Value Creation in the Maritime Chain of Transportation

The Role of Carriers, Ports and Third Parties in Liner and Bulk Shipping

Roslyng Olesen, Thomas

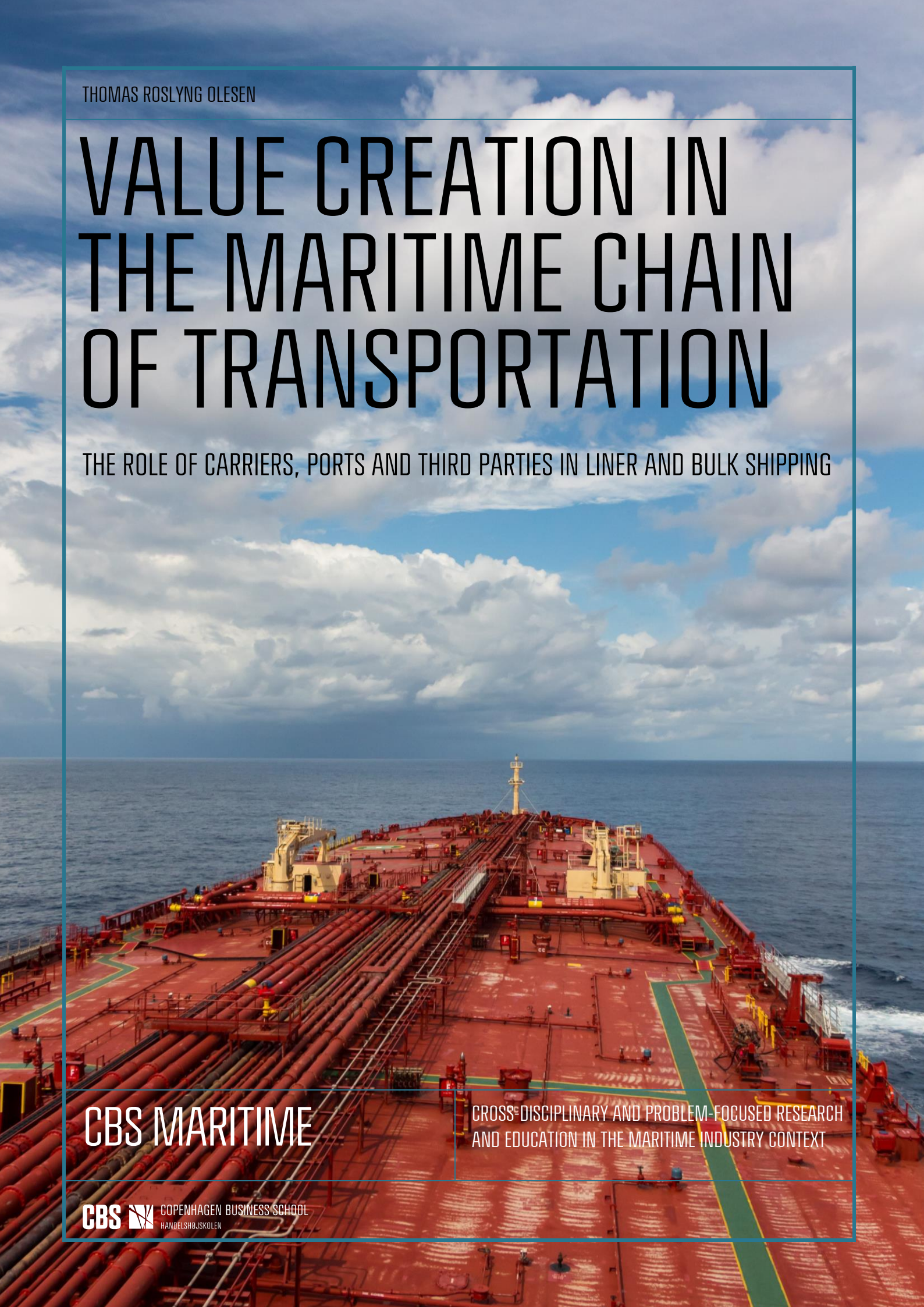
Document Version
Final published version

Publication date:
2015

THOMAS ROSLYNG OLESEN

VALUE CREATION IN THE MARITIME CHAIN OF TRANSPORTATION

THE ROLE OF CARRIERS, PORTS AND THIRD PARTIES IN LINER AND BULK SHIPPING



CBS MARITIME

CROSS-DISCIPLINARY AND PROBLEM-FOCUSED RESEARCH AND EDUCATION IN THE MARITIME INDUSTRY CONTEXT

CBS COPENHAGEN BUSINESS SCHOOL
HANDELSHØJSKOLEN

PUBLISHED BY:
CBS MARITIME
DECEMBER 2015, 2ND EDITION

CBSMARITIME@CBS.DK
WWW.CBS.DK/MARITIME

PHOTOS:
FRONT PAGE PHOTO: SCANPIX/IRIS
PAGES 9, 19: SCANPIX/IRIS

PRODUCTION:
CBS MARITIME

GRAPHIC PRODUCTION:
SKABELONDESIGN A/S

ISBN: 978-87-93262-07-2

CONTENTS

INTRODUCTION

This short report forms part of the ambitious CBS Maritime research initiative entitled "Competitive Challenges and Strategic Development Potential in Global Maritime Industries", which was launched in 2014 with the generous support of the Danish Maritime Fund. The competitiveness initiative targets specific maritime industries (including shipping, offshore energy, ports, and maritime service and equipment suppliers) as well as addresses topics that cut across maritime industries (regulation and competitiveness). The topics and narrower research questions addressed in the initiative were developed in close dialogue between CBS Maritime and the maritime industries in Denmark.

CBS Maritime is a Business in Society (BiS) Platform at Copenhagen Business School committed to the big question of how to achieve economic and social progress in the maritime industries. CBS Maritime aims to strengthen a maritime focus at CBS and create the foundation for CBS as a stronger partner for the maritime industries, as well as for other universities and business schools with a devotion to maritime economics research.

The competitiveness initiative comprises a number of PhD projects and five short-term mapping projects, the latter aiming at developing key concepts and building up a basic industry knowledge-base for further development of CBS Maritime research and teaching.

This present report "Value Creation in the Maritime Chain of Transportation – The role of carriers, ports and third parties in liner and bulk shipping" presents preliminary insights from a broader mapping project examining value creation logics in the maritime value chain. It explains the roles of various actors in the maritime chain of transportation and examines how these actors create value. The report builds on interviews with key players in the maritime value chain combined with studies of the extant shipping industry literature.

PURPOSE AND METHODOLOGY

The maritime chain of transportation is driven by the demand for transportation of cargo between locations with excess supply to locations with excess demand. If there is no demand there is no movement and thus no requirement for providers of transportation. Transport is thus a derived demand and carriers and third party service providers, who engage in the chain of transportation, must derive value from and add value to the movement (Robinson, 2002).

How carriers and agents create value in the maritime chain of transportation is, however, a subject which has been overlooked in the existing literature. This is especially the case with regard to the role of the agents and we have very little systematic knowledge about their key functions in the creation of value in the maritime chain of transportation.

This report addresses four research questions:

1. What actors are engaged in the maritime chain of transportation?
2. Where do these actors position themselves in the maritime chain of transportation?
3. What types of services do they perform?
4. How do they add value to the maritime chain of transportation?

Value creation can be defined in many ways. From a financial perspective value is created when a business earns revenue that exceeds the expenses. In many sectors, however, value is increasingly being created by more intangible drivers such as research, innovation, branding, ideas, and networks, which usually provide indirect rather than direct benefits (Kaplan & Norton, 2004a; 2004b). The sources of value creation will furthermore differ from industry to industry:

"If customers value consistent quality and timely delivery, then the skills, systems and processes that produce and deliver quality products and services are highly valuable to the organization. If customers value innovation and high performance, then the skills, systems and processes that create new products and services with superior functionality take on high value. Consistent alignment of actions and capabilities with the customer value proposition is the core of strategy execution" (Kaplan & Norton, 2004b).

According to Kaplan and Norton, the link between these intangible assets and value creation is corporate strategy. A company that knows what sources and drivers create value within the industry can deploy capital better and obtain a competitive advantage (Kaplan & Norton, 2004a; 2004b).

As this report shows, the chain of transportation is complex in this regard. The assets that allow the chartering broker to provide a value added service for the shipper or carrier are different than the assets that allow the ship operator to provide a value added service for the shipper.

In order to identify and categorize how different actors create value this report applies four key metrics identified by Johansson et al. (1993). These include: (1) service, (2) quality, (3) cost and (4) time reduction. This framework has been chosen because it is easy to use, gives a good overview of how various activities add value, and it can be applied to any sector. According to Johansson et al. (1993,) any company – regardless of sector or industry – should thus focus on improving quality and service while also reducing cycle time and cost to the consumer.

Who captures the added value is another question, which depends on the individual transactions between the actors in the chain. A port agent may add value to a carrier by securing smooth port operations and thus reduce waiting time. The added value may, however, be captured by a freight forwarder, who forces the carrier to lower the price or more likely be distributed among several actors. The role of sales forces is thus important in this regard (Blocker et al. 2012). The question of value capturing is, however, extremely complex and is not included in this study.

When examining the shipping sector, it is important to distinguish between different kinds of shipping, because the demand for different types of services (and thus the types of value added activities) differs among them. The shipping market is basically made up by three segments: (1) Liner shipping, (2) bulk shipping and (3) specialized shipping (Stopford, 2009).

Liner shipping companies provide regular services between specified ports according to time-tables and prices advertised well in advance. The cargo is mainly carried by container lines in containers or as break bulk. Break bulk is non-containerized general cargo which is loaded individually (e.g., cars, paper reels, construction machinery). Goods carried in liner-service ships are usually of higher value than the cargos hauled in tramps and are charged higher freight rates. The container line will usually carry a vast number of different commodities (Stopford, 2009).

Bulk shipping differs from liner shipping in several ways. Most bulk companies operate on the spot markets and have no fixed routes or schedules. This is often referred to as tramp trade. The ships are usually contracted to carry cargo from (any) port to (any) port. The cargo usually consists of a large quantity of a single commodity. It mainly includes dry bulk (ore, coal, fertilizer, grain etc.) carried in bulk carriers and wet bulk (usually crude oil, petrochemicals, gasoline etc.) carried in tankers. The cargo is thus generally of lower value than the (containerized) cargo carried by the liner companies (Stopford, 2009; Lagoudis et al., 2004).

Finally, there is the specialized shipping segment. Ships in this segment carry specialized cargo such as chemical gas, refrigerated cargo, forest products, vehicles, heavy lift cargo, offshore equipment, passengers etc. Whereas the bulk market consists of hundreds of similar ships competing for homogenous cargo, the specialized shipping segment is extremely differentiated (Stopford, 2009).

