FOREIGN TRADE UNIVERSITY

HO CHI MINH CITY CAMPUS

GROUP ASSIGNMENT

Subject: International Transport Management

Case Study:
Hapag-Lloyd's weekly service from East Coast South America to North Europe: Options to cover the increasing demand.

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Ho Chi Minh, November 22, 2024

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LIST OF ABBREVIATIONS

E2E	End-To-End
VSA	Vessel Sharing Agreement
LNG	Liquefied Natural Gas
IMO	International Maritime Organization

CHAPTER 1: GENERAL OVERVIEW

1.1. Company Overview

1.1.1. Introduction to the company

Hapag-Lloyd, established as one of the most prominent global leaders in liner shipping, plays a vital role in the international logistics and transportation industry. With a fleet comprising **292 modern ships**, the company ensures the transportation of **approximately 11.9 million TEUs (Twenty-foot Equivalent Units)** annually, reflecting its critical contribution to facilitating global trade. This extensive network is managed through **more than 400 offices spanning 139 countries.**

The company's prestige stems from its **historical roots** and decades of delivering outstanding service. Since its inception, Hapag-Lloyd has demonstrated a remarkable ability to adapt and thrive amidst the rapidly evolving dynamics of global trade. Its guiding principles emphasize innovation, quality, and environmental responsibility. This steadfast focus has not only secured the company's position as a market leader but also built a strong foundation of trust among its clients and stakeholders.

Hapag-Lloyd's approach to the shipping industry is built on two primary pillars: **technological advancement** and **sustainability**. The company has consistently pushed boundaries by integrating cutting-edge technologies into its operations to enhance efficiency and customer satisfaction. Furthermore, it actively pursues environmentally sustainable practices, ensuring its services align with modern environmental standards while reducing its carbon footprint.

By prioritizing these values, Hapag-Lloyd is uniquely positioned as a **trusted and innovative partner in global trade**. Its ongoing commitment to operational excellence and customer-centric strategies further cements its reputation as a reliable leader in liner shipping.

1.1.2. Supply Chain Strategy

In the intricate landscape of global trade, Hapag-Lloyd has crafted a comprehensive supply chain strategy designed to meet the complex needs of its customers while maintaining high standards of efficiency and reliability. The company's supply chain strategy aims at maintaining **technological integration in the operation process** collaborating with **sustainability initiatives** to ensure the **global connectivity** and **customer centricity** of different stakeholders in the whole supply chain.

Technology-Driven Operations

Hapag-Lloyd has invested in advanced technologies to optimize its supply chain operations. The company employs **data analytics and AI-driven tools** to streamline shipping routes, predict demand, and improve cost efficiency. Additionally, real-time cargo tracking systems enhance **transparency** and provide customers with invaluable insights into their shipments. This tech-driven approach ensures that Hapag-Lloyd consistently delivers on its promise of reliability and efficiency.

Sustainability Initiatives

In order to achieve the Net-zero awards by 2045, Hapag-Lloyd has integrated **environmental measures in their operations** to minimize its carbon footprint throughout the operations. These initiatives include **transitioning to cleaner fuels**, such as LNG (Liquefied Natural Gas), and deploying **fuel-efficient vessels** equipped with cutting-edge technologies. By adopting these measures, Hapag-Lloyd not only reduces its environmental impact but also sets a benchmark for sustainability within the shipping industry.

Global Connectivity

By leveraging **a network of ports and inland connections**, the company provides seamless end-to-end (E2E) logistics solutions for its clients. This connectivity ensures the efficient flow of goods across international borders, enabling businesses worldwide to maintain robust supply chains and meet their own operational demands.

Customer-Centric Approach

The company's ability to offer tailored solutions—ranging from specialized cargo services

to flexible scheduling— enables it to meet the demands of different customer bases. This approach fosters long-term partnerships and reinforces Hapag-Lloyd's reputation as an ideal partner and service provider in global logistics.

Through its comprehensive supply chain strategy, the company is positioned not just to meet but to exceed the expectations of its clients, ensuring that Hapag-Lloyd remains an essential player in the world of global trade for years to come.

1.2. East Coast South America to North Europe

According to the International Maritime Organization (IMO), ocean shipping lanes are crucial to the sea freight industry and the world economy, over 90% of the global trade is carried by sea.

The Latin America trade lane is one of the main world sea traffic ways which connects distant North Europe and the East Coast of South America across vast oceans. When evaluating the route from Buenos Aires to Rotterdam, there are some highlights related to such.

In terms of geography, the **distance** between Buenos Aires and Rotterdam by cargo ship is approximately **6390 Nautical Miles** or 11834.28 Kilometers. With this distance, the **minimum time** to complete the trip is only **around 12 days 16 hours**. But in case of using **Hapag-lloyd's services**, they must take up to **31 days** based on the actual circumstances. **The Port of Buenos Aires** is located on the western bank of the Río de la Plata estuary in **Argentina**. The port is divided into **two parts**: Puerto Nuevo and Dock Sud. **Puerto Nuevo is in the city center**, while **Dock Sud** is located **outside the city limits**. The port of **Rotterdam** is located in the **Netherlands**.

