτρέψει την ασφάλεια και την ομαλή διεξαγωγή του ταξιδιού. Επιπλέον, ο επικεφαλής του τμήματος πρέπει να είναι εξαιρετικά ικανός, καθώς πρέπει να χειρίζεται πολλές διαφορετικές καταστάσεις, να επικοινωνεί τόσο με το πλήρωμα όσο και με τους προμηθευτές και τα λιμάνια και να γνωρίζει πώς να ενεργεί σε καταστάσεις έκτακτης ανάγκης.

Λέξεις κλειδιά: Τμήμα Προμηθειών, Ανταλλακτικά, Προγραμματισμός Προϋπολογισμού, Αποστολές ανταλλακτικών

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1.Introduction

The procurement department is an extremely important part of the operation of a shipping company, as it is responsible for a large chain of procedures that ensure the safe and successful operation and conduct of its activities.

In the past few years, the traditional functions of procurement departments, which were formerly limited to contracting products and services on demand, have seen major expansions in their scopes of responsibility.

There is a one-to-one relationship between the functions and duties of a company's contemporary procurement departments and the level of profitability and productivity achieved by the business. There is a direct correlation between the effectiveness of the procurement department's job and the amount of revenue and cash the business has.

The first stage in the procedure is to acquire the necessary goods and services, but this is just the beginning. Procurement departments of world-class companies are staffed by procurement professionals who are highly skilled at negotiating the best deal for the company, which is the product available with the highest quality for the lowest price, while also meeting the standards of the company, the expectations of the client and the public, and the regulations of the industry. The best deal for the company is the product available with the highest quality for the lowest price.

In addition to assisting the department in addressing compliance issues, meeting deadlines, and maintaining liquidity through the quick processing of payments, the proper software will be easy to understand and operate.

Activities such as purchasing planning, the formulation of standards, the conduct of research on suppliers, the choosing of vendors, price negotiation, financing, the ordering of goods, their receipt, and the management of inventory may be included in the process of procurement. The procedure can require input from a number of departments, such as the department of procurement, the department of finances, and so on and so forth.

Despite the fact that procurement and finance are each handled by a separate department inside a firm, according to the conventional organizational structure of a company, these departments do work closely together. Even if it accomplishes what needs to be done, this method of managing operations is not the most productive nor the most efficient. The two parts of a company's activities are unique from one another; yet, the link between them is highly intricate despite the fact that they are distinct from one

another. The procurement function and the finance function are both concerned with maximizing the use of the money that is available; however, the primary concentration of the finance function is on ensuring that a positive balance sheet is maintained at all times. It is absolutely necessary for the two departments to work together and coordinate their goals in order to produce the most successful and satisfying outcomes. Companies that foster an environment in which their various divisions can collaborate on projects as equals not only provide themselves a competitive advantage but also, in most cases, see increases in the effectiveness of their operations (Orosa, 2012).

This paper aims to present and highlight this important role, analyzing its structure, importance and mode of operation.

The method followed to complete the work is the review of relevant literature and its structure includes six chapters.

2.Methodology

The method used in this research is a review of relevant literature, which means that the chosen subject area is the focus of a search that is followed by an evaluation of the available written material in the form of a " review." The review provides documentation of the current state of knowledge regarding the subject or topic that is reviewed.

The following are the primary goals of a review of the relevant literature:

- 1)It provides an overview of the previous research in the field that you have selected to focus on.
- 2)It does so by producing a summary that is a synthesis of the information found in that literature.
- 3)The information that was obtained is analyzed in a critical manner by pointing out where there are gaps in current knowledge, demonstrating the limitations of various theories and points of view, as well as proposing new areas for research and evaluating contentious topics.
- 4)It provides an organized presentation of the previously published works.
review of relevant literature

3. Structure and organization of shipping companies

A shipping company can be understood as a network of components that are dependent upon one another and are connected to one another. Because it involves the management of units with high capital value that are dispersed in remote regions of the world, its administration is complicated because it is difficult to keep track of the day-to-day operations of these units because it is impossible to monitor their whereabouts (Frankel, 1982). An element of an organization's complexity can be attributed to its spatial dispersion if it "performs the same functions with the same division of labor and hierarchical arrangements at multiple places" (Hall, 1996). Bulk shipping firms manage ships that are identical in structure to one another but are distinct from one another. Additionally, these companies operate branches in various geographical areas, making them organizations that have a high degree of spatial dispersion (Theotokas, 2019).

At the same time, the offices of the corporation are divided into divisions based on whether they provide management for or assistance for the operation of the vessels. The performance of the ships is impacted not only by the physical factors that are there, but also by the actions and inactions of the crews who are on board the ships as well as those who work in the offices of the organization on land.

This suggests that there needs to be careful coordination and cooperation between all of the many departments, as well as between the ships themselves, in order to achieve the common objective. In addition, it is necessary to make an evaluation of the direct and indirect effects that particular decisions or actions brought about by one ship or department on the rest of the company's ships and departments will have on those ships and departments. This evaluation must take into account the effects that will be brought about by the ship or department that is under consideration. Within this framework, effective communication between the various departments and the ships, which are the sub-systems of the system in the case of a shipping enterprise, is a precondition for the effective functioning of the system as a whole as well as the achievement of the goals of each individual sub-system.

Standardization refers to the degree to which expectations in connection with the means and the end result of the organization's work are established, written down, and enforced to the various members of the organization. The degree to which power is concentrated at the highest levels of management as opposed to being distributed to lower levels indicates the degree to which decision-making is decentralized. The degree to which

expectations in connection with the means and the end result of the organization's activity are established, written down, and enforced to the members of the organization is an indication of the organization's level of complexity.

To begin with standardization, it is important to point out that the introduction of regulations and codes that deal with safety and the quality of services led to an increase in the degree of standardization of jobs carried out by the human resources on land and on vessels. This increase in standardization was caused by the introduction of regulations and codes that deal with safety and the quality of services. This trend 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. It appears that this trend has also had an effect on 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. In this regard, there is also a contribution provided by the available communication infrastructure that exists between the ships and the offices of a firm. This infrastructure allows for the exchange of information.

This might be horizontal (the number of departments in the organization), vertical (the levels of the hierarchical structure), or geographical (the location of the organization) (dispersion of activities and personnel). Businesses that deal in the transportation of dry products typically have quite high degrees of horizontal complexity. This is due, in part, to the size of the fleet that they are in charge of, as well as the extent to which they handle the entirety of their management processes internally and do not contract some of these functions out to third parties. In addition, this is due, in part, to the fact that they handle the entirety of their management processes internally.

Additionally, dry bulk transportation firms are organizations with low vertical complexity because there are often not many layers of hierarchy inside these companies. This is another reason why these companies are characterized by their low vertical complexity. On the other hand, the ships have a higher degree of vertical complexity since they are organizations that have many distinct levels of hierarchy. This is one of the reasons why the ships are so complicated. On the other hand, they feature a lower horizontal complexity. As a result, the organization of enterprises that deal in bulk shipping may be portrayed as a horizontal hierarchy, with each ship operating as a component of a vertical hierarchy. Shipping companies are systems that incorporate complicated organizations that carry out the same tasks, have the same division of labor, and maintain the same hierarchical levels in branches that operate in

many different locations. These shipping enterprises are also known as supply chains. One might think of this kind of dispersion in either a geographical or a spatial context (ships and offices). The size and diversity of the fleet that the company is responsible for managing both play a part in defining the geographic dispersion of the company's operations, which is determined in part by the size of the fleet that the company is responsible for managing. It is reasonable to anticipate that the company's geographical dispersion will increase proportionately with both the size of its fleet and the number of ships comprising that fleet.

There is a correlation between a shipping company's level of success and the existence of an organizational structure that allows for the organization's growth, utilization of the appropriate know-how, change, simplicity, attention on its goals, and cost management. The organizational framework of shipping businesses takes into account factors such as the interconnectedness and specialization of jobs, as well as the quest for the most efficient use of available resources. In addition, the size of the business, the breadth of its operations, the degree of difficulty posed by the operational environment, the nature of the service that the company offers, as exemplified by the vessels that it manages, the nature of its relationships with charterers, and the chartering strategies that it puts into practice are all aspects that are taken into account when determining the optimal organizational structure (Theotokas, 2019).

The company's organizational demands are one of the variables that are defined by the strategy, which in turn affects the choice of the structure for the company. The decision is impacted at several levels by the various alternative possibilities that are relevant to the strategy. In this context, the strategies for the acquisition and financing of ships, the investment strategy, the competitive strategy, the chartering strategy, the strategy for insourcing or outsourcing of processes, and the strategy for ships' crewing define the vertical, horizontal, and spatial complexity of dry bulk shipping companies, which is another way of saying their organizational structure.

An illustration of this would be the company's decision about its investment strategy: should it focus on the long-term sale of shipping services or on outcompeting the competition by selling and buying ships? (Hope and Boe, 1981). The first option primarily entails arranging investments and purchasing ships in order to provide transport services over an extended period of time, whereas the second option views ships as an asset with the goal of buying and selling ships on the markets. Both options are described further below. Companies that are active in the secondary market for ships

typically have staff members who are responsible for monitoring the market in order to either buy or sell ships.

In a functional structure, operations are organized into departments according to the operational specialization they require, and these departments make up the organization. This is applicable to businesses that offer a limited selection of services that do not develop throughout the course of time. It makes it possible to have centralized control, it leads to a clear description of competencies, and it makes it easier to concentrate on operational issues, which in turn supports the development of specialization among the employees. On the other hand, it does have some flaws, and these flaws are directly connected to the fact that the personnel are so heavily focused on their areas of specialization. This may be to the detriment of the overall goals of the company, as it can lead to difficulties in horizontal communication and make it difficult to adapt to shifting conditions in the business world.

The application of a functional structure typically results in each process being organized into its own separate department in large corporations. Similarly, to other types of businesses, shipping companies have traditionally been organized using the functional structure. The majority of dry bulk shipping businesses, particularly those operating fleets of medium and small size, use the functional structure for their organization. This is especially true for enterprises that operate fleets of smaller size (Theotokas, 2019).

Structures that are based on the division of activities, also known as divisional structuring by product or service, or by strategic business units, organize organization's activities and processes according to the flow of its outputs. This type of structure is known as a structure by division of activity (Daft, 2010). In the context of the shipping sector, it is implemented by businesses that are responsible for the management of diverse fleets comprising a significant number of ships. Each group comprises a separate division within the fleet, which is organized into groups according to the specialized functions that the vessels perform. Within each division, those processes that 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. For example, technical and operational management.

The ability of divisional structuring to accommodate rapid changes in an unstable environment is one of its many benefits. Other advantages include the flexibility with

which each division can organize its operations, the coordination of various processes within each division, and the growth of personnel responsible for the overall supervision of the company's processes.