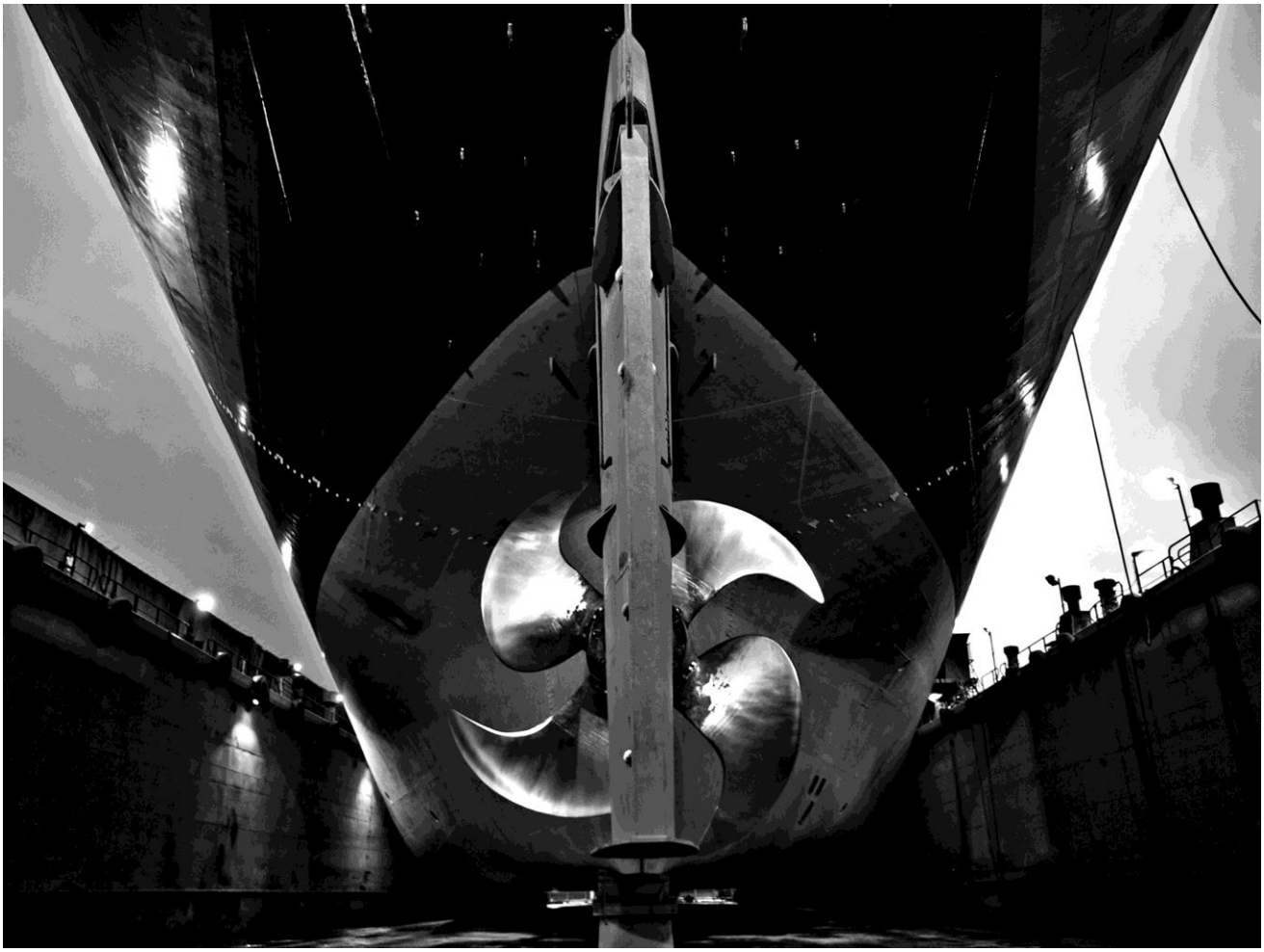
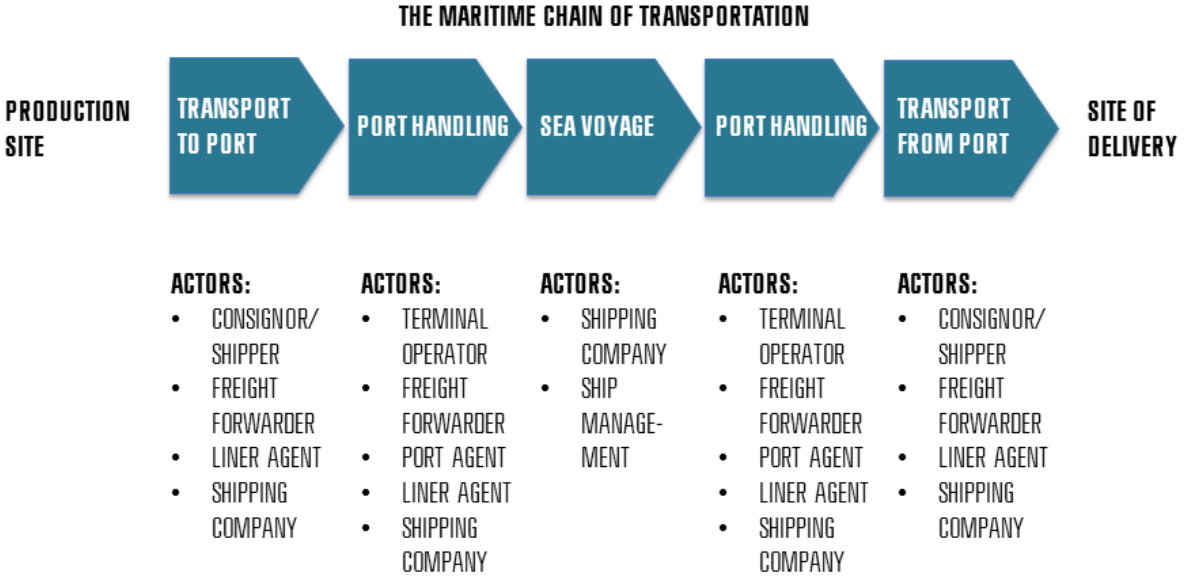


Foto: Tim Ruttledge, Handelsflådens Velfærdsråds Fotokonkurrence 2012

This report focuses on value creation in liner shipping and bulk shipping (dry bulk and wet bulk). The outset for the report is a paper by Lyridis et al. (2005) on liner shipping and a paper by Lagoudis et al. (2004) on dry bulk and wet bulk. Both studies have applied a business process model approach. Business process modelling is basically used to describe the processes within a business. It uses a top down approach with several levels from the overall business process to detailed activity descriptions. Each new level thus offers a higher degree of details. The two papers provide a good foundation for examining the activities in the two segments and identify how different actors provide value added services (Lyridis et al. 2005; Lagoudis et al. 2004).

At a general level, the maritime chain of transportation basically consists of a sea voyage and two land based transportations. The transportation begins at the production site, where the commodities or goods are usually stored before being shipped. From this location, they are transported to the port by a truck, train, conveyor, or pipeline etc. At the port, they are usually stored again before being loaded on a ship. The ship carries it to the port of arrival, where it is discharged and usually stored before being transported to its final destination (Stopford, 2009).

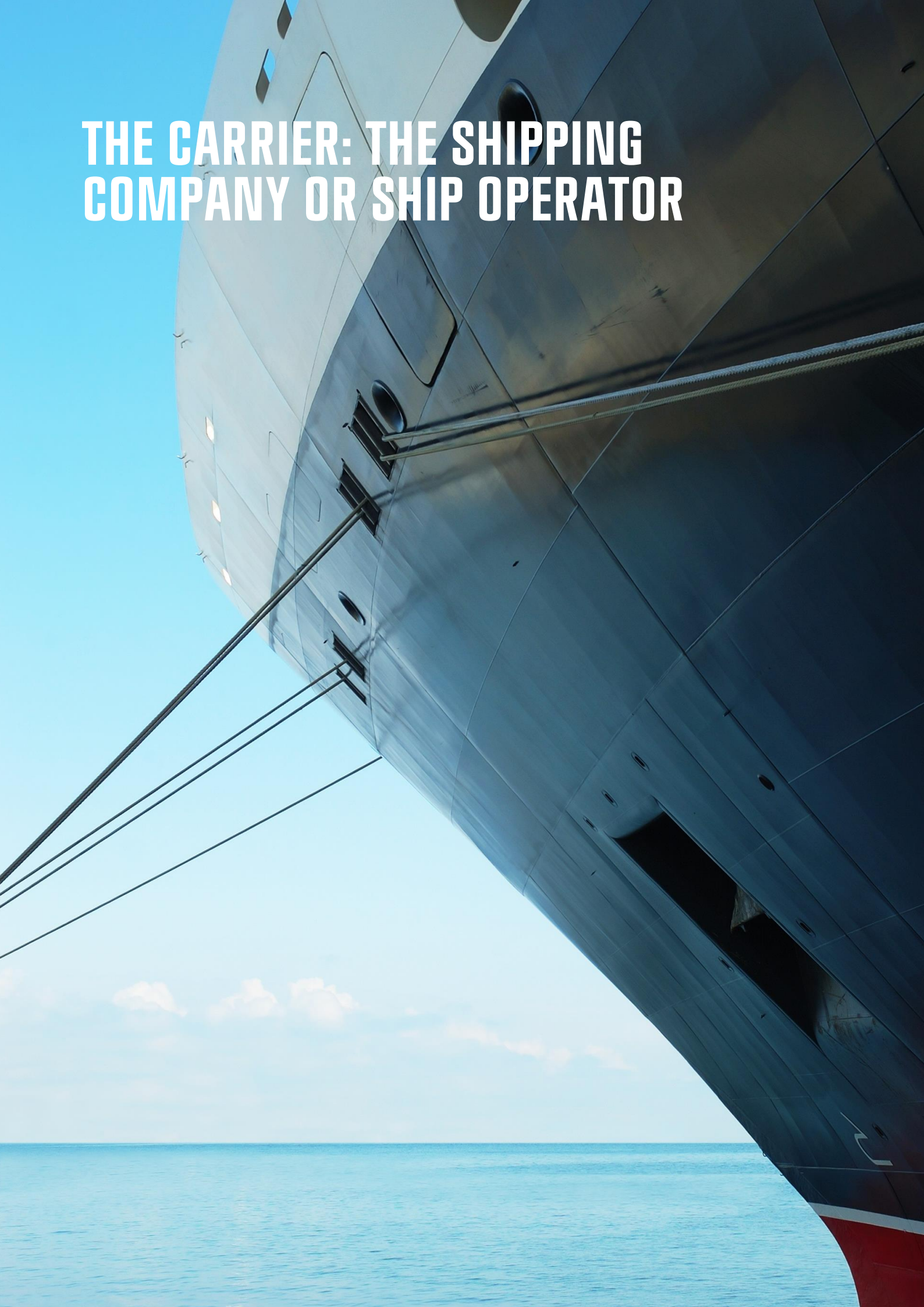


This is obviously an extremely simplified description and there are many differences from liner shipping to bulk shipping. Container ships carry several small parcels, which require a much larger administration than bulk carriers and tankers, which usually carry one single commodity. As a consequence, the chain of transportation in bulk shipping is usually shorter than in liner shipping and includes fewer actors. The simplified model, however, gives a good starting point for analyzing the various actors within the chain.

The report is divided into a number of sections, which examine the roles and activities of various actors. The role of the carrier is being examined on pages 9 to 12. In the maritime chain of transportation the most important carrier is the shipping company or shipping operators, which provide the actual transportation from port A to port B. Many shipping companies have, however, also integrated backwards and are increasingly engaged in port operations and land based transportation. So even if the inland providers of transportation – railways, trucks, barges and other haulage providers – are not exclusive to the maritime chain of transportation, they are briefly mentioned in the section about agents of affreightment.

The subsequent sections focus on the role of the (independent) third parties in the maritime chain of transportation. Page 13 offers a brief introduction to the independent third parties, while page 14 examines the link between the consignor and the shipping company. Pages 14 to 19 examine the agents of affreightment in liner shipping – the freight forwarder and the liner agent. Pages 20 to 23 examine the role of the chartering broker that connects the consignor and the carrier(s) in tramp shipping. The chartering broker is furthermore engaged in the distribution of assets (ships) among ship operators, which is being examined on pages 24 to 25. This section also examines the role of the purchase and sales broker. Pages 26 to31 examine the role of the ports in the maritime chain of transportation. This includes the port and terminal operators and the port agents. Finally, pages 32 to 34 examine the role of third party ship management companies. The report is concluded with a brief summary on page 35.

THE CARRIER: THE SHIPPING COMPANY OR SHIP OPERATOR



THE CARRIER: THE SHIPPING COMPANY OR SHIP OPERATOR

As the main carrier of goods from port A to port B, the shipping company or ship operator is a key actor in the maritime chain of transportation. The shipping company adds value to the customer/consignor by transporting his goods from areas with excess supply to areas with excess demand.

The organization of a shipping company may take many different forms depending on size, strategy, and sector. In earlier times, the shipping company would often own the ships. Today, a ship operator may charter in all the tonnage or part of it. Ship owners, on the other hand, may be banks or other financial institutions, which are not usually considered as core actors in the maritime sector.

This section examines the responsibilities of the various departments in a shipping company. Although there is no standard shipping organization, a shipping company will usually have a central board of management with a general secretariat attached to it. The management oversees a number of separate divisions and departments, which typically includes a commercial division, an operations department, a technical division, an administrative department, a financial and accounting department, and a legal claims and insurance department. The responsibilities of the various departments may vary from company to company, and several activities that used to be performed in-house may be outsourced to independent third parties. (Sornn-Friese, 2010; Sornn-Friese & Hansen, 2012; Lagoudis et al., 2004; Lyridis et al., 2005; Iolcos, 2015).

The board of management is responsible for the development and implementation of the company strategy, corporate communication, everyday management, and company organization. The board is headed by a Chief Executive Officer (CEO). Top management often also includes an executive vice president, who is often the Chief Financial Officer (CFO), and a number of senior vice presidents and managing directors, who are generally the heads of the various departments in the company. The top management reports to a board of directors, which is responsible for the overall strategic development, in close cooperation with the CEO and CFO. Top management usually has a corporate secretariat, which is responsible for coordinating and supervising the other departments and maintaining investor relations (Sornn-Friese & Hansen, 2012).