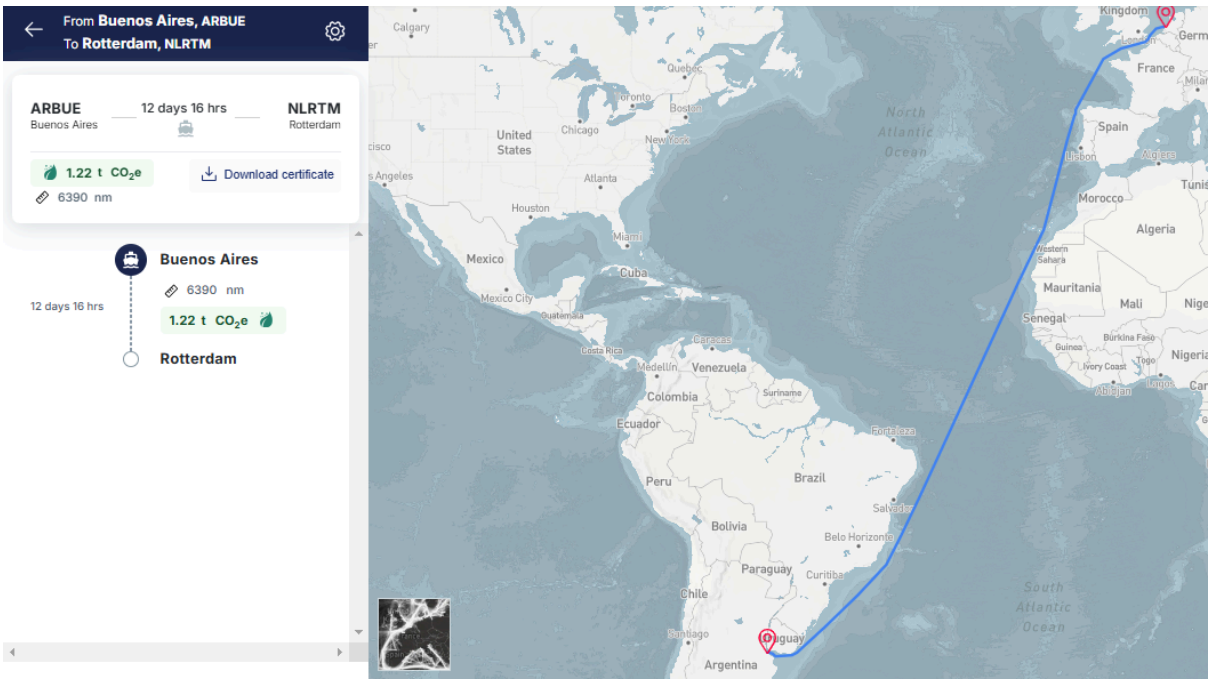

Figure 1.1: Minimum shipping days (*Source: searoutes.com*)

In terms of geological events, the relationship between The European Union (EU) and Latin America is considered a long-standing strategic partnership. The foundation of this relationship are the shared values and common interests. It creates an advantageous condition for the trade between two areas including the sea trade in this case (www.eeas.europa.eu, n.d.).

CHAPTER 2: IN DEPTH ANALYSIS

2.1. About forming a direct service

2.1.1. Definition

Direct shipping refers to a logistics strategy in which goods are transported directly from the supplier to the customer without intermediaries such as warehouses or distribution centers. In this model, the supplier assumes responsibility for managing the delivery process after receiving the necessary shipment details from the seller (The Cooperative Logistics Network, 2023).

Operationally, this approach eliminates intermediate stops, ensuring that the cargo is shipped directly from the manufacturing facility to the end customer. This streamlining reduces potential delays and minimizes handling within the supply chain.

Example: Ocean Network Express (ONE) LUX Service

Ocean Network Express (ONE) LUX Service is a direct shipping route established by ONE, one of the world's leading container shipping companies. Launched to provide a direct connection between major ports in East Coast South America and Europe, the LUX service bypasses intermediate transshipment hubs, offering faster transit times and improved reliability (One-line.com, 2023).

2.1.2. Advantages and Disadvantages

2.1.2.1 Advantages

Quicker Delivery:
The absence of intermediate stops allows cargo to move directly from the port of origin to the port of destination. This streamlined process results in faster transit times, making it particularly advantageous for time-sensitive goods and businesses requiring prompt deliveries.

Enhanced Security:
With minimal handling during transit, the likelihood of cargo damage or loss is significantly reduced. This makes direct shipping an ideal choice for valuable or delicate items that require careful transportation.

Reduced Risk of Customs Issues:
Fewer transit points and transfers lead to a decreased chance of customs-related delays or complications. This is especially beneficial for companies managing international shipments and navigating complex trade regulations.

Improved Delivery Reliability:
Direct shipping supports more predictable delivery schedules due to its straightforward logistics process. This reliability can enhance customer satisfaction and foster long-term loyalty, providing businesses with a competitive advantage.

2.1.2.2 Disadvantages

High Operational Costs:
Operating a direct shipping service incurs significant operational expenses, including costs for vessel procurement, fuel, maintenance, and port charges. These fixed and variable costs can be difficult to sustain, particularly during periods of low demand or market downturns (Notteboom, 2024). The lack of external support from third-party services increases the financial burden on the company.