The elimination of economies of scale in the operational departments leads to an increase in the cost of implementation, which is one of the disadvantages of divisional structures. Another disadvantage is the increased likelihood of a conflict between the divisions over claims on business resources, and a third disadvantage is the addition of a further level of management.

Only companies operating very large fleets consisting of many different types of vessels and a large number of individual ships can be said to have achieved full application of this practice in the maritime industry.

The matrix organizational form incorporates the grouping of activities on the basis of process and activity and simultaneously combines vertical and horizontal lines of power. This form of organization is also known as a matrix structure. On the vertical axes are the numerous operations that are carried out by the organization, and on the horizontal axes are the various areas of activity or the many jobs that are carried out by the business (Carrell et al., 1997).

The matrix structure improves flexibility and makes it possible to adapt to any quick changes in the conditions of an enterprise's working environment. It enables the most effective utilization of specialized individuals and equipment, motivation, flexibility, the stimulation of collaboration, staff development, innovation, as well as the production and dissemination of knowledge. Obviously, it has certain drawbacks, the most significant of which are the existence of a system that has duplicated power and duty, as well as procedures that are likely to be time-consuming when it comes to the making of decisions and the settlement of disputes.

This is the kind of departmentalization that works well for dry bulk shipping companies, as these businesses operate in an environment that is both dynamic and uncertain. Because it needs special decisions on technical fields that require a high level of specialization, such as technical management or the scheduling of movements of a ship, but also a high degree of unification of all of these decisions, a shipping company needs an organizational structure that is simultaneously centralizing and decentralizing. Since of this, the function of a matrix organization is seen as significant in the shipping industry because it makes it possible to coordinate specialties on two different levels: the process level, and the activity level (Frankel, 1982). In addition to this,

departmentalization in the form of a matrix orients the entire organization toward the vessel to a greater extent and promotes decentralization by providing its workers with an increased number of decision-making responsibilities (Downard, 1990). A number of factors worked in favor of the introduction of matrix structure, including the diversification of the fleets that they are responsible for managing and the requirement for higher efficiency in order to boost competitiveness (Theotokas, 2019).

Interdepartmental teams serve as the structural foundation for this particular style. These teams are comprised of employees coming from a variety of departments, each of which has their own unique area of expertise. This is one factor that contributes to the creation of new knowledge and the dissemination of that knowledge, as well as to the efficient coordination of activities occurring within each team.

Because it maintains restrictions on both the hierarchy and the borders of the operational divisions, team structuring is considered to be a component of a flexible structure. It is believed that this will make organizations more adaptable, will improve the coordination between the functional specialties, and will contribute to the appropriate use of human resources. Nevertheless, it is likely to result in an increase in the complexity of the structure of the business, particularly if that organization consists of a large number of teams of a relatively small size. As a consequence, challenges may arise with regard to the exercise of control. Because of this, one of the most important factors that will determine the success of the teams is their ability to work together (Mullern, 2000).

Because of an organization's team structure, it is able to acquire a horizontal orientation, which results in an increase in the organization's flexibility. Simultaneously, decentralization in decision-making and the specialization of personnel who are responsible for the overall supervision of the management task are made easier. In order for the ships to function in an efficient manner, it is essential that the staff who are based on land are focused on the end goal of providing service to the vessels. The manager of the fleet is responsible for coordinating the activities of each team, and each team is responsible for managing a subset of the company's vessels. It is generally accepted that businesses involved in shipping would benefit from an organization based on teams. The implementation of this strategy is regarded as a best practice in ship management due to the fact that it "reduces interfaces and waiting times, providing unambiguous ownership and accountability of results" (Fraunhofer CML & GL 2013).

Geographical structuring is created with consideration given to the territory in which the organization operates and is active. It is based on the logic of consolidating all of the activities that are linked with a region into a single structure and is developed with that region in mind. Better activity coordination and more room for decentralized decision-making are two of the primary benefits that stem from having a structure that is organized geographically. However, the implementation of this plan makes it impossible to take use of economies of scale because it results in a large number of employees performing the same tasks in a variety of geographic locations. This makes taking advantage of economies of scale impossible (Theotokas, 2019).

It is advised for the organization of businesses that have activity at numerous geographical sites, such as shipping enterprises, for which effective central coordination is not always possible. One example of this type of business is one that has activities all over the world. The majority of businesses that fall under this category are liner shipping corporations because of the enormous agent networks that they keep up and running in numerous ports across the globe. Companies that transport large goods and have shipping fleets that are highly specialized are included in the same category. They are able to increase their efficiency thanks to the use of this kind of organization, which enables them to have a greater knowledge of the special characteristics of each market that they address. When one takes into account the fact that large ship management companies have become international in scope and have opened offices in the most important maritime centers, one could argue that their organizational structure can be characterized as having a geographical orientation (Theotokas, 2019).

4. Identification of the procurement department

4.1 Role

Traditional functions in procurement departments, which were confined to contracting products and services on demand, have expanded significantly in recent years.

Both a company's profitability and its level of productivity are directly correlated to the roles and responsibilities of its modern procurement departments. The efficiency with which the procurement department works directly affects the organization's revenue and liquidity.

Purchasing goods and services is just the first step in the process. Procurement departments of world-class companies are staffed by procurement professionals who are highly skilled at negotiating the best deal for the company, which is the product available with the highest quality for the lowest price, while also meeting the standards of the company, the expectations of the client and the public, and the regulations of the industry.

The appropriate software will be simple to comprehend and operate, and it will assist the department in resolving compliance issues, meeting deadlines, and maintaining liquidity through the prompt processing of payments.

The purchasing department is managed by the purchasing manager or the procurement manager. These highly educated experts are in charge of formulating efficient procurement strategies, locating advantageous deals and suppliers, and managing supply chains from the point of initial requisition all the way through to the payment of invoices. They assess the value of raw materials, products, and services before purchasing them, all while developing strategies to reduce expenses and achieve organizational goals. The majority of job descriptions for procurement directors need candidates to have experience in chain management and negotiating (Lu et al. 2010).

To obtain the necessary buy-in from firm stakeholders, department heads, and executives in order to obtain the resources and investment that are appropriate, it is important to convey the significance of strategic sourcing and procurement, collaborate with the many stakeholders to develop targets for sourcing that are practical, cost effective, and strategic., to perform an analysis, to make a choice, and then successfully install all-encompassing procurement software.

Conduct research and make selections regarding the vendors with which the company will do business is important. This comprises conducting an analysis of the product's quality, cost, and delivery time, followed by a determination of which suppliers offer the best fit for the requirements of the firm. The evaluation of suppliers is an ongoing project that is kept up to date with each new contract and shipment. This helps to ensure that key performance indicators are met and that products and services continue to conform to the necessary criteria and deadlines. Procurement managers attend trade events, conduct interviews with vendors, and go to supply facilities and distribution hubs as part of their efforts to maintain accurate and comprehensive evaluations.

Before beginning negotiations on terms and prices, it is important to perform an in-depth analysis of the financial reports and pricing proposals provided by a number of reliable suppliers and to make comparisons between these documents.

Training employees is also important, so that they are aware of the requirements for product quality, how to determine when items are unacceptable, and what measures to take when quality standards are not reached. Other actions of great importance are:

Monitoring contracts to check that the supplier is living up to expectations and that bills are being approved and paid on schedule (Cousin et al. 2006).

Making any necessary modifications or amendments to contracts that are already in place.

Maintain correct inventory records, including information on price, performance, and delivery, and keep careful track of all items that have been ordered as well as those that have been received.

Ensure responsible procurement procedures fulfill organizational objectives and compliance needs.

It is necessary for the department to have the appropriate tools in order for it to perform its duties effectively. One of these tools is procurement software, which should provide the required visibility of the end-to-end supply chain, robust reporting features, three-way matching, and comprehensive data analysis.

The primary responsibility of purchasing clerks is to prepare purchasing orders for their employers. They examine the requisitions and buy orders to determine whether or not the orders contain sufficient amounts of the goods, and if not, they make the appropriate adjustments. They are responsible for handling all enquiries from customers and suppliers regarding orders, status, revisions, payments on invoices, and cancellations.

Skills in clerical work, mathematics, and providing excellent service to customers are required for this position. A bachelor's degree in business is typically one of the criteria for a position such as this one (Lu et al. 2010).

A procurement manager has to:

Produce purchase orders and then forward them to the appropriate suppliers.

Monitor the orders and check to see if there is a enough supply of the product.

Adjust the orders as necessary to reflect the required changes.

Prepare and maintain purchase reports, records, and updated pricing lists.

Maintain continuous communication with your vendors to build and cultivate relationships that are advantageous to both parties.

Keep an eye on the delivery timeframes, and let someone know if there are any problems with the product or the delivery.

Keep an eye on the current status of the orders and contracts.

Find out when products have been damaged to the point where they are unusable.

Deal with deliveries that contain short or over-ordered quantities of product, things that were not received, and items that were damaged.

Make certain that the company's guidelines are always followed with regard to the inventory of products

Assist in Purchasing and Administrative Matters

(Biedron; 2022)

A procurement manager is the employee of an organization who is in charge of locating suppliers of goods and services for that organization. This position is also known as a purchasing manager in some organizations.

In major companies, the person in charge of procurement oversees a group that includes procurement agents and specialists. In large companies, the role of procurement manager typically reports to a chief procurement officer (CPO). On the other hand, in small and medium-sized businesses, the procurement manager is frequently a department unto themselves. Regardless of the company's size, procurement teams are required to maintain strong collaboration with the departments of finance, operations, and legal affairs.

It is the responsibility of a procurement manager to ensure that their company obtains the items and services that will be of the most assistance to them in achieving their

objectives. In most cases, this entails locating partner suppliers who offer competitive prices without sacrificing product quality. In addition to this, it is the responsibility of the procurement manager to investigate any previous purchases that the organization has made.

Over the course of the past few years, the role that the department of procurement plays has been shifting and growing. Historically, the primary focus of the position was merely the acquisition of commodities to satisfy internal requirements. On the other hand, a rising number of businesses are beginning to acknowledge the insight and value that procurement managers possess. It should not come as a surprise considering their capacity to cut costs, improve outcomes, and identify beneficial collaborations.

Internal purchasing department supervisors are also getting more specialized in recent years. They are now able to assume increasingly complicated and strategic responsibilities in many different businesses thanks to new technology. They are gaining more authority to evaluate how a company does business, identify potential issues, and make recommendations for how to address such issues.

As a direct result of this change, the responsibilities of a procurement manager have grown. In a similar vein, the number of criteria they take into account when choosing a provider has also increased (Lu et al. 2010).