The commercial division is the business generator of the company. Diversified shipping companies will usually have separate departments for liners, tankers, and dry cargo operations. In tramp shipping (usually dry bulk or wet bulk operations), most contracts are spot market voyage charters, which are handled by a chartering department. The chartering department usually operates through independent shipbrokers that connect them with potential customers. In this process, the chartering team tries to locate the most suitable business for the vessels and negotiate the best hire rates and terms for their disposal. In some cases, the department may also be responsible for the purchase and sale of ships (Lagoudis et al., 2004; Iolcos, 2015). In liner shipping, it is usually a network of local branch offices or (independent) liner agents situated in key locations that are responsible for marketing, booking of cargo, arranging transportation to and from the port etc.

The operations department is often part of the commercial division. The department is responsible for the daily operations and provides solutions to any potential problem that may arise. In doing this, the department has an important role as coordinator between the master of the vessel, the various departments in the company, and the independent agents. The department will provide information on routes, charts, bunkers provisions status, etc. and will often also be responsible for monitoring the fleet performance (Lagoudis et al., 2004; Iolcos, 2015).

The technical division generally encompasses a marine department and a technical department. The marine department is responsible for crewing and daily maintenance. The department is furthermore responsible for the running certification, evaluation, assessment, and administration of the crew. The technical department is responsible for the technical operation of the ships including ship surveying, repair and maintenance of propulsion systems, boilers, cranes, pumps, and other mechanical and electrical systems. The technical department may also provide inspectors to supervise dry-dockings and other repairs. The technical department is usually also responsible for the relationship with the classification societies and the renewal of all ship certificates whenever necessary. This also includes compliance with various conventions and legal demands. The technical department usually monitors the inventories of spares and stores, the chemical testing of bunkers and lubricants, and the selection and dispatch of specialized teams on board to carry out repairs. It is also responsible for reviewing technical reports and appraising the overall performance of the engines. Finally, the technical department can provide the necessary expertise on technical conditions with regard to shipbuilding, purchase, and sales. The department may thus deploy superintendents at shipyards that build new ships for the company. In some cases, the technical division may be charged with the safety of the ships and their crew members, by making sure that all necessary safety items are provided on a regular and scheduled basis, and by upholding a quality control system using the International Safety Management (ISM) Code (Iolcos, 2015). In the past decades, the responsibilities of the technical division have increasingly been outsourced to external ship management companies.

The purchase and stores department may be a part of the technical division or it may exist as an individual department. It is charged with the task of supplying the vessels with the necessary spares, stores, paints, lubricants, chemicals, bunkers, etc. The department is usually responsible for negotiating the purchasing prices and terms with the company's major suppliers (Iolcos, 2015).

The accounting and finance department will handle all the financial transactions of the company. The department manages all available financial resources, monitors the inflows and outflows, schedules payments to suppliers, shipyards, agents, etc. It monitors the fiscal activities of the company and is responsible for seeking (and carrying through) the necessary funding for these activities, be it traditional bank financing or alternative sources. The department is responsible for maintaining and promoting the company’s relations with banks, investment firms, and other financial market participants. It manages, allocates, and invests the company’s cash reserves, working capital and other assets, and suggests appropriate alternatives. Furthermore, it evaluates the financial viability of prospective investments of the company’s clients and keeps up with the progress of the existing ones. It oversees the repayment of the company's loan obligations and taxes. Regular accounting reports are prepared for the company, the departments, and for each ship. The department is also engaged in formulating the company’s annual budget and budget projections for the coming years. The CFO – which is head of the department – is normally part of the top management and, through him, the department keeps the top management informed on the financial situation (Sornn-Friese & Hansen, 2012; Iolcos, 2015).

The legal claims and marine insurance department covers all legal matters for the company. Among the main functions can be mentioned contracts for new buildings, company law, national/international taxes, purchase/sale of ships. The company lawyer is often also on the managing director's staff, and/or secretary to the board of directors.

The legal claims and marine insurance department is responsible for the process of insuring ships, cargos, and crew members. This process entails the careful examination of all insurance policies and the relevant invoices, as well as the monitoring of the strict adherence to their clauses. Furthermore, it is responsible for advising the top management about the annual insurance costs per vessel and per fleet, and keeping the various departments up-to-date about the effects of possible moves that may not be covered by the insurance.

Legal claims and marine insurance is furthermore responsible for all the necessary actions that need to be taken in cases of claims arising from hull damage, damaged machinery, cargo claims, etc. The department also follows up on claims that may arise from stevedoring damages, stowaways, injuries, accidents, etc. These claim adjustments cause considerable work, particularly within liner shipping. For this purpose, it is in close cooperation with all the other departments and especially the technical and operations departments. It is also customary for shipping companies around the world to outsource certain tasks to external legal offices and professional P&I Clubs (Protection and Indemnity Clubs), which provide third party liability-cover for risks not recoverable under standard marine insurance policies (Sornn-Friese & Hansen, 2012; Iolcos, 2015). P&I Clubs are mutual insurance associations that provide risk pooling,

information, and representation for its members. Whereas a marine insurance company will report to its shareholders, a P&I Club reports only to its members. Originally, P&I Clubs were only for ship owners and operators, but in recent years, freight forwarders and warehouse operators have been able to join.

In order to ensure safety at sea, prevent human injuries, and avoid damage to ships and the environment, all shipping companies are required to follow a set of global standards, which are specified in the International Convention for the Safety of Life at Sea (SOLAS). The revised 1978 STCV convention (Standards of Training, Certification and Watchkeeping) provides the means for developing a safety culture through the education and training of seafarers. In 1998 the International Safety Management Code (ISM) was adopted by the SOLAS treaty, in order to develop a culture with safety and environmental ethics throughout the shipping company. Under these regulations, a shipping company is required to enforce and verify a safety management system, which provides the necessary procedures and guidelines for the safe navigation of each vessel. These safety issues have traditionally been handled by the technical department, but shipping companies have increasingly begun to establish separate HSSEQ departments responsible for issues relating to health, safety, security, environment, and quality (Sornn-Friese & Hansen, 2012).

It has become customary for many larger shipping companies to have a professional R&D department, which is responsible for complex research tasks such as market analysis, strategies, technological developments, and opportunities in relation to the company's assets and activities. R&D projects cover a wide range of activities at sea and ashore in accountability, financial control, information and communication systems, automation, cargo handling and other operational systems, maintenance, etc.

The Administrative department is responsible for the main organization, for personnel (HR), internal services, and internal control. The importance of a sensible employment policy, combined with systematic training, has been given increased emphasis. Internal control covers the traditional auditing as well as the more detailed control work required to ensure that the organization works according to the company policy.

The responsibilities of the IT department include finding and/or developing, evaluating, and maintaining the operators' IT systems. Especially within liner shipping, IT solutions are vital for tracking, tracing and securing the timely transport of each individual container. In the past decade, most liner shipping operators have furthermore given customers access to online track-and-trace solutions. And several liner operators have developed joint IT systems with key clients in order to provide a better service (and raise the switching costs). Moreover, on a day-to-day basis, the department deals with the electronic data processing functions of the company, the maintenance and upgrading/updating of the company's intranet, the support of all users, and the monitoring of the proper functioning of the internal and external communications. Finally, the IT Department is responsible for suggesting the appropriate specifications for all computer-related equipment, both for the head offices and for the vessels (Iolcos, 2015).

Finally, many shipping companies may have an Information & Communication department, which manages all internal and external communication. It basically coordinates and controls all messages to employees, media, stakeholders and the general public. The department secures a clear communication strategy, which helps the company to explain its mission and combine its many visions and values.

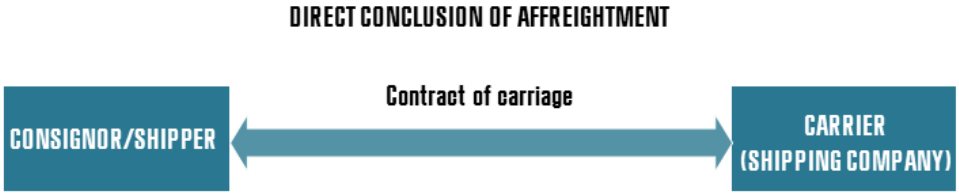
THE ROLE OF (INDEPENDENT) THIRD PARTIES

Even if the shipping company or shipping operator may arrange and carry out the entire transportation in-house, most transactions will involve a number of (independent) third parties. The consignor/shipper (the cargo holder) may hire a freight forwarder or a chartering broker to arrange the transportation and most shipping companies will have a network of (independent) business connections, such as shipbrokers, port agents, stevedores, ship management companies, etc. Whether to integrate or outsource a service depends on the value added by the third parties compared to the transaction costs. Transaction costs include (1) search and information costs (searching for and finding the provider with the lowest costs), (2) bargaining costs (agreeing on the transaction) and (3) enforcement costs (monitoring and enforcing implementation of the contract). Transaction cost economics suggests that the costs and difficulties associated with market transactions sometimes favor in-house production and sometimes outsourcing. An intermediate mechanism called hybrid or relational, between these two extremes, has also emerged (Williamson, 1979, 1981 & 1985). For most ship operators this is especially the case with regard to ship management services. The following sections will examine how a number of external third parties provide value added services in the maritime chain of transportation.

Foto: Tao Lytzen

THE LINK BETWEEN THE CONSIGNOR AND THE SHIPPING COMPANY

The link between the consignor/shipper (the cargo holder) and the carrier (the shipping company) can be established in several ways. The first and most simple conclusion of affreightment is a contract of carriage concluded directly between the buyer and seller of transportation. This direct type of contact is usually seen when the consignor is a large company with an in-house logistics departments to organize the transportation. In some cases, the consignor may even operate its own fleet of ships and thus have a direct link to the shipping company. One example of this is the Brazilian mining company Vale, which operates its own fleet of bulk carriers. Another example is the American food company Chiquita, which, until 2007, operated its own a fleet of reefers. The carrier (the shipping company) is usually represented by a sales department (in liner shipping) or a chartering department (in tramp shipping).



Source: Schramm, 2012

The remaining conclusions of affreightment, however, involve one or more independent agents acting as intermediaries between the consignor and the carrier. These include (1) freight forwarders, (2) liner agents, and (3) chartering broker.

The agents of affreightment are usually specialized in specific markets, such as liner shipping, dry bulk or wet bulk, etc. (Houtved, 2005). In order to identify how the agents add value, it is useful to distinguish between two main types of shipping: Liner shipping and tramp shipping

AGENTS OF AFFREIGHTMENT IN LINER SHIPPING

Liner shipping companies provide regular services between specified ports according to time-tables and prices advertised well in advance. The cargo is mainly carried by container liner companies, either in containers or as break bulk. Break bulk is non-containerized general cargo, which is loaded individually (cars, paper reels, construction machinery, etc.). Goods carried by liner operators are usually of higher value than the cargos hauled in tramps and are charged higher freight rates. The container lines will furthermore carry a vast number of different goods, whereas bulk operators usually carry one single commodity (Stopford, 2009; Houtved, 2005).

In liner shipping the transaction between the consignor/shipper and the carrier usually involves (1) freight forwarders and/or (2) liner agents.

THE FREIGHT FORWARDER

The freight forwarder represents the consignor/shipper and takes on the responsibility of transporting the goods on his behalf. In many cases, the freight forwarder only acts as a "contracting carrier" that procures the actual transportation to one or several "performing carriers". He basically arranges the transportation on behalf of his agent by concluding affreightment contracts with the carrier(s).

The more difficult the carriage, or the more means of transportation are involved, the likelier it is that the consignor will engage a forwarder. The forwarders main assets are (1) a wide network of shippers and carriers, and (2) knowhow on how to organize carriage of goods by land, sea, and air within a certain country or across borders. As the freight forwarder usually doesn't operate any vessels, he is often referred to as a NVO (non-vessel operator), NVOC (non-vessel owning carrier), or NVOCC (non-vessel operating common carrier) (Schramm, 2012; Klippel, 2000; Branch, 2000).