Risk of Underutilization:

Direct services, particularly on long-haul routes, may experience uneven demand, resulting in the underutilization of shipping capacity. This inefficiency can increase per-unit costs and negatively impact profitability, especially when vessels operate below their full capacity. This is a challenge that shipping companies must address through strategic capacity planning (Batrinca and Gianina Cojanu, 2014).

Greater Risk Exposure:
By independently managing operations, the company assumes all risks associated with the service. These risks include fluctuating fuel prices, regulatory changes, and unexpected operational disruptions. The absence of shared responsibility with other stakeholders heightens exposure to these uncertainties, demanding robust risk management strategies to mitigate potential losses.

Limited Geographic Expansion:
Independent operations may also limit the shipping company's ability to expand its services to new regions or markets. Without the support of external partners or alliances, expanding to multiple locations or regions becomes more challenging, restricting the company's growth potential and its competitiveness in global markets.

Dependence on Suppliers and Logistics Providers:
Although the shipping company operates independently, it remains dependent on its suppliers and third-party service providers, such as fuel suppliers and port operators. Any delays or issues at these external points can lead to operational disruptions, potentially affecting the efficiency and reliability of the direct service (Hyunwoo, 2022).

2.2. About transshipment from Algeciras

2.2.1. Definition

Transshipment refers to the process where cargo is transferred from one vessel to another at an intermediate hub before continuing on to its final destination. This may occur between different transport modes (such as from sea to land transport) or between vessels (e.g., from one sea vessel to another). The process typically happens at transshipment hubs, such as Algeciras, and is crucial for facilitating long-distance shipments, especially when direct routes are not available or feasible (Dripcapital.com, 2022).

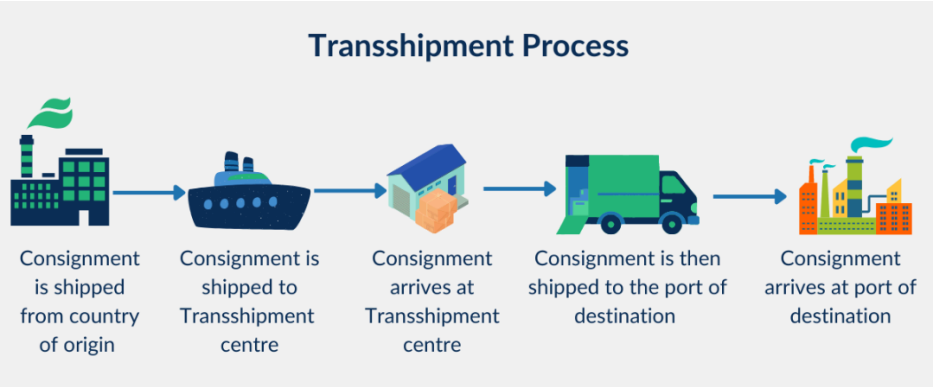

Figure 2.1: Transshipment Process (*Source: Dripcapital, 2022*)

Example: CMA CGM's Transshipment Operations in Algeciras ("CMA CGM | Search Port Schedules")

CMA CGM, one of the world's leading container shipping companies, utilizes the Port of Algeciras as a key transshipment hub. This strategic location allows CMA CGM to efficiently transfer cargo between vessels, optimize routes, and reduce transit times for shipments between East Coast South America and North Europe. The Port of Algeciras is one of the largest ports in Europe and a major hub for container, cargo, and transshipment operations.

2.2.2. Advantages and Disadvantages

2.2.2.1 Advantage

Cost-Effectiveness: Transshipment is often more affordable than direct shipping, particularly for smaller cargo volumes. Direct shipping tends to be more in demand, leading to higher costs. By offering transshipment, freight forwarders can provide customers with a wider range of price options, catering to businesses seeking cost-effective solutions.

Feasibility for Indirect Routes: Transshipment serves as the most viable and economical option. It enables cargo to be transported to remote or less accessible destinations by leveraging multiple shipping routes. This flexibility is especially beneficial for businesses operating in regions with limited direct connectivity.

Potential Savings on Import Duties and Tariffs: Transshipment can sometimes be strategically used to reduce import duties and tariffs. By routing cargo through intermediate countries, exporters can potentially lower the overall cost of shipment to the final destination, making it an attractive option for international trade in highly regulated markets.

2.2.2.2 Disadvantage

Risk of Damage: The more handling that occurs during the transfer process, the higher the likelihood of cargo being damaged or lost. This risk is particularly concerning for fragile or high-value goods. Businesses must mitigate this risk by securing cargo insurance (Rodrigue, 2020).

Dependency on External Coordination: Transshipment requires close coordination between multiple parties, including different shipping lines and ports. This increases the complexity of operations and introduces risks of delays if any link in the supply chain experiences issues, potentially impacting the entire shipping schedule (Li et al., 2023).