4.2 Procurement manager responsibilities

Research on potential solutions and products

Control of stocks and supplies

Procurement process optimization

RFP management

ROI analysis

Evaluation and selection of the various suppliers

Management of both risks and compliance

Contract negotiation

Data analysis

Important factors to consider before purchasing from a vendor

Pricing

Quality

Product characteristics and operational capabilities

Delivery timeline

Expertise and experience

Values held by the company, such as inclusivity and responsibility to the environment

Customer experience

Capability of expanding with the needs of the business

Solving difficulties that procurement experts are currently experiencing

(Cousin et al. 2006)

In order for procurement managers to be successful, they need to cooperate with employees from every department. Unfortunately, it can be difficult to obtain buy-in from the business when there is a lack of clarity or doubt regarding the function that procurement plays.

Any purchase that is made outside of the procurement process is considered rogue spend. This type of spending is also known as dark purchasing, invisible spend, tail spend, unmanaged spend, or maverick spend. A study that was conducted by Hackett Group in 2016 found that off-contract or rogue spending accounts for almost 29 percent of indirect spending. These products are difficult to account for and put the company at jeopardy of failing to do so.

In the long run, including stakeholders in the problem-solving process increases trust and credibility. Therefore, it is prudent to incorporate their feedback into the research for the procurement, the beginning of the project, and the evaluation of the proposal.

Due to a lack of technology, the process has become quite time intensive. Even in companies where digital transformation projects are broadly supported, the procurement department often seems to be behind the curve when it comes to adopting new technology (Lu et al. 2010).

Despite recognizing digital technologies, their impact, and the imminent uses for them, it seems that only a small number of organizations are progressing at the rate that their chief executive officers consider to be necessary for achieving their overall goals. In point of fact, the level of influence has decreased across the majority of domains, and it is unlikely that new technologies will be applied in significant ways.

In spite of the fact that a significant portion of a procurement manager's duties involve the procurement of software and information technology for use by other departments, this task may still involve a significant amount of manual labor.

The drawn-out nature of the procurement process is a frequent source of annoyance for both the procurement managers and the internal stakeholders involved. The majority of the time, procurement projects are initiated as a response to an ongoing issue that prevents the company from accomplishing its objectives. In light of the gravity of the situation, it stands to reason that sluggishness and inefficiency are to be avoided at all costs.. Common causes of delays include, for instance, drawn-out research on requirements, ineffective vendor communication, a lack of participation in proposal review, manual scoring, or bottlenecks in the process of contract negotiation.

Many of these problems can be solved by technological means. In the same breath, it enables improved insights, workflows, RFP automation, and transparency. In addition, the valuable data produced by a digital process can be analyzed in order to identify potential areas for improvement (Cousin et al. 2006).

The level of pressure that is placed on procurement managers rises as more and more firms realize the value that can be delivered by the procurement department. It should come as no surprise that strategic sourcing has becoming increasingly popular as a means of helping organizations address this issue. The selection of long-term partners rather than transactional vendors is the primary focus of this business technique. Relationships with vendors that are longer and more productive lead to fewer procurement projects, which in turn leads to reduced costs (Cousin et al. 2006).

Choosing the best possible vendor is the first step in strategic sourcing. Requests for proposals (RFPs) frequently assess the qualifications, experience, and capabilities of multiple vendors who offer the same services. After that, the procurement manager evaluates the results and assigns scores to them. In an ideal situation, they would employ weighted scoring to make certain that the company's most important priorities are met. Again, if the scoring is done manually, it can be a time-consuming process. Weighted scoring also falls into this category.

The procurement team's responsibilities do not cease once they have chosen the most suitable vendor. In point of fact, managing relationships with vendors is a talent that is both undervalued and very valuable. A procurement manager is responsible for managing and evaluating the performance of each vendor on an ongoing basis to ensure that the partnership continues to be beneficial to all parties involved. Fortunately, vital vendor information can be easily organized and centralized with the assistance of vendor profiles, making reference and tracking much simpler (Cousin et al. 2006).

In order to accomplish their objectives, procurement managers may make use of a variety of instruments, procedures, and resources.

Bringing about digital transformation in procurement is certainly possible because to the abundance of technology that is currently available:

RFP management software

Software for managing stock inventories

ERP software stands for enterprise resource planning (ERP)

Contract and vendor management platforms

(RFP, 2022)

Procurement Department has also to collaborate with the other Departments of the ship which are:

General Management

The nerve center of the shipping company, where all operational and strategic decisions are made. responsibilities include providing direction, coordinating activities, and working closely with each of the company's departments. It establishes the terms under which the Company interacts with the larger shipping area (flag state, banks, insurance organizations, etc.). It is run by a seasoned executive, who may also be the ship-owner himself, and is surrounded by a staff that has an in-depth knowledge of the maritime industry.

Operations department

It is concerned with the Company's ships running smoothly and effectively in accordance with their contractual duties toward the Charterers in an effort to meet those obligations. An experienced officer, typically the first master E.N., is in charge of overseeing the ships and ensuring their safety.

Technical department

It is its job to ensure that the ships are running well and receiving the necessary maintenance in order for them to remain in a state of complete readiness at all times. It

is in charge of shipbuilding, tanking, and maintenance for the Company's fleet of vessels.

It is typically overseen by a shipbuilder or First Class Engineer with a great deal of expertise, known as the Chief Engineer, and it is manned by shipbuilders, technicians, and engineers with a variety of specializations.

Chartering and brokering department

It is concerned with the process of searching for prices for ships on the international freight market. It employs executives who are experts in charter matters, such as E.N. captains, as well as other personnel. However, there are also major maritime offices known as charter brokerage offices that focus solely on the process of chartering ships on behalf of a variety of different businesses. These offices deal exclusively with the chartering of ships. They have a lot of shipping businesses working with them.

Division of Quality Assurance and Risk Management

This department was established in the middle of the 1990s so that the company could comply with the quality norms and procedures outlined in the International Safety Management Code published by the International Maritime Organization (IMO) (ISM Code). It is mostly staffed by individuals who have acquired knowledge from participating in all of the Company's activities, such as seasoned masters and engineers E.N.

Insurance and claims department

It handles the processing of all insurance-related cases, as well as the insurance coverage for each ship and its passengers, and it deals with the logistics of the coverage (claims from and to third parties). In addition to masters E.N., its personnel is comprised of attorneys who are experts in subjects pertaining to maritime law and marine insurance.

Legal department

The majority of these departments can be found in large shipping firms and are staffed by attorneys with expertise in maritime law issues.

Crew management or Marine department

It is a significant part of his responsibilities to choose the commanders and crews that will man the ships. It is nearly always led by a captain E.N., who is typically an old executive of the firm and has experience in the management of human resources. This individual is referred to as the Chief Captain of the Company, which is a frequent title for him.

Secretariat - accounting department

Correspondence and communication with ships, as well as with other organizations and businesses, are handled by this department. The accounting department is in charge of all of the company's financial dealings, including those involving its offices, ships, and the people who work on them.

The human resources that are employed in each of these sectors, which were introduced in passing earlier, constitute the most vital component. However, the size of the staffing of the departments of these varies from company to company and is dependent on the following factors (Guilmos, 2006): the policy of the ship-owners regarding the degree of control they wish they have, the manner in which the various procedures are carried out in each department, the nature of the computer system with which it is equipped each shipping office, the degree of active management sought in the daily execution of maritime duties, the size of the shipping office.

Because of this, the requirements for human resources that each shipping company must meet are unique to the rules that they choose to implement in their business. For instance, some shipping companies run their businesses first on the principle of cash

management, without even having their collections monitored, and secondly on the assumption that they are aware of their primary responsibilities, despite the absence of information that is pertinent to the situation.

A minority of shipping businesses have implemented procedures for the management of spare components, while others conduct inventory checks on board their vessels. As a consequence of this, the kind of information that is gathered differs from business to business depending on the operational policies that are chosen by those businesses. In spite of this, the provision of certain information still necessitates the utilization of human resources in order to gather and monitor it or to exploit it, and this is the case even when a significant portion of the work is performed by electronic ones computers. It has been found that even while the CEOs of shipping businesses do not deal with concerns pertaining to non-essentials, they may nevertheless deal with many of the same issues as their lower-level counterparts. The number of people that can be accommodated by a single shipment is reliant not just on their level of productivity but also on the manner in which the work is distributed. Quite a few shipping companies have voiced their frustration that it is difficult to locate qualified personnel. Because there is a low workload per person, particularly in accounts that have a large division of labour and particularly in the early stages of development of a shipping company, a number of the shipping companies' complaints center on their personnel accounting. This is because there is a low workload per person. Despite this, years of experience have shown that there are executives working for Greek shipping businesses that have a profound understanding of the specialized tasks that are associated with their positions. In Greek shipping enterprises, there is also a propensity toward workers to progressively increase with time. This is a trend that has been observed.

Obviously, human resources can play a significant part in the successful and effective operation of a shipping company; however, the organizational structure of the company is just as important. This is due to the fact that the organizational structure of a company is frequently to blame, at least in part, for issues relating to the flow of information and forms, poor cooperation between departments, and cross-departmental responsibilities (Guilmos, 2006). Structural concerns are mostly associated with the spatial planning of the departments, where it is possible for some departments to be located in a remote location in comparison to sources of information and specialists on whom they are required to rely. For instance, if the Operations Department and the Charter Department are located in different geographic regions, then it is impossible for these two

departments to engage in daily communication and information sharing with one another. The repercussion of this is that these portions frequently wind up being completely separate from one another. This may also appear to be a problem with the flow of power. They pick a few organizations to work with in order to minimize the number of independent divisions by forming domains and to apply sectoral rather than departmental responsibilities in an effort to either prevent or deal with difficulties of this nature. It should also be stressed that in order for the human resources to function to the best of their ability and for the employee to make consistent progress in the performance of his work responsibilities, it is important to undertake the control exercise. In this context, we might note the following three forms of control (Guillemos, 2006): preventative control, parallel control and repressive control.

The preventative control, which is the form of control that prevents the occurrence of the foreseen issues, is the most desirable sort of control; nevertheless, it is also the type of control that is the most difficult to implement, which is why it is not frequently seen in commercial settings. This check comes before the actual one that measures energy, and it looks forward to what may occur in the future. Therefore, "preventive management" is perhaps the most appropriate term to use when referring to this method of control. This indicates that the action taken by the administration occurred prior to the occurrence of an issue. It is important to note that the aforementioned style of control involves not only timely and precise information, but also creativity, which is a quality that is sometimes lacking and can make it challenging to actually exist.

Control is said to be concurrent when it occurs while an action is already taking place and, of course, any faults can be rectified in a reasonably timely manner. The examination is carried out in this location under the direction and supervision of the administration. Direct supervision is carried out on board the vessel by traveling shipping professionals such as Chief Engineers, Chief Captains, and Managers of Ships in addition to the Captain, of course.