CONCLUSION OF AFFREIGHTMENT VIA FREIGHT FORWARDER

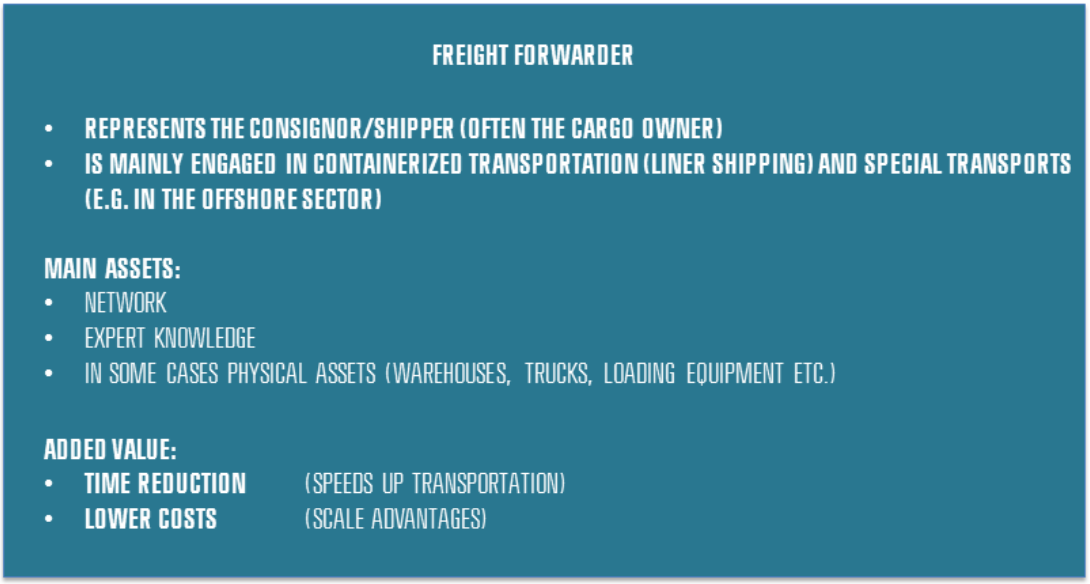
Source: Schramm, 2012

The freight forwarder performs a number of services. These include: (1) advising the customer on the quickest and cheapest way of transportation; (2) solving potential packing problems; (3) taking care of customs clearance, trade regulations, letter of credit instructions and other documentation; (4) deciding on the most suitable carrier and concluding contracts of affreightment on behalf of the consignor; (5) providing insurance coverage during the transportation; (6) giving advice on warehousing and distribution; (7) supervising the movement of goods; (8) providing credit; and (9) performing in-house transportation services (Schramm, 2012).

The consignor employs the freight forwarder to perform one or more of these services, because the rise in costs is more than compensated by the value of the forwarders service in reducing transaction costs. The forwarder is competitive as long as the fee is lower than the consignors' cost of arranging the transportation himself. The business is thus based on the freight forwarder offering value added services. The forwarder basically adds value to the consignor by: (1) speeding up the transportation, and (2) lowering the costs of transportation.

The freight forwarders' network and his extensive knowledge of the freight rates and agents mean that the broker can provide a value added service, by making routing recommendations and securing appropriate terms. In the customs clearing process, the forwarder adds value by speeding up the cargo movements across borders, as the forwarder usually has more experience with customs than the consignor. The forwarder takes care of all paperwork and documentation on behalf of the consignor, including export and import declarations, delivery permits, commercial invoices, consular invoices, inspection certificates, declarations of origin, etc. (Schramm, 2012).

The affreightment function is the main function of the freight forwarder. It usually includes booking of cargo space or chartering of vessels, arrangement for inland transportation, stevedoring, and goods handling including loading, unloading, reloading, temporary storage of goods, etc. As the forwarder organizes the transportation of a large amount of goods, he can combine several smaller shipments or even make joint shipments with other forwarders. This adds value to the consignor by reducing freight expenses and the amount of paperwork for several shipments (Schramm, 2012).



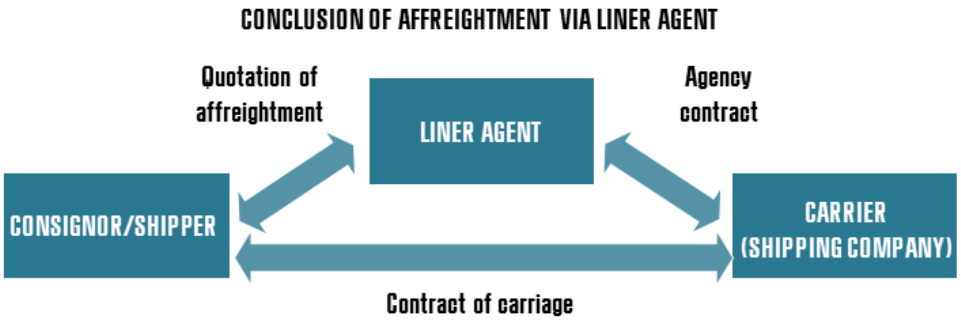
Services like stevedoring, warehousing, and inland transportation are increasingly being carried out by the freight forwarder, who thereby captures a larger share of the value. In connection with these activities, the freight forwarders have begun offering additional services such as quality inspection, sample drawings, cleaning, drying, pest control, and even assembly of goods on behalf of the customer. Many forwarders also provide additional insurances of the goods during the shipment. There is always some liability insurance coverage up to a certain limit, but the forwarder usually holds an open insurance policy contract with a cargo insurance company, which allows him to conclude insurance contracts on behalf of the insurer. The forwarder also performs a quasi-banking function, as he pays freight and handling charges, fees, taxes, etc. on behalf of the consignor in order to speed up the process (Schramm, 2012).

The Liner Agent

Where the freight forwarder usually represents the consignor/shipper, the liner agent represents the carrier (shipping company) within a certain geographical area. The liner agent's job is basically to approach the consignor and conclude contracts of affreightment in the name of his principal with the carrier paying him for his work (Schramm, 2012; Interview with Stahlschmidt). He can either be an independent intermediary connected to the carrier by an agency contract or be an integrated part of the shipping company. The number of independent liner agents has been drastically reduced in the past two decades as globalization, containerization, volume growth, and fierce competition has made it necessary for most global shipping lines to establish in-house branch offices in many countries (Interview with Stahlschmidt). The Danish shipping company A.P. Møller Mærsk is a special case in this regard, as it insourced these activities much earlier than most of their competitors.

The liner agents' main assets are (1) local and regional network and (2) expert knowledge on local matters and on the shipping line. Several services provided by the liner agents overlap that of the freight forwarder. Where the freight forwarder, however, (usually) represents the consignor/shipper the liner agent always represents the carrier.

The liner agent (or branch office if part of the shipping line) provides fours main services: (1) sales and marketing, (2) customer services, (3) operations, and (4) business administration. In several cases, the liner agent will also do the work which is otherwise carried out by a port agent (Gorton et al., 1995).



Source: Schramm, 2012

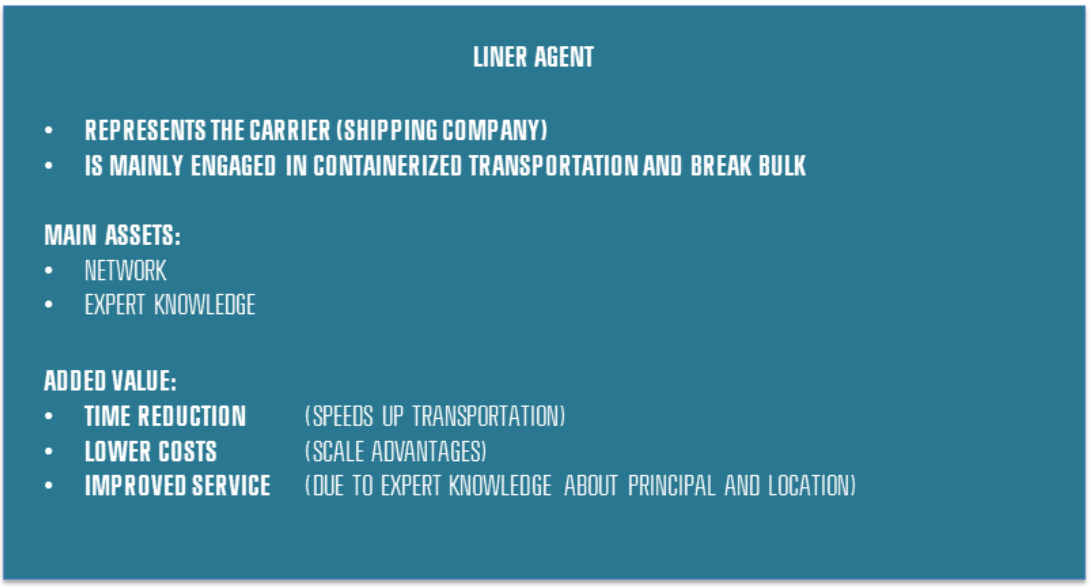
Sales and marketing basically involves marketing the principal in order to secure goods for his ships (Houtved, 2005). Apart from sales and marketing, it includes promotion of e-business, key account management, contract, and tender management. In some cases, it also involves pricing even if most payments are based on fixed tariffs. By performing these services, the agent provides a value added service to the carrier by having a better local network and connections to local shippers and forwarders.

Customer services include cargo booking and collecting payment for the carriage, documentation, invoicing, claims handling, etc. The customer is often a freight forwarder, who concludes affreightment contracts with the liner agent on behalf of the consignor. In the booking process, the liner agent often provides advice for the customer on the best way of packing and transporting the goods. This provides a value added service to the customer, as the agent has expert knowledge on how the goods are being shipped and the customer is responsible for the packing of the goods. Many container operators have entered into strategic alliances with vessel sharing or slot sharing agreements. The latter enables the liner agents to offer cargo space on a particular route, but not necessarily on their own vessels (Schramm, 2012).

Operations include arrangement of inland transportation, container logistics, warehouse logistics, port operations, and sub supplier contract management. Just as freight forwarders may arrange several types of transportation, several container lines are also offering combined transport. This may include door-to-door, door-to-pier, pier-to-door, and pier-to-pier transportation. When the consignor hires a freight forwarder or a liner agent to arrange the inland haulage, it is usually because it adds value to the consignor, either by speeding up the cargo movement and/or by arranging the transportation at a lower price. In this process, it is taken into consideration if it is dangerous goods, odd sized goods, or goods that have other special requirements (Houtved, 2005). At a general level, this secures a more efficient transportation and thus a better use of the tonnage.

If the liner agent arranges the inland transportation it is referred to as “carrier haulage”. The shipping line may perform the transportation on its own trucks or contract it to a third party haulage provider, barge operator, railway company, etc. If the inland transportation is organized by the consignor/shipper, the consignee (the buyer of the shipment), or a freight forwarder it is called “merchant haulage” (Schramm, 2012). Combinations of carrier and merchant haulage are also an option. For example, one part of the inland move can be arranged by the carrier by means of river barge and the other part can be arranged by the merchant - one can imagine many different arrangements. One important factor which influences the choice between merchant or carrier haulage is the day-to-day equipment imbalance situation. Monitoring the equipment imbalances of each individual geographical area is a very important tool to reduce the cost and support competitiveness.

Finally, the business administration tasks may include controlling, reporting, finances, IT-support and HR management. Before the development of track-and –trace systems for the customers, the liner agent would be responsible for monitoring the progress of the goods as a service to the shipper and consignee. Today, most shipping lines offer a wide range of e-business services to their customers and subcontractors. These include bilateral data interchange, which offers direct data exchange between the customer and the shipping line, automated track and trace data, online services on tariffs, schedules, booking, shipping instructions, shipping documents, invoicing facilities, shipping statistics, and information relating to specific containers and cargo types (Interview with Stahlschmidt).




2S
2P

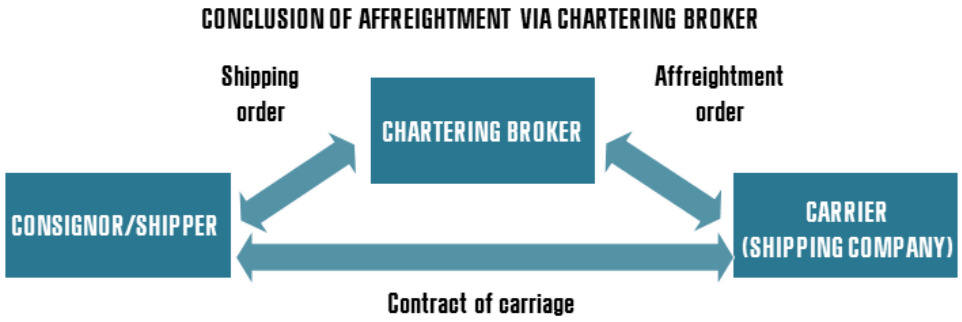
20 AGENTS OF AFFREIGHTMENT IN TRAMP SHIPPING

Tramp shipping differs from liner shipping in several ways. Tramp operators are often referred to as the "taxis of the seas". They have no fixed routes or schedules but are contract carriers, who are hired on the spot market to transport cargo from any port to any port. The cargo usually consists of a large quantity of a single commodity; mainly dry bulk (ore, coal, fertilizer, grain etc.) carried in bulk carriers or wet bulk (usually crude oil, petrochemicals, gasoline etc.) carried in tankers. The cargo is thus usually of lower value than the (containerized) cargo carried by the liner companies. The terms of each individual charter is determined by negotiations between the consignor/shipper and the carrier, and basically reflects the immediate balance between supply and demand for specific types of ships (tankers, bulk carriers etc.).