2.3. About entering the VSA program

2.3.1. Definition

A vessel-sharing agreement (VSA) involves a limited number of shipping companies agreeing to operate a liner service along a specified route using a specified number of vessels. The partners do not necessarily each have an equal number of vessels. The capacity that each partner gets may vary from port to port and could depend on the number of vessels operated by the different partners. (Notteboom, 2017)

For instance, the 2M Alliance is a VSA between two of the world's largest shipping companies, Maersk Line and MSC. Established in 2015, this agreement allows these companies to share vessel space and optimize routes on major trade lanes, primarily between Asia and Europe. However, both companies decided to discontinue 2M in 2025

2.3.2. Advantages and Disadvantages

2.3.2.1. Advantages

Cost-effective: The Vessel Sharing Agreement (VSA) covers a range of operational matters for liner shipping services. This includes the scope and responsibilities of each member's participation, such as differentiation between container sizes, handling of hazardous goods, schedule adjustments, vessel maintenance, and optional port stops. The collaboration also extends to warehousing, inland container yards, freight stations, and the leasing of empty containers - all aimed at reducing overall costs. A major advantage of the VSA is that it avoids the need for high-volume investments to fully operate the ships (Varbanova A., 2018). It also achieves economies of scale by maximizing capacity utilization, with the shared capacity varying based on each member's market position. This agreement allows members to expand their geographical coverage and offset periods of economic downturn through cost savings from reduced vessel operations while maintaining market position.

This shows the trend that independent liner operators are rarely present in the market due to the high operational costs and unstable market conditions.

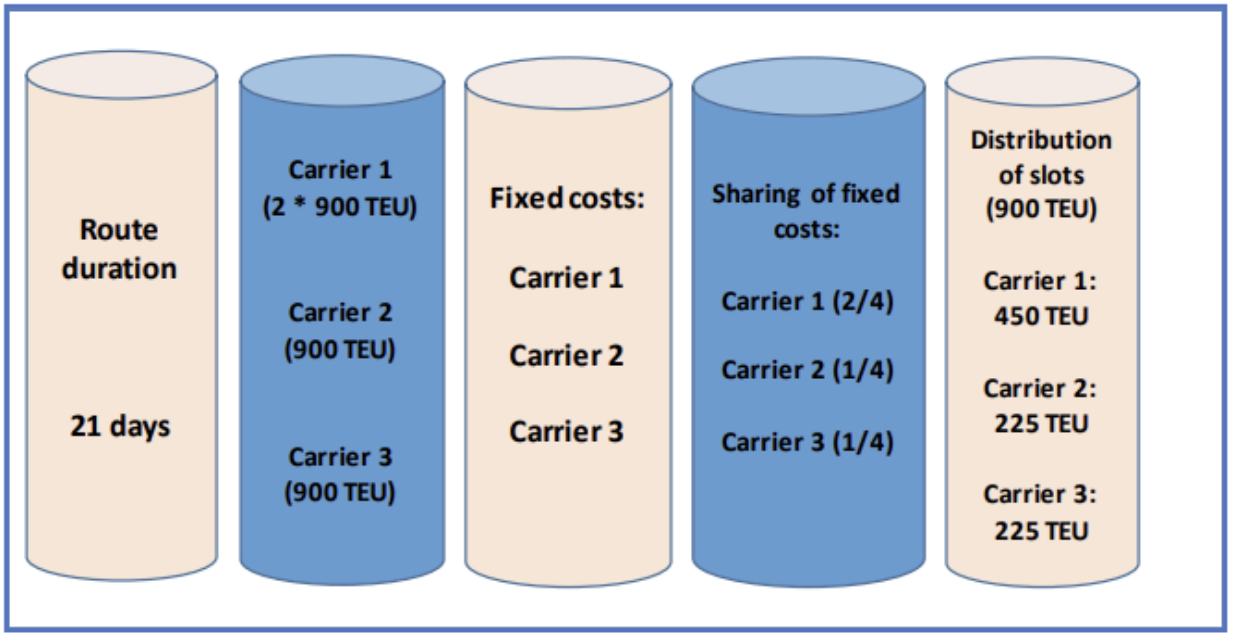

Figure 2.2: Slot allocation concept basis cost sharing in VSA (adapted from I. Chow, C. Chang, 2011)

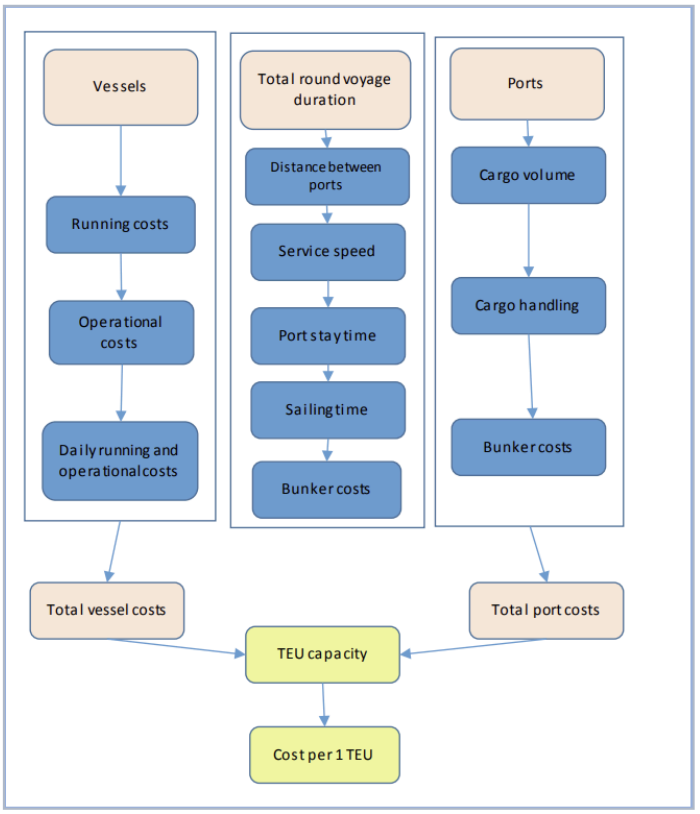

Figure 2.3: The Conceptual model of slot costs estimation (adapted from Karmelić, J., 2010)

The overall costs for participating in the Vessel Sharing Agreement (VSA) include the vessel's running costs and voyage costs, as detailed previously. To determine the slot price for each type of voyage, the total vessel costs are divided by the available slot capacity. It's important to note that this available capacity can fluctuate based on port limitations, container types, and the individual weight of the containers. Consequently, the slot price is adjusted based on the actual costs incurred after the planned voyages are completed.