The repressive control, which is simultaneously the most common and the one that occurs in conjunction with every action, is the one that is observed. Because the correction is applied after any damage has already been done, this particular method of control is not as effective as other forms. However, in the majority of instances involving this form of control, he is also the only one who exists. Its efficiency as a programming tool can thus be evaluated using this method, taking into account factors such as the magnitude of the differences between "standard" and "real" return rates. It

is also checked to see if there is a way to enhance the motivation of executives by knowing which targets have not been accomplished, how much progress has been made, and possibly why. When it comes to human resources, managers never achieve their goals directly, but rather through the efforts of specific individuals. This is because managers depend on their subordinates to accomplish the objectives of their departments. The professional acts of a manager's subordinates are required to be, frequently or consistently, as he intends or signals that they should be. The work done by subordinates is inspected and critiqued on a daily basis right where it is being done. In addition, managers are responsible for valuing their subordinates' work and doing so in a formal manner using techniques such as the 'people assessment' method. It goes without saying that every favourable evaluation needs to be accompanied by the appropriate reward. When combined with a number of other criteria (such as efficient financial management, accurate information, and so on), human resources that are diligent, knowledgeable, and honourable can propel a company to its greatest levels of success (Tomazos, 2016).

4.3 Duties

The shipping industry is famously known for being cyclical. In recent years, investors have seen tremendous profits as a result of:

- Shifts in sourcing strategies, in particular those that involve low-cost countries, are driving up demand for shipping capacity in every region of the world.
- Charter rates for certain types of freight are increasing.
- The number of newly built vessels has reached an all-time high, with Chinese yards now accounting for forty percent of the total order book worldwide.
- Tanker day rates have reached all-time highs, setting a new benchmark for profitability.

But there are already difficulties on the horizon.

- As a result of the increased demand for raw materials and spare parts, there is a greater strain being placed on resources, which in turn is leading to an increase in both costs and the amount of time it takes to supply products.
- Some shipping prices are decreasing as a direct result of increased competition from new market entrants, particularly from nations with low production costs.

- Environmental pressures are increasing, which adds price premiums to spare parts that need to meet green requirements, new regulations from the IMO are forcing companies to use more refined (and more expensive) distilled fuels instead of cheaper bunker oil in certain geographies; it is difficult to find, train, and retain enough people to crew the rising number of vessels; competition for experienced workers is fierce; and finally, it is difficult to find enough people to crew the increasing number of vessels.

These opportunities and challenges, regardless of whether one is a ship owner or management, run a cruise line or a repair yard, all put the requirement for company agility, adaptability, and operational efficiency at the forefront of the minds of the CEO and CFO (Cousin et al. 2006).

Because of the requirement to both minimize expenses and maximize charter income, every aspect of the operations of a shipping company is subject to pressure. This includes both the employees and the management of the organization. Today's purchasing organizations are able to not only help drive savings to the bottom line but also enable companies to operate more efficiently and flexibly so that they can maximize revenue opportunities thanks to the innovative tools that automate the purchasing process and generate business data to give greater management visibility and business planning insight. These tools are allowing today's purchasing organizations to do both of these things. All of this is made possible because of developments in technology that have led to the production of these tools.

Shipping firms are now in a position to embrace and make the most of the purchasing experience and talent that already exists within their organizations as a result of the widespread availability of e-commerce services, which are readily available today. Because of this, it is much simpler for them to adjust to the always evolving dynamics of the shipping sector. The extent to which businesses are able to make the most of this opportunity will determine the degree of competitive advantage that they enjoy.

This research investigates not just the goals of purchasing but also the challenges that buyers confront when interacting with both internal and external settings.

Regardless of the size or shape of the shipping company, the purchasing departments are directed toward three distinct goals, which are as follows:

- To maintain quality and comply with applicable requirements
- To keep vessels functioning

The demand for speed is present across the entirety of the purchasing operations that are carried out in support of these strategic goals.

Similar difficulties can be encountered in purchasing departments:

Businesses who are able to free themselves from the disorganization that comes with using paper-based and manual purchase methods are laying a solid groundwork for their success in the years to come. E-commerce technologies are being utilized by the majority of the world's leading shipping companies today. These technologies help these companies save time and money, generate valuable business data, and free up the time of their buyers, which enables these buyers to create long-term value throughout the supply chain (Cousin et al. 2006).

Purchasing excellence is already being taken to higher levels by pioneers, who are also addressing the need to further integrate the role of purchasing into the physical and financial supply chain. This is in addition to the fact that pioneers have already surpassed this point. They are able to adapt more effectively to difficulties posed by the global market and capitalize on chances to maximize revenue and profits as a result of their increased operational efficiency and flexibility as a result of taking these actions. Companies who have not yet begun this journey run the danger of falling behind their competitors as they continue to struggle with the everyday chaos that comes with manual processes and the associated lack of control and visibility.

Internal inefficiencies, which are created by processes that are paper-based and manual, add to the administrative burden of buying teams and restrict the amount of time that could be spent on more strategic buying activities.

Management control is made more difficult and improvement potential are obscured when there is a lack of visibility into the status of requisitions and orders, as well as the performance of suppliers.

Shipping firms have been able to accomplish the following benefits thanks to the use of e-commerce applications and services:

- Cut down the amount of time it takes to make purchases by more than 30 percent; this is made possible thanks to increased sourcing skills and an increase in the number of competitive quotes.
- Increase the number of vessels that are managed without adding more purchasing staff
- Reduce expenses by getting rid of or redeploying administrative staff and cutting costs for traditional forms of communication like faxing and emailing

- Expand the number of vessels that are managed without adding more purchasing staff
- Decrease the amount of work that needs to be done administratively and free up 15–20 percent of a buyer's time so that they can:
 - Analyze and consolidate spending
 - Identify and evaluate new suppliers
 - Negotiate improved contract pricing
 - Manage better compliance with contracts
- Expand the number of vessels managed without adding more purchasing staff
- Cut costs by eliminating or redeploying administrative staff

Despite the fact that each company has its own distinctive approach to doing things, the purchasing departments of all corporations strive to accomplish the exact same goals:

- To keep vessels operational by ensuring that spare parts are delivered to them in a timely manner in order to, at best, avoid expensive air freight charges as spare parts "chase" the vessels from port to port, or, at worst, reduce the risk of off-hire days
- To reduce the overall cost of ownership of the vessels in order to save the company money.
- To maintain quality while also conforming to many regulations for health and safety, the environment, and a variety of other subjects

Speed is the single most significant consideration for this particular segment of clients across all of these other goals.

This need for speed applies to every step of the purchasing process, including the amount of time it takes to get a requisition from the ship to a buyer, the amount of time it takes for the buyer to begin working on it, the amount of time it takes for the buyer to send out RFQs to suppliers, the amount of time it takes for suppliers to respond, the amount of time it takes for the buyer to raise a purchase order, and the amount of time it takes for the goods to be delivered (Humphreys et al. 1998).

The lengthy lead times that are required for the delivery of spare parts from suppliers to ships are one of the most infuriating aspects of the shipping industry for enterprises who operate in this industry. This is due to a number of factors, some of which include a lack of available spare parts (since suppliers only seldom have large volumes of stock on hand) and even a level of complacency on the part of some suppliers, particularly in

markets with low levels of rivalry. These difficulties persist and are relevant for ship owners and management in every region of the world.

Manual requisitions meant that data had to be re-keyed into purchasing systems, which increased the likelihood of error as well as the possibility of duplicate entries. There was an excessive amount of flying paper, an excessive amount of errors that needed to be investigated and corrected, little or no visibility into the status of requisitions, an absence of traceability, and poor supplier records; to put it another way, there was an excessive amount of time wasted on paper-based administrative tasks rather than buying.

This circumstance was unbearable for many different businesses

What they required was a system that would:

- Ensure that they received accurate information as soon as possible from ships to suppliers
- Automate operations to get rid of paper and human processing in order to boost efficiency and cut down on errors
- Assist purchasers in gaining a better grasp on the procedures involved by providing more visibility into the requisition-to-delivery process

Manual requisitions that contain illegible handwriting or information that is missing, especially those that are sent by fax

Inaccurate or insufficient product specs, which led to questions from vendors once they got the perplexing RFQs.

Large numbers of requisitions that only contain a few line items, thereby increasing the number of buying "events" that take place and frequently missing the opportunity to bundle deliveries together in order to save on freight charges or causing the company to miss out on better prices as a result of better economies of scale.

The benefits that the companies derive from utilizing e-commerce services to support their purchasing activities are quite similar to one another in nature, and can be broken down into the following four categories:

- enhancing job satisfaction
- lowering costs
- improving quality
- reducing the amount of time wasted

Shipping businesses have been able to speed up their purchasing operations and cut cycle times by switching from sending RFQs and purchase orders manually by fax or email to using an automated system to deliver these documents electronically instead. In addition, businesses have reported seeing benefits from simplified operations, including the elimination of the need to double-handle transactions in order to uncover the errors that were invariably caused by human processing in the past (Shipserv, 2021). Over the course of time, nearly every facet of the shipping sector has seen significant transformation (Humphreys et al. 1998).

This is one of the only industries that runs economies and requires consistent monitoring and improvisation in order to meet the ever-increasing demands. From regulations monitoring sulphur content to the procurement and management of spares, this industry is unique in its requirements.

Spares are a significant part of the shipping industry's commercial landscape, and this sector is developing at a rate that is comparable to that of an exponential, which is leading to market saturation and an increase in the level of competition faced by existing merchants or manufacturing firms.

The following is a list of the several procedures that are utilized onboard ships for the purpose of identifying spare parts:

1. The number of the component
2. Drawing number
3. The number of the item or the number of the position
4. Material number
5. Particulars, Description
6. IMPA catalogue
7. Article number

This is a broad term that can be referred to by a variety of names but always refers to the same thing.

The majority of shipping companies operating in the modern era have begun implementing a new strategy for the procurement of spares. This strategy involves the creation of company-specific numbers that can be used to identify a specific spare. For a given shipping company, any spare with the same article number will function in the same manner (Humphreys et al. 1998).

When seen from a more macro perspective, an article number is nothing more than a material number that may be used by traders and transportation businesses to establish their own databases. This number has zero bearing on any other association whatsoever; it is completely irrelevant.

The process of providing spare parts to a ship involves a few phases that are nearly same anywhere in the world.

As soon as the ship issues a requisition mentioning the requirement of a specific spare or a consumable, the respective company post confirming budget for that ship determines whether or not the spare will be supplied in the next store's supply, unless the spare in question is either a critical spare or a consumable, or any spare that is required on breakdown for immediate replacement.

The requisition is made by the crew of the ship using the identification techniques described earlier in the sentence.

Following the confirmation of the requisition, the inquiry is distributed to multiple dealers, manufacturers, makers, or local vendors, depending on the type of spare that is being sought (Orosa, 2012).

In most cases, placing an order for a consumable through a local vendor is preferable; this topic will be covered more in section 5.