It may rightly be argued that dry bulk and wet bulk are very different in nature. The latter can even be broken down into more specialized types of shipping e.g. crude oil tankers, product tankers, and chemical tankers each carrying different types of cargo. In either case, however, the operator of a tramp ship must negotiate separate contracts for each employment of his vessel. In tramp shipping, it is usually an independent chartering broker that matches the consignor/shipper and the carrier. Because of the differences in the various types of shipping, many brokers will usually be specialized within one segment (Stopford, 2009).

THE CHARTERING BROKER

The chartering broker is used in spot markets as a match-maker between the consignor/shipper and the shipping company. The broker performs four types of services: (1) searching for potential partners, (2) matching the agents, (3) assisting in the bargaining process between these agents and (4) taking care of the formalities in the contract. For the service the broker charges a commission – usually 1,25 % of the agreed freight rate (Strandenes, 2000; Interview with Mortensen & Rosenkjær).



Source: Schramm, 2012

The cargo holder (consignors/shipper) and the ship owners (carriers) employ the brokers, because the rise in costs is more than compensated by the value of the brokers' service in reducing transaction costs. The broker is competitive as long as the fee is lower than the agents cost of searching and matching directly. The business is thus based on the chartering broker offering value added services (Strandenes, 2000).

In the short term spot markets the chartering broker will usually arrange either a (1) voyage charter or (2) a trip time charter. Most contracts in dry bulk and liquid bulk are voyage charters (Lagoudis et al., 2004). In a voyage charter, the ship owner agrees to transport a cargo from one port to another. The charterer will usually pay a per-ton-rate, which may be adjusted in case of delays (demurrage) or time-savings (despatch). In a trip time charter, the charterer rents the ship for a specified route and in a specific period of time. The charterer will pay the shipowner a per day rate. In both cases the

shipping company will crew the ship and carry all expenses (Houtved, 2005; Krishna, 2012; Stopford, 2009). The freight rate represents the cost of providing seaborne transportation today and thus the continuous balance between supply and demand for shipping services (Alizadeh & Nomikos 2009; Beenstock & Vergottis, 1993).

TYPES OF CHARTERS

TYPE	VOYAGE CHARTER	TRIP-TIME CHARTER	CONTRACT OF AFFREIGHTMENT	TIME CHARTER	BAREBOAT CHARTER
MASTER & CREW	APPOINTED AND DIRECTED BY OWNER	APPOINTED AND DIRECTED BY OWNER	APPOINTED AND DIRECTED BY OWNER	APPOINTED AND DIRECTED BY CHARTERER	APPOINTED AND DIRECTED BY CHARTERER
PAYMENT	PER TON RATE	PER DAY RATE	PER TON RATE	PER DAY RATE	PER DAY RATE
DURATION	SINGLE VOYAGE	A SPECIFIED PERIOD OF TIME ON A SPECIFIED ROUTE	TRANSPORTATION OF A SPECIFIED AMOUNT OF CARGO OR A CERTAIN NUMBER OF TRANSPORTS	A SPECIFIED PERIOD OF TIME	A SPECIFIED PERIOD OF TIME
EXPENSES ARE CARRIED BY	OWNER	OWNER	OWNER	OWNER	CHARTERER

Source: Developed from Stopford (2009)

For medium or long term charters, the chartering broker may arrange (3) a contract of affreightment or (4) a time charter. A contract of affreightment is almost similar to the voyage charter (payment per ton) but includes the transportation of a certain amount of cargo or a certain number of transports, within a given period of time. These contracts are mainly used in the major dry bulk cargoes of iron ore and coal. The main customers are steel mills in Europe and the Far East (Stopford, 2009). The time charter is basically the same as the trip time charter (payment per day) except that the charterer can apply the ship anywhere he may wish. In both cases, the shipping company will crew the ship and carry all expenses (Houtved, 2005; Krishna, 2012; Stopford, 2009). Time chartering to industrial clients is a prime source of revenue for many ship owners. For a medium or long term charter, the freight rates represent the expected long term supply and demand for shipping (Beenstock & Vergottis, 1993; Stopford, 2009).

The chartering brokers' main asset, and thus the basis for the added value, is (1) his network and (2) his knowledge on the agents and the market situation. The agents – the shippers and carriers – only enter the chartering market when they seek a partner, while the chartering broker is in the market every day. This means that the broker has a wider network and better information on agents and freight rates. The vast number of trades furthermore makes it more profitable for the broker to invest in market research, as it may be used as basis for a larger number of deals (Strandenes, 2000; Interview with Mortensen & Rosenkjær).

The search for potential partners is based on the chartering brokers' network of contacts in the market and knowledge about the operations of ship owners and charterers. The wider the network the faster the broker may be able to find the best available match. Several chartering brokers have joined the Baltic Exchange, which has been the marketplace since the 18th century. Today, the Baltic Exchange still accounts for app. 30-40% of all dry bulk chartering (Strandenes, 2000).

The chartering broker operates via online systems, which provide vessel information and help sort emails from the agents. The development of the internet and online systems has resulted in several changes within the business. First of all, it has

rapidly speeded up the brokering process. A decade ago, several brokers could be involved in the same trade, but the increased transaction speed means that fewer brokers are involved in a trade today. The decreased time lab for each trade also means that the individual employee has become more important, as he or she needs to add value to each deal. There is less time to guide unexperienced employees and it has become more difficult to control the risks (Interview with Mortensen & Rosenkjær).

The internet, however, also poses a potential threat to the search function, as the cost of collecting information is drastically reduced. The broker, however, still represents an independent opinion on the quality of the service and not just a reflection of the agent's self-assessment. The chartering broker, thus, tends to make more efficient searches than the agents. This means that the search time is reduced and that more potential partners are found. The brokers' knowledge about the agents furthermore means that brokers can make more efficient matches. This speeds up the process towards an agreement, by avoiding spending time on less probable matches. This not only reduces searching costs but also minimize the waiting time for the vessels. Reductions in waiting time increase the supply of transport capacity by exploiting the existing capacity more efficiently (Strandenes, 2000; Gorton et al., 1995; Houtved, 2005).

When the deal is closed, it will usually pass from the chartering department to the operations department, which takes care of post-fixture issues. If it is a key customer, however, the charterer may also take care of the post fixture issues. This includes handling of contracts and documentation, follow ups and reminders, advice, handling of claims, out standings, disputes, etc. Legal issues can be solved in house or be outsourced to a legal firm, depending on the complexity of the case and the legal capabilities of the broker (Interview with Mortensen & Rosenkjær).

The chartering broker usually has close connections to certain shipping companies and cargo holders. In many cases, the broker will be on the company's "broker panel" with four or five other preferred brokers. Some brokers may even be "house brokers" with exclusive rights to fix vessels for a ship operator or a charterer. Exclusive links to a broker may, however, influence bargaining power. The broker of a shipping company might thus favor the charterer, in order to attract him to the deal and bias the resulting freight rate away from the shipping company. The company broker, on the other hand, also serves as a guarantor of the quality offered by the ship operator. His extensive knowledge of his client means that he can often make more efficient matches and thus reduce search time. Having a house broker may thus represent a trade-off between briefer search periods and lower freight rates (Strandenes, 2000; Interview with Mortensen & Rosenkjær).

In the wet bulk and dry bulk spot markets, freight rates are openly quoted. The value of a brief search period may thus be greater than the cost of fixing a vessel at the lower range of the ongoing freight rates. This means that it may be more tempting for the agents to have an exclusive broker (or a panel of e.g. five brokers) in markets with ample information on the freight level (Strandenes, 2000).

Finally, the chartering broker acts as an important advisor for the market agents. Some brokers give input to the Baltic Exchange Index. Some brokers share information on the market development with their clients. The brokers also approach shipping companies with information on upcoming deals. Thus, by informing the market agents' about expected freight rates, the charterer makes the price expectation of the consignor and ship operator more compatible. As the brokers' commission is usually positively related to the contract price, however, the broker will usually try to increase the price until the probability of a successful sale falls low enough to counteract the rise in commission (Yaves, 1992; Tvedt, 1987; Strandenes, 2000).

CHARTERING BROKER

- **FORMALLY INDEPENDENT OF CARGO HOLDER AND CARRIER**
- **IS ENGAGED IN SPOT MARKET TRANSACTIONS MAINLY IN DRY BULK AND WET BULK**

MAIN ASSETS:
- NETWORK
- EXPERT KNOWLEDGE

ADDED VALUE:
- **TIME REDUCTION** (SPEEDS UP THE SEARCH AND MATCH PROCESS)
- **IMPROVED SERVICE** (MORE LIKELY TO MATCH EXPECTATIONS OF SHIPPER AND CARRIER)
  (PROVIDE MARKET INFORMATION TO SHIPPERS AND CARRIERS)

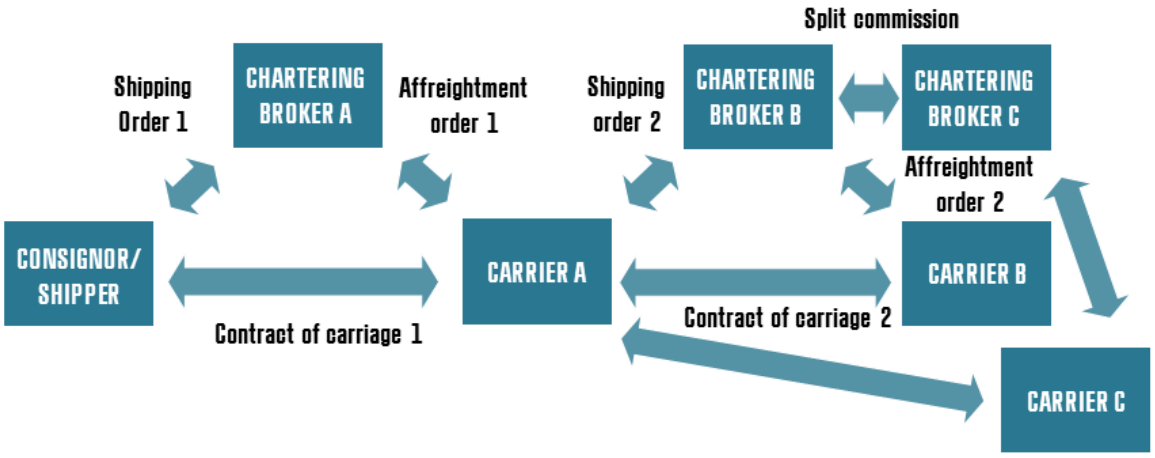
As already mentioned, the link between the consignor and the carrier may involve several brokers and shipping companies. The following example illustrates how a deal in the spot market can be concluded in a number of ways:

The consignor has a cargo for transportation in the spot market. He contacts chartering broker A. Chartering broker A will offer the transport to carrier A and carrier B. Carrier A makes the lowest bid and wins the order. If carrier A carries out the transportation the deal is done.

At the time of transportation, however, carrier A may not have any available ships in the right location. Carrier A (who is now the cargo holder) may ask chartering broker B to charter in a ship for the journey. The chartering broker may have connections to carrier B, who has a ship available in the right location. He charters the ship in for the trip. So even if carrier B lost the initial bid, he may actually end up performing the actual carriage.

Chartering broker B may, however, not be able to find a carrier. He may, however, have connections to chartering broker C, who has contact to Carrier C. Carrier C makes the transportation and the commission is split between broker B and broker C (Interview with Mortensen & Rosenkjær). These are just a few examples. The transportation can be arranged in several other ways and with several actors involved.

LINK BETWEEN SHIPPER AND CARRIER



THE DISTRIBUTION OF ASSETS

The activities of the chartering broker are not limited to concluding contracts between cargo owners/cargo holders and carriers in the spot market. The charterer may also be a party without a cargo (often a shipping operator), who takes a vessel on charter for a specified period of time – either in order to carry cargo at a profit above the hire rate or even to re-let it to other charterers at an even higher rate. The chartering broker is thus also involved in the distribution of assets (ships) among non-cargo holders.