The procedure for reallocating slots is crucial, as it represents the primary transaction among VSA members. This process involves selling surplus slots to another member who temporarily lacks capacity. The calculation of slot costs is based solely on operational expenses. Other secondary costs related to the business—such as terminal handling charges, transshipment costs to feeder vessels, and rail or road expenses—as well as indirect costs like container maintenance, leasing, storage, and handling of empty containers, are included in the liner tariffs set individually by each VSA member.

Increase effective competition: The analysis of vessel sharing agreements (VSAs) reveals their pro-competitive nature. The central argument is that the creation and expansion of these consortia do not change the average variable costs for carriers; instead, they distribute these costs among all members, leading to a reduction in each carrier's marginal cost. This reduction results in increased marginal profits and enhances the strategic options available to carriers. Consequently, there is an increase in the overall quantity of goods transported and a decrease in the equilibrium freight rate, ultimately benefiting consumer welfare. The modeling approach (Federico, 2017) used in his study is crucial for understanding these findings, as alternative models of strategic alliances would not have revealed the significant increase in carriers' marginal profits resulting from VSA formation and expansion.

Access to specific trade lanes: VSA are closely linked to the economies of scale gained from jointly operating larger vessels. This collaboration helps reduce excess capacity and share the investment risks associated with bigger ships. Such agreements enable individual carriers to expand their service areas geographically, enter new markets, and offer more frequent service, benefiting shippers. (Jin-Hwan, 2017)

It is important to note that these alliances operate solely for operational reasons, with each member maintaining its distinct market identity (Varbanova A., 2018). This is especially true for long-distance routes, while feeder services remain independent and are managed by individual companies outside the alliance. For customers, having the option to choose among multiple operators on the same route is crucial. This arrangement has also increased competitiveness and diversity of services at major ports.

Service reliability: Each participant in the agreement joins with a specified number of operated or owned container ships. As per the standard terms, each member is allowed to utilize a certain number of container slots from the vessels involved in the joint service. Capacity allocation is done proportionately based on the capacity of each member's own or operated vessels. This approach ensures that contributions are balanced between each member's capacity and the overall capacity of the agreement (Karmelić, J., 2010).

Environmental sustainability: Vessel sharing is an operational strategy that allows carriers to utilize ships more effectively while still competing on pricing and other commercial aspects. This approach broadens the variety of destinations and services offered to customers and minimizes empty space on vessels, leading to reduced emissions. The CBER supports vessel sharing by offering a specialized legal framework for the industry.

“From an operational and environmental perspective, vessel sharing is like public transport and car-pooling schemes: seeking to maximize efficiency and reduce emissions through the shared use of transport assets and infrastructure, significantly reducing emissions per unit of cargo transported,” says Yuichi Sonoda, Secretary General of Asian Shipowners Association.

2.3.2.2. Disadvantages

Complex operational decision-making: While sharing vessels can offer potential advantages, involving more carriers in joint operational decision-making can introduce challenges (Hyunwoo, 2022). Vessel sharing necessitates coordination among multiple carriers, which can complicate the management system for vessel and voyage planning (Vachon & Klassen, 2002). This complexity may lead to suboptimal or only locally optimal outcomes in areas such as vessel loading or route design. Thus, even when there are shared interests in improving operational performance, gains in one area may come at the expense of another (Ghorbani et al., 2022). Additionally, as more carriers participate, diminishing returns may become apparent, and the challenges of coordination may increase.

Trade-offs: Interviews with shipping industry representatives reveal that carriers generally perceive route redundancy as an inefficiency that planners try to avoid when designing voyages (Hyunwoo, 2022). However, planners may choose overlapping (back-and-forth) routes for several reasons, including the desire to reduce port time by unloading cargo in a first-in-last-out order, avoiding port congestion, and selecting departure ports based on total tonnage off-loaded to minimize ship draft and fuel costs. Consequently, reducing ocean route redundancy could result in increased time spent in port, during which expensive vessel

propulsion may occur (Bakshi et al., 2011; Vaishnav et al., 2016). These changes could lead to higher emissions linked to receiving firms. Nonetheless, these impacts would need to be consistent and significant to outweigh the potential benefits from other efficiencies achieved through vessel sharing.