After checking the bids from the vendors, we will compare them based on the cost and the lead time (time required for the trader or manufacturer to get it in their warehouse if the balance is zero).

Traders and manufacturers often preserve a minimum balance of every spare in order to ensure rapid delivery; only when the demand is more than the existing stock of the supplier will they declare a lead time for the balance spares.

They submit an order confirmation indicating the same or updated number of spares they wish to order as soon as the particular supplier satisfies the requirements of the company in terms of cost and lead time.

After the amount has been credited to the supplier's account, the purchase order, along with the airbill number and any relevant details, is forwarded to the vendor.

Depending on the nature of the relationship that has existed between the two parties in the past, many businesses negotiate postpaid or prepaid terms with their suppliers.

The costs associated with the shipment of the spares, which include the cost of the spare itself, any applicable taxes based on the laws of both the nation of the supplier and the country of the receiver, and the transportation fees, are now being processed.

When taking into consideration the rising number of fleets and the associated costs, the procurement of spares is a business that is highly competitive, enormous, and complex in the shipping sector. After bunkers, it is the second most significant cost associated with operating a ship.

The procedure described above might involve a third party acting as a mediator between the ship's company and the supplier.. A trader or couple of traders noting their profit on a transaction.

This is due to the fact that many different manufacturers, both large and small, such as BOSCH, SKF, McGregor, and Alfa Laval, amongst others, provide trade licenses to various traders in order to expand their reach to other parts of the world.

A spare can be ranked in order of importance according to its cost, the amount of time it takes to get it, and the location of both the source and the receiver.

Mariners frequently complain about the delayed supply of replacement parts, but the firm that manages these spares is constrained by a number of considerations related to cost and budget control.

There is no delay in supply in any case, even if it is an essential spare part that is required onboard (for example, a filter for OWS).

For instance, exhaust or inlet valve seats might have a longer lead time, and if a significant overhaul is anticipated for the following quarter, the company that places an order will wait for the lead time by a supplier supplying at a lower cost rather than going for immediate delivery at inflated prices. This is because waiting for the lead time allows the company to save money (Orosa, 2012).

If sufficient expertise is available for the procurement of spares from a variety of vendors and switching to local orders for consumables, a sizable margin of profit could be made while still maintaining cost control.

If a ship is careful enough to anticipate the need for a specific spare in advance, it will help the purchaser to have a sufficient lead time in hand, which will allow them to acquire the identical item at a significantly reduced cost.

In most cases, the price will be reduced if the lead time is increased.

Centrifugal pumps and positive displacement pumps are the two categories that are included in the shipyard manuals that categorize the pumps that are found on board a ship.

Unfortunately, the pump manufacturer does not always mention the type of bearings that are installed in each pump. As a result, the cost of ordering bearings through the pump manufacturer will be significantly higher, with the exception of situations in which the bearings are unique and could not be identified. Bearings of various sizes and types, including SKF, NSK, and FKM, are always available for us to order from local vendors.

Because local orders are typically more affordable, this would undoubtedly result in cost savings. Same goes for nuts and bolts, valves, gaskets, carpeting.

A shipping company that operates sister ships or ships using the same machinery and that travels the same route of ports of call is sometimes in a position to request that any spare part be brought into any particular port so that its sister ship can be supplied with it. One example of this would be FIVA valves on ME engines.

This really results in an increase in the total number of spares that can be utilized during a particular time frame at a particular site that is managed by the same organization.

When it comes to minimizing losses incurred during the process of trading or obtaining spare parts, the single most important thing to keep in mind is to verify that the correct spare is being ordered, packaged, and delivered.

Due to the fact that the cost of transportation can sometimes be higher than the cost of the spare itself, incorrect details will lead to very high losses for an error. These losses can be controlled, however, through the utilization of micro monitoring of each and every detail. Because of the expensive cost of transportation, the incorrect spare part is nothing more than a scrap onboard that is either never used or needs to be trashed (Somani et al. 2021).

4.4 Relations with other maritime departments

The procurement process may include purchase planning, determination of standards, research into vendors, the selection of vendors, price negotiation, financing, ordering, receipt, and inventory control. The process may involve multiple departments such as the purchase department, finance department, etc.

Procurement and finance are each handled by a distinct department under the typical organizational structure of a company, however they do collaborate closely with one another. Even while it does the job, this is not the most productive nor the most efficient way to handle operations. Despite the fact that the two aspects of a company's operations are distinct from one another, the connection between them is quite complex. Both the procurement function and the finance function are concerned with making the most of the money that is available, but the primary focus of the finance function is on maintaining a positive balance sheet. It is imperative that the two departments collaborate and synchronize their objectives in order to achieve the most desirable results. Businesses that enable their departments to work together as partners not only provide themselves a competitive advantage but also typically realize improvements in their operational efficiency (Orosa, 2012).

The department of finance establishes the spending caps for the procurement department, and the procurement department strives to save money whenever and wherever it can by using cost-cutting and cost-avoidance methods. The use of an automated procure-to-pay system, also known as a P2P system, to connect procurement to back office tasks, beginning with the purchase requisition and continuing all the way through the processing of invoices is beneficial for improving efficiency and reducing risk. Procurement is able to use three-way matching to ensure that the items they order are what they receive, and that what they receive is what they pay for. Finance is able to pay for everything that is ordered and received by procurement. Reports on expenditure management and income, along with other vital pieces of information, are provided by finance, which displays the overall health of the organization. The department of procurement ought to make use of these reports in order to facilitate day-to-day decision-making processes, in addition to budgeting and financial planning.

Businesses have a bad habit of concentrating the majority of their attention on the physical supply chain and failing to appreciate the importance of giving the financial supply chain the attention it deserves. After all, this is the reason why there is a sufficient amount of cash flow to keep the business going. The financial supply chain is what ensures that the bills are paid so that you can continue to order supplies, have power, internet, and water in your facility, and ensure that staff are paid so that they continue to come to work every day. Both the management of working capital and cash

flow, as well as the management of relationships with various suppliers, become increasingly critical as costs continue to go up (Paultraï et al. 2006).

When the financial supply chain and the physical supply chain are integrated, it is necessary to spend time locating weak links in both of the chains. Any sort of vulnerability in either the financial or procurement departments might easily endanger both chains.

After implementing an automated P2P network and working closely with procurement, the finance department may transition from being responsible for sending out payments to playing a more strategic role in the day-to-day running of the firm. Because there is less room for error and missed invoices, the entire system becomes more efficient. In addition, teams are able to be more proactive as a result of increased visibility and real-time budgeting insights, which are provided by the system (Paultraï et al. 2006).

Everyone has access to the information they require, when they require it, when the Chief Procurement Officer and the Chief Financial Officer work together on the P2P system. This ensures that the entire process is transparent. Both the procurement department and the finance department are able to readily check the status of any purchase order or invoice at any point of the process, beginning with the initial request and continuing through approval, receiving, and payment. The information can be put to use by Finance to ensure that they are receiving all discounts that are available to them and to boost earnings by gaining early discounts through early or on-time payments. The information can be used by Procurement to determine which supplier relationships are the most successful. This allows Procurement to continue placing orders with those vendors who provide the company with high-quality materials and services while saving the company money.

In addition to cooperating on the technology around the P2P system, the procurement department ought to be willing to demonstrate the return on investment that is provided by the actions that they take. It will be much easier for the marketing and finance departments to collaborate if the marketing department can demonstrate to the finance department how their decisions have resulted in favorable outcomes, such as cost savings, cost avoidance as a result of risk mitigation, or other accomplishments (Humphreys et al. 1998).

It is vital to create clear guidelines as to who is responsible for what in order to promote improved coordination between the finance and procurement departments. On the basis of the strengths of the team, key activities should be delegated to one department so that it can take the lead. This guarantees that no one will be left squabbling over who leads what and that everyone will receive credit for the role they perform.

When it comes to the management of spending, finance often approaches the problem from an accounts payable point of view. This indicates that they are placing a greater emphasis on accounting concerns related to the budget, such as the recording of costs accurately and the processing of invoices. On the other hand, procurement views it as preserving conformity with an approved supplier list and negotiated contracts, while simultaneously managing maverick spend. It's important to encourage the members of the procurement teams and the financial services teams to look at problems from both sides. If the company wants to keep goals aligned, it is important to understand each other's points of view. This allows procurement to work toward contracts and deals with suppliers that not only add value but also provide cost benefits such as more flexible payment terms and risk reduction, which is generally a high priority for finance. And finance can help procurement understand the significance of efficient supplier onboarding by providing examples such as ensuring that suppliers are paid on time and lowering the likelihood of fraud occurring (Paultra et al. 2006).

When procurement talks about "cost savings," what they really mean is that they've noticed a drop in the price of something. When the finance department hears such term, they anticipate that there will be a decrease in costs when compared to the statement from the prior year. The fact that there are several price reductions that aren't represented on income statements can cause finance to be skeptical of the claims made by procurement. When all of the departments can reach a consensus on the vocabulary and standards, it makes it much simpler for them to collaborate.

The spending limitations and goals are determined by Finance, but if those goals entail community purchases, Finance might not have as much knowledge as Procurement does about those purchases. It's likely that those in charge of finance are unaware of how rapidly commodity prices move, which might lead to budgetary constraints for procurement that are practically difficult to meet. A company can avoid setting financial

goals that are impossible to achieve by cooperating with one another (Humphreys et al. 1998).

As a performance indicator, the finance department frequently refers to the inventory line that may be seen on the balance sheet. It is easy for them to feel that procurement is squandering money on things that are just sitting on shelves in the warehouse since they do not have the same level of grasp of the subtleties of inventory that procurement has. The procurement department is aware that additional inventory is frequently required to maintain operational efficiency during supply outages and demand spikes. Working capital strategy and operations management can be brought into better balance with the help of collaborative efforts in this area.

It is common practice for finance departments to exert pressure on vendors to accept more favorable payment terms when it is difficult to obtain credit for the company. These terms are more favorable for the finance department. Even though payment periods of ninety days or more make it simpler for your company to manage its cash flow, these terms are not optimal for your vendor because vendors, like your company, face cash flow challenges of their own. The procurement department is aware that this makes it more difficult to manage suppliers because it strains relationships and frequently results in price hikes as a form of compensation for the late payments received. In some circumstances, it may even mean that some suppliers refuse to do business with your company. As a result, despite the fact that it seems like a good option on the surface, it can have significant serious unintended consequences in the long term. It will take some time until seamless collaboration is achieved if one is currently functioning in a silo system, in which procurement and finance have very little to do with one another. Its important to encourage the CPO and CFO to meet and discuss ways in which the two departments may collaborate to make each other's jobs simpler, and then start putting plans into action, beginning with the automation of P2P transactions (Planergy, 2022).