Apart from chartering arrangements, the distribution of assets also include purchase and sale of ships. Purchase and sale activities are performed by P&S (purchase and sale) brokers, but some chartering brokers may also be engaged in purchase and sale activities. The purchase and sale of ships is highly speculative. The demand for tonnage is very volatile and the market for shipbuilding is slow to adjust. This means that the price of a ship in the second hand market can increase (and fall) by several 100 % - and even rise above the price of a similar new building. Asset play (speculation in ships) is widespread within the shipping sector and a shipping company can often make more money from buying and selling ships at the right time than from transporting goods or commodities.

In the market for purchase and sale, it is important to distinguish between (1) the newbuilding market, (2) the second hand marke,t and (3) the market for scrapping. In the newbuilding market, the main actors are the shipyards providing new tonnage and the investors who want to purchase the ships. The investors may be a shipping company, an investment bank, or even the shipyard itself. In the second hand market, the buyers and sellers may also be shipping companies or non-maritime investors including banks, pension funds, etc. The final actor in the market for purchase and sale of ships is the demolition yard, which is responsible for scrapping old ships (Stopford, 2009). These actors are connected by chartering brokers and P&S brokers, who are examined in the following section.

CHARTERING BROKERS AND P&S BROKERS

Chartering brokers and P&S brokers engaged in the distribution of assets among non-cargo holders basically perform the same value added activities as the chartering brokers operating in the spot market for transportation of commodities: These activities include (1) searching, (2) matching, (3) assisting in the bargaining process between these agents, and (4) taking care of the formalities in the contract.

In the spot market, however, the use of chartering brokers is mainly based on economies in market monitoring and information gathering. In these markets, it becomes expensive for an agent to invest in market monitoring in view of the limited profits gained on the individual transaction. Increased monitoring will usually not result in more favorable prices but in shorter waiting times between fixtures. In long term assets distribution, and especially in relation to purchase and sale of second hand ships, the value added activity is more closely connected to the information on quality. The seller of a vessel has better information on the standards of that vessel than the potential buyer. It is thus a market with asymmetric information where the broker may act as a neutral expert (Biglaiser, 1993; Strandenes, 2000).

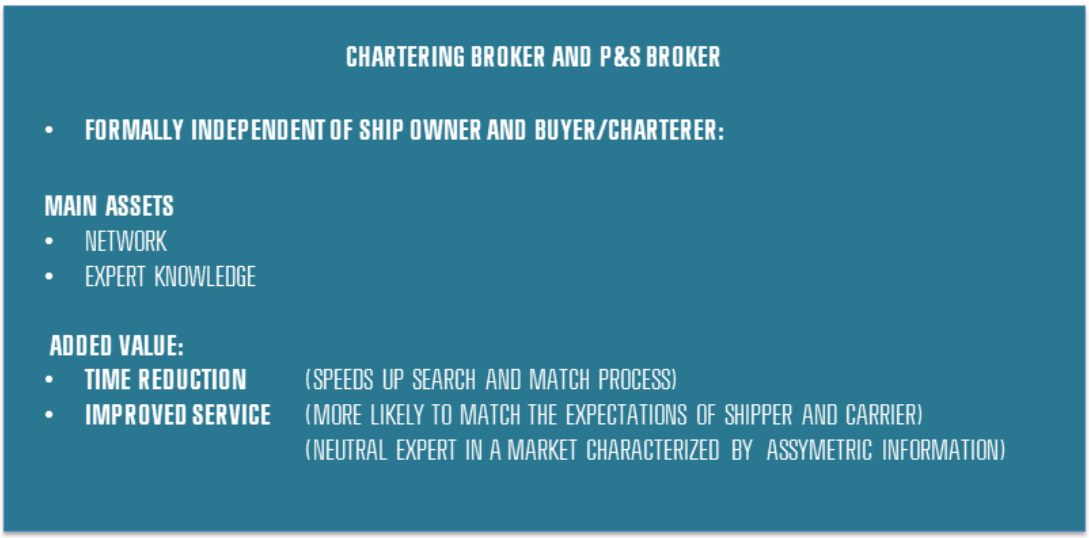
Chartered tonnage adds flexibility to a ship operator, as it allows for the fleet to be adjusted according to the shipping cycles. It may also be used if a shipping company wants to expand its fleet without investing in new ships. The charter agreements between non-cargo holders may include time charters and t/c pops (time charter with purchase options). Two additional types of charters are, however, also very common – the bareboat charter and the demise charter.

Bareboat charters are used when a ship operator wishes to supplement his fleet for a period of time without incurring the financial commitments of actual ownership, but at the same time having full control of the vessel. During a bareboat charter, the charterer rents the ship without crew for a certain period of time. The charterer will take over all of the

shipowner's functions except for the payment of capital cost. The charterer will thus have the commercial and technical responsibility for the vessel and will pay for maintenance, crew, insurance, etc. (Houtved, 2005; Krishna, 2012).

The demise charter is a form of bareboat charter in which the charter period may last for many years and end with the charterer acquiring the ship. The demise charter may thus be a form of hire-purchase from the ship owners, who may well have been a shipyard or a shipbuilder. Demise chartering is especially common in the tanker and bulk carrier segments (Nordic Shipping, 2015).

The type of charter depends on the business model of the individual charterer. Whereas a spot-market agreement between a cargo holder and a carrier mainly occur in bulk shipping, the chartering of tonnage by non-cargo holders applies to all shipping segments. In September 2015, the liner shipping operator A.P. Møller Mærsk had chartered in app. 43% of the tonnage, while the equivalent numbers for MSC and CMA CGM were 60 % and 67% respectively (Alphaliner).



THE PORT OPERATIONS PHASE

When the consignor and the carrier(s) have agreed on a contract of affreightment, the actual movement of the goods can commence. As mentioned previously, the transport from the production site to the port can be arranged and carried out by several actors including shippers, freight forwarders, liner agents, shipping companies, and inland carriers (trucks, trains, pipelines, conveyors etc.) depending on the cargo. The following sections will focus on how (1) ports and terminal operators, and (2) port agents add value in the maritime chain of transportation

Foto: Scanpix

PORTS AND TERMINAL OPERATORS

Ports and terminal operators are important actors in the maritime chain of transportation. Most ports are organized in specialized terminals for the different types of cargo. They include general cargo terminals, liquid bulk terminals, dry bulk terminals, car terminals, passenger terminals, and container terminals etc.

In the maritime chain of transportation, the ports secure efficient transfer of cargo from land-based to sea-based transportation and vice versa. Ports may be entirely public or entirely private ventures. Most ports, however, constitute a combination of public and private actors. In most ports, the public actors are responsible for the overall planning, facilitating, and regulating while private actors act as service providers, operators, and developers within this framework (World Bank, 2001).

The most important public actors are the port authorities, who act as the governing body of the port and usually are responsible for the overall development of the port. Port authorities usually manage the real estate within the port area and secure the upkeep of basic port infrastructure, such as berths, and access roads, etc. The flow of traffic, allocation of vessels to public berths, maritime safety, and protection of the marine environment are usually managed by a harbor master on behalf of the authorities (World Bank, 2001).

The private actors include terminal operators, stevedoring firms, cargo handling companies, tugboat operators, mooring service providers, etc. These companies pursue typical micro-economic objectives such as profit maximization, growth, and increased market share (World Bank, 2001).

The main private actors in the ports are the terminal operators. In the past decades, several major shipping operators have taken control of terminals in order to control more stages of the transport chain. This trend has mainly affected containerized operations where a number of carrier alliances have concluded long-term contracts for container terminals in major strategically located ports. Apart from the container lines, a number of global stevedore companies operate a large number of terminals all over the world. Their main objective is not to control the transport chain, but to make a profit by offering terminal services (World Bank, 2001).

Ports compete with other ports for market shares. Freight forwarders, shipping lines, and other agents of transportation will basically choose the port that offers the highest added value to their business. Which factors and services add value will vary from product to product and from activity to activity (Robinson, 2002; Talley & Ng, 2013; World Bank, 2001).

Based on information in the World Bank Port Reform Tool Kit (2001) and studies by Talley and Ng (2013), three value adding factors have been identified. These are (1) geographic attributes, (2) services, and (3) price performance ratio.

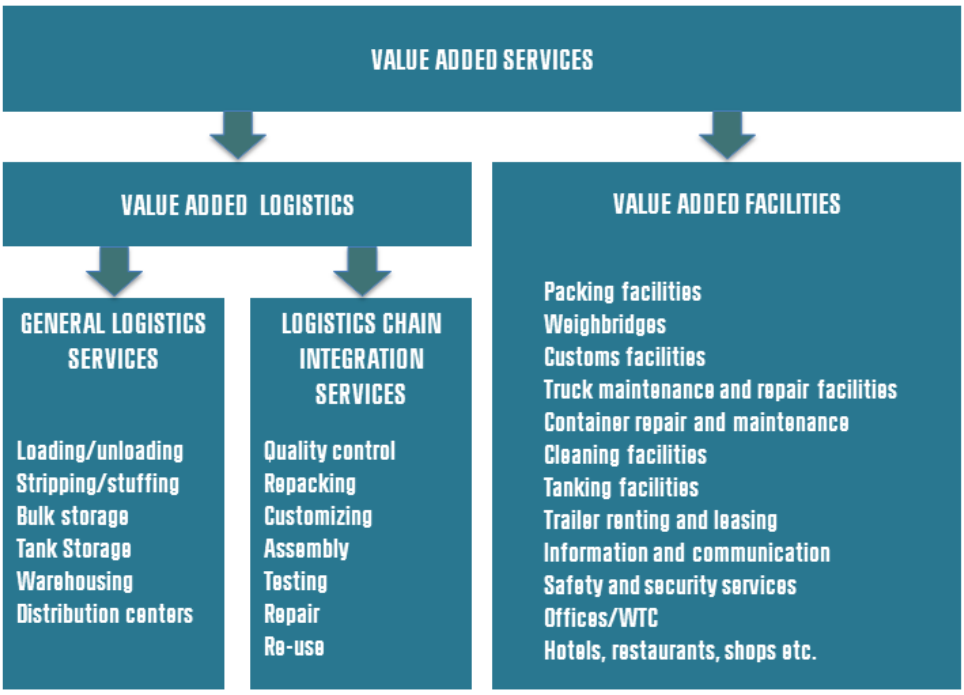
The geographic location of the port is an important value adding factor. The port location determines the distance to the port of arrival, the proximity to major maritime routes and production and/or consumption areas, and good hinterland connections (road, rail, pipeline or waterway). A short travelling distance between the port of departure and the port of arrival will save transportation time and lower operation costs for the carrier. Good hinterland connections and the proximity to major shipping routes influence the amount of goods being shipped through the port. A large volume of cargo throughput increases the opportunity for the carrier to achieve advantages of scale. For shippers a port with frequent ship calls and good hinterland connections will furthermore increase the speed of transportation and reduce the inventory costs because of less waiting time. Major ports may have a hinterland that overlaps that of other ports, which may lead to fierce competition for market shares (World Bank, 2001).

The second type of value added factors include the services which are offered in order to attract customers to the port. In the World Bank Port Reform Tool Kit (2001), the services have been divided into value added logistics and value added facilities. Value added logistics (VAL) have furthermore been divided into general logistics services (GLS) and logistics chain integration services (LCIS) (World Bank, 2001).

General Logistics Services include traditional logistic activities such as loading and unloading, stuffing and stripping, storage, warehousing, and distribution (World Bank, 2001). Beyond these traditional activities, however, more complex Logistics Chain Integration Services may be provided. Logistics service providers may take over part of the production chain that manufacturers don't consider their core business. This includes assembly, quality control, customizing and packing of goods, pest control, and after sales services. Containerized consumer goods (including electronics,

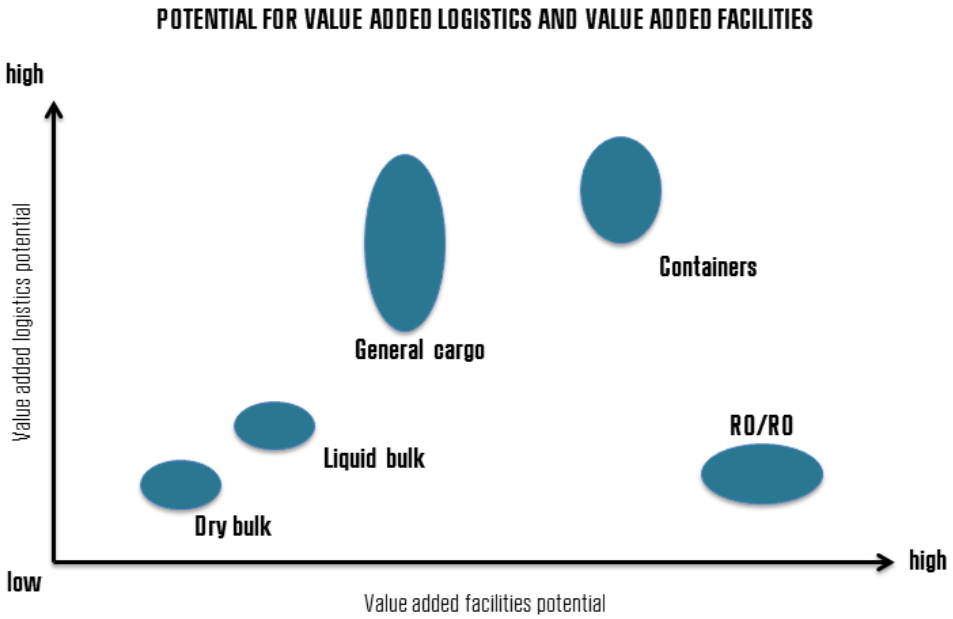
pharmaceutics, clothing, cosmetics and personal care products, food), machinery, and control engineering products have the highest potential to benefit from such services (World Bank, 2001).