Less control over operations and schedules: Instead of operating under direct shipment or other types of shipment by our company, cooperating with other organizations may limit our control and must follow their schedule. Having another company be responsible for the shipping process would arise conflicts between parties in terms of risks transferring and ensuring the expected quality of the products. Besides, a limited schedule proposed by a third party may affect the business operational planning strategy. This lack of autonomy can hinder a carrier's ability to respond quickly to customer demands or unforeseen circumstances

2.4. About buying slot charter

2.4.1. Definition

Slot chartering is a specialized arrangement within maritime logistics that allows a shipping company, referred to as the slot charterer, to lease a specified number of container spaces, or "slots," on a vessel owned or operated by another entity, the carrier. Unlike traditional vessel charters, which require leasing the entire ship, slot chartering focuses solely on sharing space. This flexibility makes it a popular choice for businesses that do not require a full vessel but still need consistent and reliable access to shipping services.

The concept is governed by comprehensive agreements that meticulously outline key elements such as the number of slots, associated costs, duration, and special conditions tailored to specific cargo requirements. These detailed contracts ensure mutual understanding between the parties involved, thereby facilitating operational efficiency.

Example: In 2007, a slot charter agreement was established between ZIM Integrated Shipping Service., Ltd and China Shipping Container Lines co., ltd with the mutual consent of chartering slots on each other’s vessels for the carriage of containers between specified trade routes. One of the important clauses of the agreement is the “Slot Commitment” clause where parties decide on particular slot allocation between specified ports.

String	Trade	Allocation
AAS1	Far East/Los Angeles	300 TEUs
AEX1	Far East/Northern Europe	300 TEUs

ANW	Far East/Seattle-Vancouver	300 TEUs

➔ *Upon mutual agreement of the Parties, any or all of the allocations and maxima set forth in Clauses 8(a) and 8(b) above may be adjusted on an on-going basis by up to 75 TEUs or 30%, whichever is greater.*

Table: "Slot Commitment" example clause

2.4.2. Advantages and Disadvantages

2.4.2.1. Advantages

Cost-effectiveness: One of the most notable advantages of slot chartering is its cost-effectiveness. By sharing cargo space, companies can significantly reduce their operational costs. This model is particularly beneficial for small or less frequent shippers who might otherwise find the expenses of operating an entire vessel unaffordable. The charterer is required to pay only for the space used, enabling a variable cost structure that aligns with their actual shipping needs. This economic efficiency can lead to cost reductions of up to 30% (Bulkargo, 2024), making slot chartering a highly attractive option.

High flexibility: In addition to being economical, slot chartering is also flexible. It allows businesses to adjust their shipping capacities according to demand, which is especially useful during peak seasons. For instance, during holiday shopping periods or harvest seasons, companies can easily scale up their operations without the need to invest in additional vessels. Furthermore, the arrangement grants access to a broader network of shipping routes, helping businesses expand their market reach and offer diverse service options to customers.

Simple operational process: Another significant benefit is the operational simplification it provides. With the carrier handling vessel operations such as navigation, maintenance, and risk management, the charterer can focus more on core activities like customer relationship management and marketing. This division of responsibilities not only reduces the logistical burden on the charterer but also enhances their ability to respond to customer demands.

Long-term relationship: Moreover, slot chartering often acts as a strategic foundation for long-term partnerships between liner companies. It allows businesses to test collaborative efforts and evaluate compatibility before committing to more integrated forms of cooperation, such as vessel-sharing agreements (Voss, 2014).

2.4.2.2. Disadvantages

Lack of control: While slot chartering offers considerable benefits, it also presents some notable challenges. One of the primary disadvantages is the lack of control that the charterer has over vessel operations. Since the carrier manages schedules, cargo handling, and routing, any delays or operational issues fall beyond the charterer's direct influence. This reliance can lead to logistical complications, particularly if communication between the parties is insufficient.

Ineffective information system: In addition to reduced control, slot chartering often involves asymmetric information sharing. Carriers typically possess better access to cost and operational data, which can create inefficiencies or mistrust within the agreement (Das & Teng, 1998). This disparity highlights the importance of transparent and detailed contractual terms.

Disputes and conflicts: Furthermore, the shared nature of vessel space increases the potential for disputes. Conflicts can arise over space allocation, pricing, or cargo handling, especially if the terms of the agreement are not clearly defined. Resolving such disputes can be time-consuming and may disrupt shipping operations.

Unpredictability: Lastly, the variability of market conditions poses another challenge. Slot availability and pricing are often influenced by seasonal fluctuations and global trade dynamics. During peak seasons, higher demand can lead to increased rates and reduced availability, while off-peak periods may bring lower costs but less frequent shipping options. This unpredictability requires charterers to adopt strategic planning and proactive measures to manage their shipping needs effectively.

2.5. Evaluation

2.5.1. Criteria for evaluation

When a shipping company plans to establish a weekly service from East Coast South America to North Europe, it must carefully evaluate its options against multiple critical criteria. The choice between creating a direct service, transshipping cargo through Algeciras, entering into a Vessel Sharing Agreement (VSA), or purchasing space through a slot charter should balance Order Management & Supply KPIs, Distribution KPIs, Internal Operation KPIs and Transport Management KPIs (Jenkins, 2021).

Order Management & Supply KPIs:
Order management & Supply KPIs emphasize the efficiency and reliability of managing orders, returns, and the flow of final goods throughout the supply chain. These metrics also play a key role in building stronger relationships with supply chain partners by promoting

transparency and adherence to best practices. They include On-Time In-Full rates, Capacity Utilization, Customer Backorders, and Freight Surcharges.