5.1 Types of procurement and how are made in shipping

Since the beginning of commercial activity, procurement has been an essential and fundamental component of doing business on a transactional level. Even though the days of scribes keeping note of purchases on papyrus scrolls are long gone, the act of properly selecting and acquiring the items and services that are required for day-to-day business operations is still just as crucial as it was back then. The bottom line can be directly impacted by procurement if it enables the company to obtain the products it requires in a reliable manner and at the lowest possible cost (Humphreys et al. 1998).

The term "procurement" refers to a wide variety of operations that are performed in order to acquire products or services. What exactly is the point of the procurement process? In general, the goal of procurement teams is to buy supplies at the most reasonable prices possible while also maximizing their value. However, the term "procurement" is not always utilized in the same manner by different businesses. Many businesses believe that the term "procurement" covers all of the stages, beginning with the gathering of business requirements and continuing with the sourcing of suppliers and continuing all the way through to the tracking of the receipt of goods and the updating of payment terms. However, other businesses consider procurement to refer to a more limited range of activities, such as issuing purchase orders and making payments (Paultra et al. 2006).

The role of procurement is critical to the success of a company. It has the potential to contribute to an increase in the profitability of your company if it is managed effectively and carried out effectively.

It encompasses a variety of actions associated in acquiring products and services, such as searching for potential suppliers, negotiating terms, making purchases, monitoring when supplies are received, and keeping records.

It is essential to maintain constant monitoring and evaluation of the procurement process in order to identify and address any bottlenecks or inefficiencies.

By automating and keeping track of procurement operations, technology can help cut costs associated with purchasing as well as administrative burdens (Denslow et al. 2003).

Procurement Explained

Some companies have followed a long-standing practice of using the term "procurement" interchangeably with "buying." However, in modern times, purchasing

is sometimes regarded as merely a single phase of a longer and more comprehensive procurement process. So, what precisely does it mean to procure something?

Obtaining the goods and services that a company needs to run its day-to-day operations requires a number of activities, including sourcing, negotiating terms, purchasing items, receiving and inspecting goods as necessary, and keeping records of all of the steps that are taken throughout the procurement process. Procurement encompasses all of these activities.

The procurement process is an essential part of gaining an awareness of supply chains because it enables businesses to locate dependable suppliers who are able to offer goods and services at prices that are on par with those offered by other businesses in the industry. This is the case regardless of whether the company is looking for a new source of marketing services, new office supplies, or raw materials for production.

For instance, if a company needs a new supplier to provide an ongoing service for an indefinite period of time — for instance, an email security solution — the procurement process helps the company choose the supplier that most effectively meets all of the requirements of the business at a price that is reasonable for the business. It gives the company the ability to avoid spending time, money, and other vital resources dealing with a supplier that is substandard (Paultra et al. 2006).

One of the most significant aspects of refining your buying procedures is reducing costs to the absolute minimum. But it is also very important to choose suppliers who can provide the kind of high-quality goods and services that the firm requires, in addition to having the ability to do so in a dependable manner and a track record of doing so.

5.2 Various Forms and Stages of Procurement

There are many different classifications that can be applied to procurement. It is possible to classify it as either direct or indirect procurement depending on how the organization plans to utilize the things that are being acquired. It is also possible to classify it as the procurement of products or services, depending on the kinds of things that are being purchased.

The term "direct procurement" refers to the process of acquiring any and all components necessary to manufacture a final good. This encompasses both the raw materials and the finished components for a manufacturing company. It refers to any things that a

retailer has purchased from a wholesaler in order to resell to end users as part of their business (Denslow et al. 2003).

The term "indirect procurement" refers to the practice of purchasing products that are generally necessary for day-to-day operations but do not directly contribute to the bottom line of the organization. This can include anything from office supplies and furniture to advertising campaigns, consulting services, and equipment maintenance. Also included in this category are office supplies and furniture.

The term "goods procurement" most commonly relates to the act of purchasing tangible products; however, it can also refer to the purchase of services such as software subscriptions. In general, efficient techniques for managing the supply chain are necessary for effective purchase of items. It is possible that direct as well as indirect procurement will be included (Cousin et al. 2006).

The acquisition of people-based services is the primary emphasis of services procurement. It is possible that this will involve employing individual contractors, contingency labor, law firms, or on-site security services, but this will depend on the corporation. It is possible that direct as well as indirect procurement will be included.

The process of purchasing goods or services typically entails more than one phase. The company first determines the specific products and/or services that it requires, locates the suppliers who will assist the company in achieving its business objectives, negotiates the terms and expenses of the transaction, and then purchases and receives the necessary materials (Humphreys et al. 1998).

In a small company, there can be just one person in charge of acquiring all of the necessary goods and services. Larger businesses may employ a group of individuals who are specifically trained to work with a variety of various suppliers or to provide support for particular internal business divisions. In order to determine the needs of the firm as a whole, it may be necessary for the team to solicit feedback from a number of distinct business groups regarding particular products (Lynch, 2003).

It is possible to think of the nine primary processes that comprise the procurement process as occurring in three separate stages: the sourcing stage, the purchasing stage, and the receiving stage (Denslow et al. 2003).

The first stage of the process is called the sourcing stage, and it consists of the early steps in which the company determines its requirements, formulates a purchase request, and evaluates potential suppliers. Even after the preliminary phases of sourcing have been finished, it is still a good idea to work on developing solid relationships with the

suppliers. They can create opportunities for suppliers to gain knowledge from partners, enhance their goods and processes, and build trust with customers.

In the stage known as "Purchasing," activities such as "negotiating terms," "making orders," "receiving and checking products and services," and so on are included.

Payment stage: Accounts payable uses a process called three-way matching to verify the accuracy of orders and invoices. After that, the invoice can be accepted, and arrangements can be made for the payment. It is imperative that detailed records of all payments, orders, and invoices be retained and meticulously maintained (Paultra et al. 2006).

The processes involved in the procurement process are sometimes compared to a life cycle by organizations. This point of view serves as a helpful reminder that all of the actions and stages included in the procurement process are intertwined with one another, as well as dependent on one another, and that the process is ongoing. A procurement life cycle that has been thoughtfully planned out also takes into account the integration that exists between the process and the company as a whole. This integration includes the necessity to align with preexisting company rules and procedures that cover topics like budgeting. The process is not always linear, and there are instances when modifications need to be made in order to account for a dynamic digital supply chain that includes moving suppliers, availabilities, and costs (Lynch, 2003).

People, processes, and paperwork are the three key factors that interact with one another to make the procurement process viable. This interaction is what makes the procurement process possible.

People: In the vast majority of instances, people are the ones who are responsible for beginning or authorizing each stage of the purchasing process. Procurement experts aren't the only people involved in the process; other stakeholders, such as accounts payable and the business groups that need the goods and services, are there as well. These business groups are among the participants. The monetary value of the goods and services in question plays a significant role in determining the number of people that are involved; in the process of specifying and authorizing high-value acquisitions, extra stakeholders may be required to participate (Cousin et al. 2006).

Procurement: An effective procurement procedure can be of great assistance to a firm in reaching its objectives by reducing the costs connected with those objectives and ensuring that all essential items are supplied on time. When the process is well-designed

and systematic, every individual who is a part of the process is aware of exactly what they need to do and how much time they have to complete the tasks. Additionally, they are aware of how much time they have to complete the duties. This helps to enhance accurate performance of the tasks as well as timely completion of them. On the other side, a procurement process that is not effectively organized will likely result in inefficiencies as well as errors that could end up being rather costly. Overpayments, for example, can have an effect on the bottom line, while late payments may have a negative impact on relationships with suppliers. Both of these things can have an adverse effect on the bottom line (Denslow et al. 2003).

Documentation: It is critical to not only keep records for each phase of the procurement process but also to make certain that these data are easily accessible. Even if there are personnel shifts in the procurement department in the future, the company will be able to keep its procurement process running smoothly thanks to these records, which serve as a repository of information on payment terms and the performance of its suppliers. A company needs to be able to simply follow the paper or electronic trail through each stage of the procurement process in the event that there is an audit or a disagreement about the process (Lynch, 2003).

Many times, the phrases procurement, purchasing, sourcing, and supply chain are used interchangeably with one another. Nevertheless, there are significant differences between the two of them.

Purchase vs. procurement: Considering that procurement sometimes entails purchasing, you may be curious about the distinction between purchasing and procurement. The explanation is that purchasing is mostly transactional, with a primary emphasis placed on the management of individual orders to fulfill the requirements of the business. Establishing and maintaining connections with suppliers is an important part of the procurement process, which is part of a much larger and more complicated set of activities. One more way to think about the distinction between purchasing and procurement is that procurement takes a proactive approach that begins with an analysis of the company's needs, whereas purchasing takes a reactive approach and focuses simply on obtaining what the company has already decided it needs. This is another way to think about the distinction between the two (Lynch, 2003).

Procurement vs. sourcing: Similar to purchasing, sourcing is just one component of the larger process of total procurement. The procurement process is broken up into several stages, one of which being the sourcing step. It involves tasks such as locating and

evaluating prospective providers of goods or services, negotiating terms, and selecting the vendors that provide the most suitable solutions for the company's requirements.

Contrast between supply chain and procurement: The management of the supply chain includes procurement as one of its components. The process of procuring goods and services entails searching for them, obtaining them, and paying for them. In addition to this, supply chain management encompasses the logistics involved in acquiring items, including the management of shipping and storage facilities, as well as the processing of the acquired goods into finished products and their distribution to end users.

The procedure for purchasing goods or services in organizations that are part of the public sector is, for the most part, analogous to the one followed by organizations that are part of the private sector; nevertheless, there are a few significant variances. When it comes to the procurement process, those engaged are often required to adhere to stringent guidelines due to the fact that they manage public cash. These guidelines can be understood as an ethical code of behavior that requires public officials to take responsibility for the purchases they make. It's possible that organizations in the commercial sector could benefit from applying some of these principles as well (Jenkins, 2021).

5.3 Principles of Procurement

The principles are subject to some degree of variation from organization to organization. The following are the seven fundamentals of procurement that are most frequently used.

The firm must manage cash in an efficient and cost-effective manner while simultaneously procuring goods and services in order to maximize the value of the money spent. It's possible that this may need conducting cost-benefit studies in addition to risk assessments. It is essential to keep in mind that a lower price does not automatically translate to a better value. This relationship is not always true. When deciding whether or whether an item is good value for the money spent, factors such as quality and longevity are also taken into consideration.

In the aim of maintaining a level playing field, the purchasing division need to abstain from providing preferential treatment to either individuals or suppliers. The degree to which a given proposal satisfies the requirements of the organization should be the sole factor considered in objectively assessing the merits of each proposition (Lynch, 2003).

Competition: Businesses should solicit competitive bids from multiple suppliers, unless there are specific reasons not to do so, such as a sole-source provider in which the good or service is only available from a single vendor. In this case, companies should not seek competitive bids from multiple suppliers. In this scenario, firms have no reason to seek competitive bids from a number of different vendors.