VALUE ADDED SERVICES IN PORTS



Source: World Bank, 2001

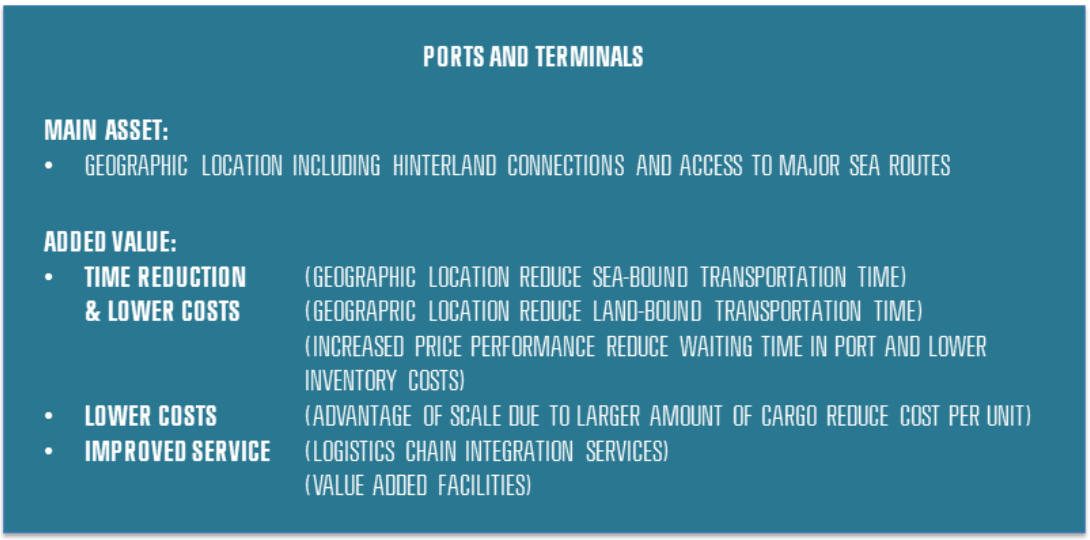
The second group of Value Added Services – the Value Added Facilities (VAF) - is very diverse. These types of activities cannot generally be assigned to a particular type of product or freight flow. In the World Bank Tool Kit Report (2001), the "VAF-potential" has been assessed by analyzing freight flows such as dry and liquid bulk, general cargo, containerized cargo, and RO/RO. A large container throughput can create the economic basis for establishing container repair facilities; handling vast quantities of chemicals requires port reception facilities; substantial RO/RO traffic may justify truck maintenance and repair shops, etc. (World Bank, 2001).



Source: World Bank, 2001

Containerized and general cargos typically have the highest VAL-potential. General Logistics Services and the Logistics Chain Integration Services have the best opportunity to serve these cargos. The VAL-potential for RO/RO is very limited. Trucks with drivers are too expensive to be delayed, while the cargo is modified. Additionally, these loads are usually customer-tailored. Value Added Facilities, such as tanking, cleaning, repair, parking, security, renting and leasing facilities have a better potential to serve the RO/RO market. Dry and liquid bulk flows have the lowest potential for both VAL and VAF. To provide a favorable environment for VAL and VAF, many ports have developed areas where companies are established to perform trade and transport related value added services (World Bank, 2001).

Finally, the price performance ratio has become increasingly important as manufacturers seek to trim costs and improve customer service, through the adoption of sophisticated logistics processes (World Bank, 2001). Increased efficiency may be achieved through improvement of the physical and technical port infrastructure, introduction of new and better equipment, organizational changes, training of personnel, etc. If ports can turnaround ships faster, it reduces the waiting time in port for the carrier and for the shipper. For the shipper, this may also result in reduced inventory costs due to less waiting time.



THE PORT AGENTS

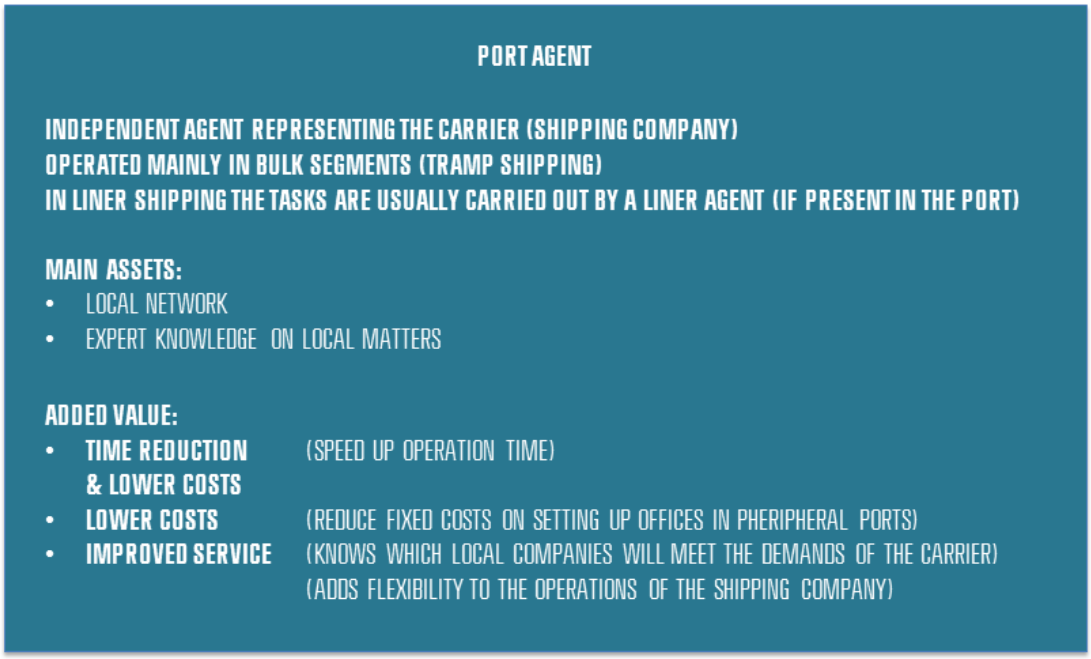
The port agent takes care of all aspects concerning the ship while it is in port. For most shipping companies it is, however, impossible and unnecessary to have in-house offices in every port of call. This is especially the case for smaller shipping operators. It is expensive to maintain a permanent office, so operators will usually only have in-house representations in key locations. Port agency is furthermore a fairly standardized service and the quality of the services will usually depend on years of experience. For most shipping companies, this can better be obtained by third parties. An independent port agent thus adds flexibility to the organization of the shipping company and reduces expenses of setting up permanent offices in peripheral ports (Houtved, 2005).

The main services of the port agent include: (1) arranging pilots and tugs, (2) arranging berthing, (3) representing the operator in port, (4) purchasing provisions and spare parts, (5) assisting the crew, (6) taking care of paperwork, and (7) organizing communication between the involved actors. The types of services being provided may vary from port to port depending on the local conditions, legislation, etc.

Prior to the arrival, the port agent informs the operator about the local conditions for the ship and cargo. He estimates port charges and makes the necessary arrangements for tugs, pilots, berth, stevedoring, etc. (Houtved, 2005).

Once the ship has arrived in port, the agent is the local representative of the operator. He arranges purchase of bunkering, provisions, and spare parts. He assists the operator with crew changes and makes the necessary arrangements for the crew (hotels, dentists, medical assistance, etc.). The agent furthermore takes care of all paperwork, documentation, and the communication with local authorities. He handles the payment of harbor charges, tugs, pilots, stevedores, provisions, etc. on behalf of the operator. In tramp shipping, the agent furthermore oversees the loading and unloading of the cargo. Finally, the agent secures the necessary communication between the actors involved including the ship, operator, consignor, consignee, customs, authorities, etc.

The main assets of the port agent are (1) local network (connection to local suppliers, agents, authorities etc.) and (2) expert knowledge on local legislation, documentation, and procedures, as well as the quality of services and equipment provided by local companies etc.



The port agent's local network and expert knowledge on local matters basically make every aspect of the port operation easier and save valuable time. The local agent is furthermore used to dealing with local companies and has expert knowledge on the quality of equipment and services. This means that he is more likely to find the right solutions for the individual operator and reduce the risk of delays.

This allows the port agent to add value to the operator in three ways: (1) by reducing the time of the port call, (2) by knowing the availability and quality of the local services, and (3) by adding flexibility to the operations of the shipping company.

THIRD PARTY SHIP MANAGEMENT

Shipping companies have traditionally managed their own ships. After the Second World War, however, many shipping operators began outsourcing ship management to independent third parties (Mitroussi, 2003).

Shipping companies can organize the management of the fleet in many ways. On the general level, there are three main options: (1) the traditional model where the shipping company has in-house ship management. (2) the outsourcing model where the ship management is outsourced to third parties, or (3) the hybrid management model where part of the fleet is being outsourced to one or more third parties and the remaining are managed in-house (Poulsen & Sornn-Friese, 2014; Dickie, 2014; Cariou & Wolff, 2011).

There are several types of ship managers. Many ship management activities are integrated into large owner-operator companies. This is the case with the big container liners Mærsk and Hapag Lloyd. The ship management activities may, however, also exist as separate group companies, which also serve external ship owners. This is the case with NYK Ship management, which is part of Japanese NYK Line and Columbus Ship management, which is part of the German container line Hamburg Süd. Many tanker and bulker owners manage their own vessels in in-house shipping entities and charter them out. Finally, a significant part of the market is served by 3rd party ship management companies, which provide ship management services to ship owners without being significant ship owners themselves. This is the case with companies like Thome Ship Management, V-Ships, and Anglo Eastern (Jahn & Büssow, 2013).

Foto: Scanpix/iris

Today app. 1/3 of the world fleet is managed by third party ship management companies (Poulsen & Sornn-Friese, 2014). The third party ship management companies basically provide two main types of services: Technical management and crew management. The technical management is basically concerned with the hardware. It includes the daily operation of the ship including technical support, daily maintenance, purchase of bunkering, spare parts and consumables, monitoring of voyage performance fuel efficiency, etc. (Mitroussi, 2003; Poulsen & Sornn-Friese, 2014; Drewry, 2014). Technical management can furthermore include management or supervision of major repairs, conversions, and even new building projects. The ship management company can also perform vetting and pre-purchase inspections for its clients (Interview with Holm).

The crew management includes selection and training of the crew, crew certification, crew evaluation and assessment, crew administration, and HSEQ. Selection and training of the crew can either be performed in-house by the ship management company or be contracted to agents (Interview with Holm; Interview with Meyer & Kristensen, 2014). The crew management and technical management are usually carried out by the same third party but not always (Poulsen & Sornn-Friese, 2014).

A shipping company will usually choose to outsource ship management if the value added by the ship management company is higher than the cost of performing ship management in-house. Independent ship management companies may add value to the operator in several ways. These include (1) cost savings due to economy of scale, (2) special expertise on ship operations and/or legislative demands, (3) increased flexibility, and (4) benchmarking (Dickie, 2014).

A major reason for outsourcing ship management is cost savings. Even if there are a number of ship owners operating large fleets, the average fleet size is 7-8 ships (Drewry, 2011). For the average ship management company, the corresponding figure is 33-45 ships (Drewry, 2011). For many (smaller) operators, there are obvious scale economy advantages by engaging a ship management company that has better bargaining power when purchasing supplies, spare parts, and when engaging with shipyards and other actors.