Distribution KPIs:
Distribution KPIs focus on the system that manages product flow—moving a product to end customers directly or intermediaries partners network (wholesalers, distribution centers, retailers,...). They include Average Dwell Time and Warehouse Costs.

Transport Management KPIs:
Transport management KPIs focus on the process of goods delivery and the advancement in operations regarding route scheduling, container utilization, and resources allocation. This metric basically includes delivery time, transportation cost.

Internal Operations KPIs
International Operations KPIs concentrate on the organization's internal structure, focusing on its flexibility, scalability, and controllability in implementing various transportation methods.

2.5.2. Scoring Matrix

The percentage of each element accounted for 25% as divided equally for four KPIs. The score weight ranges from 1 to 4 points which are respectively aligning the results: negative, moderate, positive, and highly positive.

The estimated figures will be shown in this table below:

Score weight	1	2	3	4
Results ranking	Negative	Moderate	Positive	Highly positive

Table 2.1: Score ranging divided by different levels

Source: Author's Compilation (2024)

The four options for the shipment of goods from East Coast South America to North Europe are restated below together with the information and self-assessment of aforementioned criteria for weighted scoring.

- Option 1: Create a direct service
- Option 2: Create a service from East Coast South America to Algeciras, and tranship the cargo onto your existing services from Algeciras to North Europe.
- Option 3: Enter into a Vessel Sharing Agreement
- Option 4: Buy space (slot charter) from another line.

Notice: The criteria is based on the collaboration of qualitative and quantitative estimation, there still exist some self-estimations and opinions.

KPIs	**Metrics**	**Create a direct service**	**Transhipment**	**Vessel Sharing Agreement**	**Buy space (slot charter)**
Transportation Management KPI (25%)	Delivery time/Speed	Fastest transit time not having intermediate stops or delays.	Slower due to multiple loading/unloading processes at intermediate ports.	Moderate as routes may depend on partners' schedules	Faster than transshipment as space is pre-purchased, but may depend on carrier availability.
	Transportation cost	High cost due to dedicated routes.	Most cost-effective since multiple shipments share the transport costs.	Economical due to shared vessels, though some costs are still split.	Similar to direct service due to pre-purchased space allocation, which lacks shared flexibility.
Distribution KPI (25%)	Average Dwell Time	Minimal dwell time due to no transloading.	Long delays at transfer hubs.	Delays are moderate, depending on partner operations	More efficient than transshipment.
	Warehouse cost	Requires higher investment in dedicated inventory.	Lower warehousing costs due to consolidation.	Costs are shared and optimized.	Costs can rise if utilization is low.
Internal Operation KPIs (25%)	Controllability/ Scalability	High controllability	Moderate controllability due to transshipment	Low controllability with partner networks	Moderate or low because the slot can be pre ordered by others.
	Flexibility	Moderate; routes are fixed but efficient.	Low flexibility due to reliance on hub schedules.	Flexible with shared resources.	Most flexible for demand surges.

Order Management & Supply KPIs (25%)	OTIF	High reliability and timely delivery.	Lower due to delays and coordination challenges.	Reliable with coordination among partners.	Reliable but dependent on slot availability.
	Capacity Utilization	High utilization but limited by fixed capacity.	Less efficient due to scattered operations	Best utilization due to resource sharing.	Good utilization, but less consistent.
	Customer Backorders	Minimal backorders due to fast delivery.	High chance of delays leading to backorders.	Balanced backorder risk with shared capacity.	Risk of delays impacting orders.
	Freight Surcharges	Higher costs passed on to shippers.	Lower surcharges due to consolidation.	Economical for large shipments.	Surcharges can vary with demand spikes.

Table 2.2: Comparison between four options of transportation.

Source: (Jenkins, 2021)

KPIs	Metrics	Create a direct service	Transhipment	Vessel Sharing Agreement	Buy space (slot charter)
Transportation Management KPI (25%)	Delivery time/Speed	4	1	3	2
	Transportation cost	1	4	3	2
Distribution KPI (25%)	Average Dwell Time	4	1	3	2
	Warehouse cost	1	3	4	2

Internal Operation KPIs (25%)	Controllability/ Scalability	4	3	1	2
	Flexibility	2	1	3	4
Order Management & Supply KPIs (25%)	OTIF	4	1	3	2
	Capacity Utilization	3	1	4	2
	Customer Backorders	3	1	4	2
	Freight Surcharges	1	2	4	3

Table 2.3: Weighted scoring for each element

Source: Author's Calculations (2024)

After calculations, here are the final results:

Metrics	Create a direct service	Transhipment	Vessel Sharing Agreement	Buy space (slot charter)
Transportation Management KPI (25%)	1.25	1.25	1.5	1
Distribution KPI (25%)	1.25	1	1.75	1
Internal Operation KPIs (25%)	1.5	1	1	1.5
Order Management & Supply KPIs (25%)	2.75	1.25	3.75	2.25
Total (100%)	6.75	4.5	8	5.75

Table 2.4: Weighted scoring for each elements

Source: Author's Calculations (2024)

As can be seen on the table, entering with the vessel sharing agreement (VSA) will be the most efficient option.