Effectiveness: Procurement procedures need to be carried out successfully and efficiently in order to assist in maximizing value and avoiding delays.

To comply with the requirements of transparency, firms are required to make all important information on procurement available to all parties, including members of the general public and other companies with which they conduct business. Information should only be kept secret when there are strong reasons to do so, such as ethical considerations, legal considerations, or other compelling reasons.

Those who participate in the process of public procurement are subject to the expectation that they will always uphold a high standard of integrity and strive to be regarded as trustworthy, reliable, honest, and accountable. It is imperative that the money be put to use in a manner that is both consistent with their original intent and beneficial to the general populace.

Accountability denotes that individuals who take part in the procurement process are responsible for the decisions and activities they do as a result of their participation. They are accountable for delivering accurate reports regarding any and all aspects of the procurement process, including any and all inaccuracies they discover (Denslow et al. 2003).

Procurement & Finance

The procurement and finance teams are divided in separate sections of the overall company. They have occasionally been at odds with one another throughout history for the primary reason that procurement spends money, whereas finance focuses on profitability, which sometimes means finding ways to spend less money. This

fundamental difference in priorities has been the root cause of their occasional disagreements.

Nevertheless, a strategic relationship between the two groups can be of benefit to the company as a whole, in part because each group can contribute unique insights into the ways in which the company conducts its business. This is one of the reasons why a strategic relationship between the two groups can be of benefit. For instance, a well-managed procurement team may have a profound understanding of how precisely sourced commodities and services may assist commercial companies in optimizing their earnings. This knowledge can be particularly useful in the event that the team is tasked with locating new suppliers. Because of this, the finance group is in a better position to gain a more accurate picture of how the expenditure of the company as a whole affects the bottom line.

Software for integrated supply chain management that is capable of connecting information from throughout the organization, including financial data, is an important tool that can bridge the conventional gap and assist teams work together to promote corporate objectives (Jenkins, 2021).

6. Importance of budget for the department and the maritime company as a whole

"Cost management" refers to the process of classifying, recording, allocating, and analyzing cost data in order to give information that can be used for "product costing," "management control," and "decision making" (Alvarez Rodriguez, 1999).

It is necessary to classify costs in accordance with the nature of the expense (direct or indirect), the nature of the behavior (fixed or variable), the product or service, and the location of the activity at the time the expense was incurred. Costing is the process of determining the prices of goods and services by allocating direct costs and overhead expenses to those goods and services. Costing also serves as the foundation for analysis, decision making, and control.

The classification of costs as direct, indirect, constant, or variable, as well as the allocation of costs to products or services and cost centers, are all essential steps in the

procedure of cost-volume-profit analysis. Responsibility accounting is a process in which managers have an active role in the planning of their budgets and in establishing who is responsible for any variations that arise as a result of their actions. The classification and analysis of expenses form the foundation of responsibility accounting, which is the foundation of responsibility accounting.

In contrast to the vast majority of other commercial sectors, the shipping industry does not possess any cost classification standards that are generally accepted around the globe.

According to Stopford (1997), the total amount of expenses that are incurred in the operation of a shipping company is contingent on the interaction of three different factors. To begin, there are costs, which are defined by the ship itself in terms of the amount of fuel it uses, the requirements for repairs and maintenance, the number of crew members, and a range of other elements. In addition, there are a variety of other factors that might affect these prices. Second, the overall amount of costs incurred by the company is also impacted by macroeconomic factors that are not directly under the control of the company, such as inflation and shifts in the cost of bunkers, interest rates, spare parts, stores and supplies. These factors are not directly under the control of the company. In conclusion, there is a considerable relationship between the costs of a business and the ability of management, the amount of money spent on overhead, and how efficiently operations are handled. This criterion suggests that managers may develop an effective control over the costs associated with running a shipping company, with the exception of the second scenario, which is caused by the influence of economic trends that are beyond the control of ship-owners (Alvarez Rodriguez, 1999).

7. Relations and impact on board

7.1 Communication with shipmen for the vessel's needs

Attention should be paid to the quality of communication as well as its impact on the efficient functioning of the crew. The ability to communicate effectively leads to improved levels of cooperation, which in turn leads to a reduction in stress and an increase in professional standards.

Because of the increased diversity of the crew members working aboard ships, the importance of having strong communication skills has increased. Through effective communication, the ship's operations can be made more productive while minimizing risks. Having strong communication skills does not just mean having the knowledge and ability to speak English, it also means cultivating a personality that allows one to acquire communications abilities in a multilingual working environment, both on board and off. In order to resolve issues with the requirements of the ship, the department is required to maintain communication with the crew members (Kumar, 2000).

7.2 Critical spars on board / Extra spares need for safety reasons

Recent guidance provided by the Oil Companies International Marine Forum (OCIMF) (First edition 2018) emphasized the significance of taking preventative measures by stating that it is recommended that an appropriate inventory of safety critical spare parts is carried on board the vessel at all times. This recommendation brought to light the significance of a proactive approach.

In order to maintain control of the onboard supply and ensure that the fuel system is operating correctly, the department has to create a program that analyzes the ship's requirements for spare parts over a predetermined time period and then automatically recommends a spare part kit that is specifically suited to the ship's fuel supply system.

The operation of a fuel system that is both safe and reliable has been and will continue to be the department's primary focus.

The recent developments have led to a situation in which it is possible that the ship's main and auxiliary engines were originally designed to run on fuels whose properties differ from those of the fuels that are preferred today. Because of the qualities of the gasoline, filters may become clogged. Because of this, particularly the filters, it is imperative that they be checked on a frequent basis.

No matter what kind of fuel the ship runs on, it must have a marine gas oil supply system in order to have pilot fuel. Additionally, it is an effective backup mechanism for scrubbers. There is also the possibility of retrofitting a marine gas oil supply system.

Flowmeters that are able to satisfy the current criteria for monitoring and reporting fuel use in an accurate manner are flowmeters that have been appropriately calibrated.

A streamlined administration of spares can bring benefits not only from a practical and operational standpoint, but also from an administrative point of view. The shipping industry is gradually making a comeback, although the recent trend of consolidations frequently results in shared technical management and procurement. It makes perfect sense to take advantage of economies of scale when it comes to planned fleet maintenance, improved availability of spare parts, and system condition monitoring. It is possible, depending on the scope, for there to be expanded levels of technical assistance as well as discounts on things like retrofits.

To summarize, planned maintenance and spares administration are both helpful in achieving compliance with the numerous needs of today's business environment. By planning ahead, operational safety can be improved, and the need for costly ad-hoc calls or deliveries can be reduced significantly. This is something that is very much appreciated by charterers as well as insurance (Auramarine, 2018).

7.3 Safety regulations

Accidents at sea have become the primary source of concern for those working in the marine business because of the widespread harm they can cause. In particular, accidents at sea pose a threat to society since they can result in the loss of life, the destruction of property, and the degradation of marine environments. It is essential to determine the underlying factors that lead to accidents in order to locate a remedy or preventative measure that will lessen the negative effects of the accident. Accidents at sea can be brought on by a number of different things, including natural or environmental

variables, technical failures, route conditions, factors linked to the ship itself, human mistake, and issues relating to the cargo being transported. However, the vast majority of research have pointed the finger at human error as the leading cause of maritime mishaps. According to the findings of studies, a number of measures have been developed to combat human errors. As a result, more advanced technology was developed to lessen humans' reliance on technology and help them better adapt to it. In spite of the fact that these systems are capable of performing multiple tasks at once, they still require human assistance. Studies have shown that even sailors with a lot of experience and training can still make mistakes; as a result, any human-operated systems that are present on board are seen as ineffectual for reducing the likelihood of mistakes being made by humans.

In addition to this, maritime authorities like the Maritime and Coastguard Agency (MCA) and the Marine Accident Investigative Branch (MAIB) have emphasized a large number of helpful approaches and recommendations to prevent accidents in the investigation reports that they have produced. On the other hand, a lack of knowledge in the importance of learning from past incidents has become a threat to marine safety. Skjong and Soares (2008) have argued in the past that it is imperative to make improvements to the methodologies that are used to investigate and improve maritime safety. Celik and Cebi (2009) have also emphasized how important it is to build a unique analytical framework to identify human errors. In his research to investigate shipping accidents, Celik has employed the Human Factors Analysis and Classification System (HFACS). Therefore, it is important to do research on the factors that lead to human errors and the safety parameters. While the HFACS framework has the potential to improve research by determining the amounts of human error based on reports of maritime accidents made by MAIB, the framework is currently under development. In this regard, the perceptions and perspectives of shipping business management and seafarers operating on board ship can provide important insight regarding the factors that contribute to the occurrence of accidents as well as the safety standards that help to foster a culture of increased safety (Veluplay et al. 2020).

7.4 Ensure supply of proper spares along to safety regulations

The following is a list of the several procedures that are utilized onboard ships for the purpose of identifying spare parts:

1. The number of the component

The part number is the most fundamental number that may be assigned to any part that is stated in a specific drawing of any piece of machinery.

Therefore, in the event that a requisition is raised with only the part number, either the supplier will require the ESN (engine serial number), model, or manual page of the specific piece of machinery in question with as much information as is possible to guarantee that the supplied spare is accurate.

2. Drawing number

The drawing number is the aggregate of all of the components of a certain machine or a portion of a machine that are depicted in a single drawing.

This is also a vital component to know in order to determine the spare that is necessary because many manufacturers, throughout the course of time, continually updating the manuals for their machines, which might result in a change of drawing number.

This may be of use to the supplier in determining, without the use of ESN, the range of serial numbers this particular machine belongs to. The concept of drawing number can be better grasped by referring to the examples that are provided below.

3. The number of the item or the number of the position

It is common practice to assign numbers to various components that are depicted in a single drawing. This is done so that the correct spare parts can be obtained, as there will be no room for confusion in the supplying process if a particular number is stated with the same name. This practice is mentioned frequently in a variety of manuals.

For example, a drawing that has five different nut names might not use the same nut for each position. Instead, the nut might be an M24, an M16, or another type entirely.

This is due to the fact that many providers from around the world speak different languages, each of which has the possibility of being misunderstood.

4. Material number

This is a unique number that was generated by the manufacturer for the supply, and it ensures that the business stays within its confines while also providing accurate supplies.

There is no need to refer to the part number, drawing number, or item number in order to determine whether or not two different items are identical to one another if the material number of those items is the same.

Material number, in a nutshell, is the king of all the other techniques of identifying spares; nonetheless, it is frequently kept a secret in order to prevent the theft of trade secrets.

5. Particulars, Description, Details

In situations in which the drawing number, part number, or item number are insufficient to characterize the spare, these are frequently required as an additional identifier.

It is possible that some spares are not indicated with sufficient information in the drawing, or that they may be different for any particular piece of machinery, which could ultimately result in the improper delivery.