The independent management companies, however, also have special expertise and experience and thus the ability to offer a number of value added services (Poulsen & Sornn-Friese, 2014). Today, a shipowner may be a bank, a fund manager or a company with no shipping knowledge. In these cases, the ship management company can be vital for the daily operation. The ship management company may also have specific technical expertise to perform vetting or pre-purchase inspections, oversee repair, conversion, new buildings projects, and even act as project manager. The increasingly sophisticated computerized maintenance and management systems, as well as increased regulatory environment, mean that technical ship management has become increasingly specialized and for many (smaller) operators, the cost of outsourcing are often lower than having the technical management in-house. The same can be said for the crew management. HR, crew administration, training, and updates of competences and certificates may be a major task for (smaller) operators to overcome, and the third party ship management company may be able to perform these services better and cheaper. In these cases, outsourcing technical and crew management basically allows the operators to focus on their core commercial competences (Mitroussi, 2003; Poulsen & Sornn-Friese, 2014; Drewry, 2014).

Outsourcing ship management furthermore gives the operator increased flexibility in a highly volatile market. By outsourcing, the shipping company can adjust the staff on short notice.

Finally, by outsourcing to one or more independent agents the shipping operator can benchmark in-house ship management (or two independent agents) and thus secure high efficiency. It is common to have some ships managed by one independent agent and others by another in order to compare the two.

THIRD PARTY SHIP MANAGEMENT

(FORMALLY) INDEPENDENT AGENT REPRESENTING THE CARRIER (SHIPPING COMPANY)

MAIN ASSETS:

- EXPERT KNOWLEDGE ON TECHNICAL ISSUES (TECHNICAL MANAGEMENT)
- EXPERT KNOWLEDGE ON CREW MANAGEMENT (AND SOMETIMES IN-HOUSE TRAINING FACILITIES)

ADDED VALUE:

- **LOWER COSTS** (DUE TO ECONOMIES OF SCALE)
- **TIME REDUCTION** (REDUCED TIME FOR RECRUITMENT AND TRAINING)
- **INCREADED QUALITY** (INCREASED QUALITY OF CREW)
  (INCREASED OPERATION TIME OF SHIPS AND EQUIPMENT)
  (ALLOWS BENCHMARKING WHICH SECURES MORE EFFICIENT SHIP MANAGEMENT)
- **INCREASED SERVICE** (BETTER KNOWLEDGE ON REGULATIONES AND CERTIFICATION)
  (ADDS FLEXIBILITY TO THE OPERATIONS OF THE SHIPPING COMPANY)

SUMMARY

This report has examined the concept of value creation in the maritime chain of transportation. A maritime transport chain can best be conceptualized as a network through which carriers (e.g. shipping companies and haulage providers) and third parties (e.g. terminal operators, freight forwarders, brokers, and agents) provide services for the movement of cargo provided by shippers.

The main actors in the maritime chain of transportation are the carriers that add value to the shipper by moving goods from areas with excess supply to areas with excess demand. In this process, a number of (independent) third parties may provide a number of services. The shipper and/or carrier will employ these agents if the rise in costs is more than compensated by the value of the service. The third parties can thus only exist if they provide value added services to the carrier and/or to other third party service providers.

From a financial perspective, value is created when a business earns revenue that exceeds the expenses. In many sectors, however, value is increasingly being created by more intangible drivers such as research, innovation, branding, ideas, and networks which usually provide indirect rather than direct benefits (Kaplan & Norton, 2004a; 2004b). This is also the case within maritime logistics. According to Johansson et al. (1993), third parties may add value through (1) improving the level of service, (2) quality, (3) cost, and (4) time reduction.

The chartering agent's network and market knowledge allow him to speed up the search time and match process for shippers and carriers (time reduction). The port agent's local network allows him to speed up port operations (time reduction) and make the necessary arrangement on behalf of the carrier (service). Freight forwarders may take over part of the production chain and provide services which manufacturers don't consider their core business (service). This includes assembly, quality control, customizing and packing of goods, pest control, and after sales services. Third party ship management companies may reduce costs through economies of scale (cost reduction), and increase quality of crew and equipment maintenance through specialization (quality), just to mention a few.

While the report has investigated the concept of value creation, the question of value capturing has not been addressed in this study. Value capturing depends on the individual transactions between the actors in the chain. A port agent may add value to a carrier by securing smooth port operations and thus reduce waiting time. The added value may, however, be captured by a freight forwarder who forces the carrier to lower the price or more likely be distributed among several actors. The business model literature may provide a fruitful lens for exploring this in greater depth.

The maritime chain of transportation is becoming increasingly complex and involves an increasing number of actors. The services of some actors are furthermore overlapping. Inland haulage can thus be provided by shippers, freight forwarders, independent liner agents, in-house liner sales offices, or by an independent haulage provider. Freight forwarders are increasingly overtaking functions in the value chain from manufacturers, etc. In order to successfully navigate this network, it is important to have an overview of the chain of transportation at a more general level.

REFERENCES

Alizadeh, A. H. & N. K. Nomikos (2009): *Shipping Derivatives and Risk Management.* Faculty of Finance, Cass Business School, City University, London, Palgrave Macmillan

Alphaliner top 100 [http://www.alphaliner.com/top100/] (visited 4/9 2015)

Beenstock, M. & Vergottis, A. (1993): *Econometric Modelling of World Shipping.* International Studies in Economic Modelling 16. Chapman & Hall

Biglaiser, G. (1993): "Middlemen as experts". *Rand Journal of Economics.* 24 (2), p. 213-223

Blocker, C.P., Cannon, J.P., Panagopoulos, N.G. & Sagar, J.K. (2012): "The Role of the Sales Force in Value Creation and Appropriation: New Directions for Research. *Journal of Personal Selling & Sales Management*. Vol. XXXII, No. 1 (winter 2012) pp. 15-27

Branch, A.E. (2000): *Export Practice and Management*, 4th ed. Thomson Learning, London.

Cariou, P. & Wolff, F-C. (2011) "Ship-Owners' decision to Outsource Vessel Management". *Transport Reviews.* Vol. 31 no. 6, 709-24 (November 2011)

Dickie, J.W. (2014): *REEDS 21st Century Ship Management.* London. Bloomsbury Publishing Plc.

Drewry Maritime Research (2014): *Shipmanagement Fails to Convince.* [http://www.drewry.co.uk/news.php?id=106]

Gorton, L., Ihre, R. & Sandevärn, A. (1995): *Shipbroking and Chartering Practice.* London: Lloyds of London Press, 4th ed.

Houtved, A. (2005): *Shipping*. Danmarks Skibsmæglerforening.

Iolcos Hellenic Maritime Enterprises Co. Ltd. webpage (visited 10.3.2015) [http://www.iolcoshellenic.com/maritime/people/people.php?id=5]

Jahn, C. & Büssow, T. (2013): *Best Practice Ship Management.* Fraunhofer Center of Maritime Logistics & Germanischer Lloyd.

Johansson, H.J., McHugh, P., Pendlebury, A.J. & Wheeler, W.A. (1993): *Business Process Reengineering.* Chichester: John Wiley & Sons

Kaplan, R.S. & Norton, D.P. (2004a): *Strategy Maps: Converting Intangible Assets Into Tangible Outcomes.* Cambridge: Harvard Business School Press

Kaplan, R.S. & Norton, D.P. (2004b): "How Strategy Maps Frame an Organization's Objectives". *Financial Executive.* March-April 2004.

Klippel, B. (2000): "Non vessel operator (NVO)". In: Bloech, J. & Ihde, G.B. (eds.) *Logistik total.*

Vahlen, Munich.

Krishna, B. (2012): *Chartering*, Education PP: [http://www.slideshare.net/bharath_krishna/chartering?related=2]

Lagoudis, I.N., Lalwani, C.S. & Naim, M.M. (2004): "A Generic Systems Model for Ocean Shipping Companies in the Bulk Sector". *Transportation Journal.* Vol. 43, no. 1 (Winter 2004), pp. 56-76

Lyridis, D.V., Fyrvik, T., Kapetanis, G.N., Ventikos, N. Anaxagorou, P., Uthaug, E. & Psaraftis, H.N. (2005): ”Optimizing shipping company operations using business process modelling”. *Maritime Policy & Management.* October-December 2005, vol. 32, no. 4, pp. 403-420

Mitroussi, K. (2003): “Third party ship management: the case of separation of ownership and management in the shipping context”. *Maritime Policy and Management.* Vol. 30, no. 1, 77-90

Nordic Shipping (2015): Company webpage: [http://nordicshippingco.com/types-of-charter/]

Poulsen, R.T. & Sornn-Friese, H. (2015): Achieving energy efficient ship operations under third party management: How do ship management models influence energy efficiency? *Research in Transportation Business and Management*, (in press):

Robinson, R. (2002): “Ports as elements in value-driven chain systems: the new paradigm. *Maritime Policy and Management.* Vol. 29, no. 3, pp. 241-255

Schramm, H.-J. (2012): *Freight Forwarder’s Intermediary Role in Multimodal Transport Chains.* A Social Network Approach. Physica-Verlag. Springer Science & Business.

Sornn-Friese, H. (2010): “Maritime Outsourcing and Structural Change”. *Mercator: Maritime Innovation, Research and Education.* December 2010.

Sornn-Friese, H. & Hansen, C. Ø. (2012): *Landlubbers and Seadogs.* Copenhagen Business School Press & Nyt fra Samfundsvidenskaberne.

Stopford, M. (2009): *Maritime Economics.* 3rd ed. Routledge: London & NY

Strandnes, S. (2000): ”The Shipbrokering Function and Market Efficiency”. *International Journal of Maritime Economics.* Vol. 2, no. 1, p. 17-26

Talley, W.K. (2011): ”One-hundred percent scanning of port containers: the impact on maritime transportation chains”. Cullinane, K. (ed.): *International Handbook of Maritime Economics.* Edward Elgar, Cheltenham, UK, pp. 207-222

Talley, W.K. (2012): ”Maritime carriers in theory. Talley, W.K. (ed.): *The Blackwell Companion to Maritime Economics,* Wiley Blackwell Publishing, Oxford, UK, pp. 89-106

Talley, W.K. & Ng, M.W (2013): “Maritime transport chain choice by carriers, ports and shippers”. *International Journal of Production Economics.* Vol. 142, Issue 2, April 2013, pp. 311-316

Tvedt, J. (1987): *Shipbroker.* SNF-Working Paper 23/1997, Bergen

Williamson, O. E. (1979): “Transaction-cost economics: The governance of contractual relations”. *Journal of Law and Economics,* 22(2): 233-261.

Williamson, O. E. (1981): “The economics of organization: The transaction cost approach”. *The American journal of sociology,* 87(2): 233.

Williamson, O.E. (1985): *The Economic Institutions of Capitalism: Firms, Markets, Relational Contracting.* New York, NY: Free Press

World Bank Report (2001): *Alternative Port Management Structures and Ownership Models.* World Bank Port Reform Tool Kit

Yavas, A. (1992): “Market maker versus matchmakers”. *Journal of Financial Intermediaries,* (2), p. 33-58.

INTERVIEWS

Stig Holm – General Manager at Thome Ship Management, Denmark. Interviewed by Thomas Roslyng Olesen & Agnieszka Nowinska, 14.11.2014

Frank K. Mortensen – CEO at Lightship Chartering. Interviewed by Thomas Roslyng Olesen and Agnieszka Nowinska, 20.11.2014

Chris Rosenkjær – Assistant Chartering Manager at Lightship Chartering. Interviewed by Thomas Roslyng Olesen and Agnieszka Nowinska, 20.11.2014

Jimmy Thyregod Kristensen - Managing Director at NT Offshore. Interviewed by Thomas Roslyng Olesen & Agnieszka Nowinska, 28.11.2014

John P. Mejer – COO at NT Offshore. Interviewed by Thomas Roslyng Olesen & Agnieszka Nowinska, 28.11.2014

Lars Erik Stahlschmidt – Former charterer at Hapag Lloyd and Fellowship Agency. Interviewed by Thomas Roslyng Olesen & Agnieszka Nowinska, 30.10.2014

CBS MARITIME:
A BUSINESS IN SOCIETY PLATFORM
AT COPENHAGEN BUSINESS SCHOOL

CBS MARITIME

KILEVEJ 14A, 3RD FLOOR, 2000 FREDERIKSBERG, DENMARK
CBSMARITIME@CBS.DK • MAIN: +45 3815 3815
WWW.CBS.DK/MARITIME

CBS COPENHAGEN BUSINESS SCHOOL
HANDELSHØJSKOLEN