CHAPTER 3: CONCLUSION

3.1. The most feasible option

After analysing 4 options in terms of their advantages and disadvantages and developing a scoring matrix based on 4 main criterias, the final most feasible option is entering into Vessel Sharing Agreements. Currently, there are 2 major VSA that Hapag-Lloyd have entered, THE Alliance (2017-2027): Yang Ming, Hapag-Lloyd, ONE and HMM; and Gemini Cooperation (2025): Maersk - Hapag-Lloyd. THE Alliance covers all east-west shipping trades: Asia and North Europe, Asia and Mediterranean, Transpacific – West Coast, Transpacific – East Coast, Asia and Middle East / Red Sea, and Transatlantic. Gemini Cooperation covers main shipping trades Asia - Europe, North America - Europe, Asia - North America, Middle East - Europe.

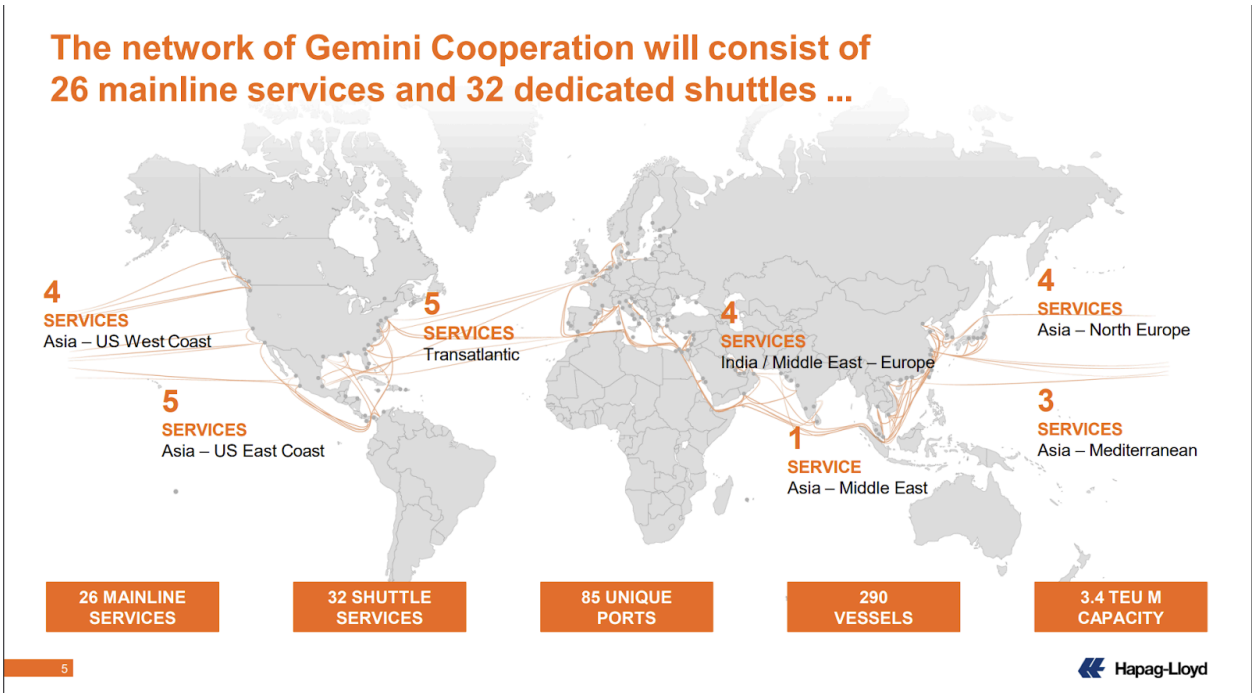

Figure 3.1: The network of Gemini Cooperation

Source: Hapag Lloyd (2024)

However, between two alliances there is no shipping route from Latin America to North Europe, therefore, Hapag-Lloyd should enter other VSAs with different shipping companies

that also have the demand for this shipping route. To be more proactive, Hapag-Lloyd should be the one who offer VSAs with other partners to have more control over the shipping products and develop efficient strategy for them. This will help them to gain more reputation and partner relationships, however, there are also challenges including the pressure and complexity of the shipping process in order to manage all of its partners and arising conflicts. One of the main reasons for the initiative of proactively offering VSA is the huge opportunity and gap for our business to lead the markemarket in the future. As this is one of the most important trades in the world, the demand for this will increase in the future, however, there is currently no major shipping alliance that directly has the trading service in this route.

3.2. Risk management & mitigation plan

Types of risk	Risks	Assessment	Mitigation plan
Market dependence	- Companies may become overly reliant on their partners for capacity and service	Low	- Diversifying trade partners can help reduce exposure to low demand in specific markets.
Reputation	- Incidents involving one party can negatively affect the reputation of all partners involved in the VSA. - The ship owner's brand and customer relationships may be impacted by the performance of the shared vessel.	Medium	- Develop a comprehensive crisis management plan that outlines procedures for responding to incidents - Ensure that VSA contracts clearly outline the responsibilities and liabilities of each partner.
Operation	- Coordinating schedules, routes, and cargo handling with partners can be complex, leading to potential delays and inefficiencies. - Aligning operational practices and standards among the partners can be challenging.	Low	- Develop detailed plans for vessel schedules, cargo handling, and port operations. - Implement a system for real-time monitoring and tracking of vessel movements, cargo status, and port operations. - Flexible Contingency Planning

Table 3.1: Possible Risks & Mitigations

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