Dimensions, amperes, kilowatts, hertz, volts, materials, designs, and other specifics might be included in the details.

6. IMPA catalogue

This catalogue is the best resource for locating all of the spares that are now on the market for the shipping industry. It is mostly used to get the consumables that are necessary for a ship. We can think of everything, and they have it: nuts, bolts, plugs, valves, tubes, pipelines, tools, contactors, fuses, and so on. The only catch is that it is not ship-specific.

An IMPA number that is provided in a requisition will prevent any confusion from occurring and will guarantee the accurate delivery of a spare with no additional inquiries required.

7. Article number

This is a broad term that can be referred to by a variety of names but always refers to the same thing.

The majority of shipping companies operating in the modern era have begun implementing a new strategy for the procurement of spares. This strategy involves the creation of company-specific numbers that can be used to identify a specific spare. For a given shipping company, any spare with the same article number will function in the same manner.

When seen from a more macro perspective, an article number is nothing more than a material number that merchants and shipping organizations can use to build their own databases. This number has zero bearing on any other association whatsoever; it is completely irrelevant.

Chain of Supply for Replacement Parts

The process of providing spare parts to a ship involves a few phases that are nearly same anywhere in the world.

As soon as the ship issues a requisition mentioning the requirement of a specific spare or a consumable, the respective company post confirming budget for that ship determines whether or not the spare will be supplied in the next store's supply, unless the spare in question is either a critical spare or a consumable, or any spare that is required on breakdown for immediate replacement.

(Somani, 2021)

7.5 Ensure supply at ports of convenience

Over the course of the past few years, study into the topic of supply chain disruption has grown to become an important field that is gaining recognition. Seaports, which are one of the many nodes that make up global supply chains, play an essential part in ensuring that there is a consistent flow of cargo from one entity in the chain to another. The role of seaports has evolved from that of a traditional regional gateway to that of

an area where significant value is added and where complicated activities connected to logistics are carried out.

Ports that have reached a more mature phase of development are those that are well-developed and play a significant role as key participants in the distribution of cargo. Because of this growing integration of ports into supply chain management, there is a larger level of uncertainty for downstream planning, the transportation of products, and the exchange of information. Because of this, risks that emerge during routine port activities are operational weaknesses that have the potential to develop into enhanced unintended impacts throughout supply chains. Together with trends and practices in supply chain management, the chance of a disruption in supply chain operations is enhanced. This is due to the fact that the impacts of a disruption that originates from ports are readily amplified in the current commercial climate. As a result, the ability of ports to smoothly administer services, operations, and the movement of goods is a capability that is highly sought for (Hui et al. 2014).

To put it another way, it is essential to determine the steps that the management of the port can do to lessen the negative effects of port-related supply chain disruptions (PSCD) and cut down on the number of occasions on which PSCD dangers can materialize.

Threats to port security and critical infrastructure (PSCD) are operational risks that are inherent in port procedures and have the potential to interrupt the continuity of supply chains farther upstream or further downstream.

Research into the shifting function of ports in supply chains has received a significant amount of attention and effort. Because of the changes they've undergone, ports' roles in the networks that make up supply chains have been given new significance. Ports offered a convenient location for the storage of cargo, but, as time progressed, other port responsibilities, such as distribution, packing, and processing of conventional and bulk cargo, emerged as increasingly essential roles for ports of the second generation. The third generation of ports witnessed the emergence of the notions of collaboration and information sharing, with the ports functioning as the facilitators, and with technology playing a crucial part in the information exchanges between many players. Throughout three generations, there are clear indications of shifts in the ownership of the port, the port development plan, and the extent of port activities (Hui et al. 2014). As a consequence of this, the goals of ports have significantly shifted, have transitioned from the role of a region's gateway to that of a system that offers value-adding and

facilitation services. Ports have been redefined as important links that both deliver and capture value in value-driven chain systems, which has resulted in a shift in the roles that they play in different types of business contexts. The port's capacity to oversee the connectivity of logistical operations throughout the supply chains is precisely what enables it to exert its effect on the movement of goods along supply networks. It has been suggested that ports take on the role of connecting parties that are interacting with one another or become hub centers where values are generated by offering a wide variety of activities in an effort to keep their customers. This is especially important in light of the new context of becoming increasingly integrated. In addition to this, ports have the potential to continue their evolution as knowledge-based centers for the administration of global supply chains. The introduction of these alterations to the setting, however, brings forth a new set of issues. The difficulties encountered by ports in a supply chain that is more highly interconnected have been empirically investigated through the process of analyzing the actions of actors in the supply chain. It is important to be aware of these problems since they contribute to the definition of the business contexts in which the ports are integrated.

The efficacy of these tactics may be reduced to a single factor: the elimination of the fundamental causes of the disruptions, which are unique to each company and industry. Given that a port does not implement techniques tailored to a particular industry in order to minimize supply chain interruptions, it is in this area that it can make a contribution. The techniques that ports employ can be rather comprehensive in order to reduce the likelihood of interruptions to supply chains that affect a wide range of different businesses (Hui et al. 2014).

The change in the role that ports play in the procurement role makes the role of the procurement department even more complex and pushes the need for special care for supplies.

8. Conclusions

In recent years, procurement departments have expanded their duties beyond contracting products and services on demand. Modern procurement departments are directly responsible for a company's profitability and productivity. The procurement department's efficiency and the company's income and cash flow are intimately tied. Despite being the first stage, this is just the beginning. According to the review, world-class firms use procurement professionals who are competent at negotiating the best deal for the company, which is the highest-quality product for the lowest price while meeting company standards, client and public expectations, and industry rules. The company's best deal is a high-quality, low-cost product. The company should buy an item that is in stock, of excellent quality, and inexpensive.

The right software will make it easier for the department to solve compliance issues, fulfill deadlines, and protect liquidity through the speedy processing of payments. Procurement may comprise purchase planning, standardization, supplier research, vendor selection, pricing negotiation, finance, ordering, reception, and inventory management. The procedure can require input from procurement, finance, etc.

Despite being handled by separate departments, procurement and finance work closely together. Even if it's profitable, this approach to managing operations is neither productive nor efficient. Both procurement and finance aim to maximize available funds. The financial department focuses on maintaining a positive balance sheet. The two departments must coordinate their goals to attain the best results. Businesses that create an environment where personnel from diverse divisions may work together on projects gain a competitive edge and, in most cases, increase their overall efficacy.

The company must handle funds efficiently and cost-effectively while purchasing goods and services to maximize spending. In order to manage this cost-benefit studies and risk evaluations may be needed. Lower prices don't always mean better value. When assessing if an item is worth the money, quality and durability are also considered. Also, the purchasing division must avoid favoring people or suppliers to ensure a level playing field. Every proposal should be judged on how well it meets the organization's needs. Businesses should request bids from several suppliers unless there are compelling reasons not to, such as a sole-source provider. Successful procurement methods mentioned above help maximize value and reduce delays.

To comply with transparency standards, enterprises must make critical procurement information available to the public and other businesses. They only keep information hidden for ethical, legal, or other compelling reasons. Those who participate in public procurement are expected to be trustworthy, reliable, honest, and accountable. The money must be used according with its original objective and to benefit the public. Accountability means procurement participants are responsible for their decisions and actions. They must disclose any inaccuracies they find in the procurement process.

Many companies have distinct procurement and finance teams. They've fought throughout history for the purpose indicated above. The procurement department spends money, while the finance department focuses on profitability, which needs spending less. A strategic partnership between the two groups can benefit the organization as a whole because each can bring unique business insights. A well-managed procurement staff may comprehend how precisely sourced goods and services can help commercial organizations maximize profits.

Also, according to the findings, in recent years, the procurement department's role has evolved and expanded. Throughout its existence, the post's major responsibility has been buying domestic products. On the other side, more companies are recognizing the significance of procurement managers' knowledge. This isn't surprising given their capacity to lower costs, improve outcomes, and find mutually beneficial collaboration opportunities. Internal buying managers have specialized in recent years. Due to developments in technology, they can now take on more complicated and strategic roles in more businesses. They have more authority to analyze a firm's business practices, uncover potential concerns, and provide solutions. This new regulation enhanced a procurement manager's responsibility. Similarly, they examine more variables when choosing a service provider.

According to studies, risk reduction measures can be categorized as follows: (a) increase responsiveness; (b) pool or aggregate demand; (c) increase inventory; (d) increase flexibility; (e) acquire redundant suppliers; and (g) extend capacity. The efficacy of these techniques may depend on removing the specific sources of disruptions in each business and sector. A port can help prevent supply chain interruptions because it doesn't use industry-specific tactics. Ports adopt rigorous procedures to reduce supply chain interruptions, which can affect many businesses.

With so much technology on the market, a digital revolution in procurement is imaginable: RFP software, Inventory-management software, "Enterprise resource planning" (ERP) software (ERP), Contract management software.

Shipping has cyclical growth and fall patterns. The following elements have helped investors make huge profits in previous years:

- Shifts in sourcing strategies, especially those involving low-cost countries, contribute to an increase in shipping capacity worldwide. Low-cost countries are a growing supply source.
- Certain freight charter rates have risen significantly in recent months.
- The number of ships recently built is at an all-time high, and Chinese shipyards account for 40% of the global order book. This is a rise from recent years.
- Tanker day rates have reached an all-time high, boosting sector profitability.

However, potential problems are already apparent.

- Increased demand for raw materials and spare parts strains resources, increasing costs and delivery times. This raises expenses and delivery times.
- Shipping rates are reducing due to greater competition from new market entrants, especially from low-cost nations. Especially in countries with cheap labor.
- Environmental pressures are increasing, which adds price premiums to spare parts that need to meet green requirements; new IMO regulations are forcing companies to use more refined (and more expensive) distilled fuels instead of cheaper bunker oil in certain geographic locations; it's difficult to find, train, and retain enough people to crew the rising number of vessels; competition for experienced workers is fierce; and it's difficult to find enough experienced workers.

It's very crucial that every facet of a shipping company's operations must decrease expenses and boost charter profits. This comprises staff and management. Today's procurement managers can drive bottom-line savings and help companies operate more efficiently and flexibly to maximize revenue opportunities thanks to innovative tools that automate the purchasing process and generate business data for greater management visibility and business planning insight. These technologies let purchasing groups accomplish both. All of this is made possible by technological advances that lead to these instruments. Shipping companies may now embrace and use their existing purchasing experience and talent thanks to e-commerce services. Because of this, they can easily adapt to the changing shipping industry. Businesses' competitive edge will depend on how well they exploit this opportunity.

According to the findings, this shipping firm's department is important for several reasons. The department is responsible for ensuring a safe and smooth trip. The director of the department must be very skilled since he must handle a range of scenarios, communicate with the crew, ports, and suppliers, and be prepared for unexpected events.

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