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# Strategic Divergence: The Varied Paths of Vertical Integration in Container Shipping

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The views stated in this thesis are those of the author and not necessarily those of the supervisor, second assessor, Erasmus School of Economics or Erasmus University Rotterdam.

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## Abstract

This study investigates why companies within an industry do not uniformly pursue vertical integration, where we carry out a case study on the container shipping industry. We address three research questions: reasons for vertical integration, the extent of integration, and variations in integration strategies. Utilizing a literature review and Grounded Theory, including in-depth interviews with maritime industry experts, we found that early 2000s vertical integration was driven by efficiency gains, while post-2015 motivations shifted towards achieving stable returns amid market volatility. Analysis of the top ten shipping lines revealed varying degrees of investment in adjacent businesses, with APM-Maersk and CMA CGM leading in distant adjacencies while all lines making significant strides in port terminal operations. Six factors, categorized as internal (competitive strategies, risk management, shareholding, value of Logistics segment) and external (customer needs, market position), explain these differences. Our findings underscore the significant role of internal strategic choices and the dynamic nature of the shipping industry in shaping vertical integration strategies.

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# 1 Introduction

91% of logistics companies acknowledge that customers are now asking for end-to-end logistics services handled by a single provider, (Banks & Eichstedt, 2021), yet only 48% of the logistics companies, including shipping lines, are pursuing vertical integration strategies, (Reiss, 2022). Therefore, for the container shipping industry which is central to global trade, it is interesting to uncover why shipping lines are not vertically integrating to the same extent.

Vertical integration (VI) is a concept that became especially popular in the USA 1800s with Andrew Carnegie using this strategy to dominate the steel industry. Different versions of the concept are presented by different authors however they generally underline that it is defined as “the elimination of contractual and market exchanges, and the substitution of internal exchanges within the boundary of the firm” by Temin (1988) or “simply a means of coordinating the different stages of an industry chain when bilateral trading is not beneficial” according to Stuckey and White (1993).

Since then, companies in the cotton industry in the late 18<sup>th</sup> - early 19<sup>th</sup> century saw organisational changes both in the USA and Europe, where they chose different extents of vertically integrating and also from different motivations. Britain had monopoly access to factor and product markets and therefore the costs of finding yarn and getting raw materials was low due to its colonies, as a result, they chose a more specialised approach, (Temin, 1988). On the other hand US firms, not having access to similar resources, were more motivated to vertically integrate by factors such as technology, mass production, mass distribution and transaction costs, (Chandler Jr, 1993).

At the same time, German textile firms were exposed to price risks unlike their British counterparts, (Brown, 1992), and due to the ‘uncertainty in raw material prices, finished goods markets, tariff factors and the nature of the domestic market’, these firms tended to be both smaller and more vertically integrated, (Desai & Mukherji, 2001). However Desai and Mukherji (2001) argue that it is due to this easy access to raw materials and captive colonial markets that led to slow technological change for the British textile firms ‘by complicating the coordination of technological choices that are, by nature, interdependent’. Other companies such as in the steel industry under Carnegie and oil refinery under Rockefeller saw VI as a means to foreclose competition.

Further, in the mid 20<sup>th</sup> century during the peak of *The Big Three* in the automobile industry, General Motors(GM), Ford and Chrysler, we see a similar trend of firms choosing to vertically integrate to largely different extents. Ford and GM chose to integrate upstream into the production of steel, glass and wood and car parts, while Chrysler predominantly outsources its car parts. Despite the two vertically integrating firms doing it in different approaches (Ford set up its own operations while GM did this through acquisitions), by the 1980s, Ford produced 54% of its parts, GM 70% and Chrysler 39%, (Klier & Rubenstein, 2008). It was also around this period, to be precise 1979, that Chrysler had to be bailed by the US government after nearing bankruptcy, which can possibly be attributed to their VI strategy absence.

Today, Ford and GM remain as big players in the automobile industry even after vertically disintegrating towards the end of the 20<sup>th</sup> century after the rise of lean manufacturing in the US manufacturing sector, (Dyer & Nobeoka, 2000). A similar trend of reaching large levels

of integration followed by disintegration was also seen for UK chartering firms in the early 19<sup>th</sup> century due to opportunities for economies of scale and the development of sophisticated contractual arrangements, (Ville, 1993).

In the 1990s - 2000s, the concept of core competencies gained significant attention in strategic management literature after the article by Prahalad and Hamel (1990) which described the concept as ‘collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies’. The discussion was primarily focused on how identifying and focusing on your core competencies, would provide a sustainable competitive advantage that competitors cannot copy, (Prahalad & Hamel, 1990; Gupta, 2013; Agha & Alrubaiee, 2011). Firms such as Japanese owned NEC (Nippon Electric Company) competed in and dominated seemingly disparate businesses; semiconductors, telecommunications, computing and consumer electronics by branding itself as a portfolio of core competencies - the company’s combined expertise in coordinating a range of industrial technology and skills - rather than a collection of strategic business units, (Prahalad & Hamel, 1990). General Electric was also well known for using this strategy that resulted in an increase in net earnings by seven fold over a 20 year period, with a generally unchanging number of employees (Bucifal, 2009).

As much as we cannot draw a causal effect, a pattern is seen between firms being left behind in vertically integrating when other major firms in the industry are following this approach and losing competitiveness, as seen with the British textile firms and Chrysler. At the same time, there exists adequate literature highlighting when and when not to follow a strategy of VI, (Stuckey & White, 1993), the effects of VI in these cases, (Fronmueller & Reed, 1996; Parola, Satta & Panayides, 2015) and periods where firms benefited from focusing on their core competencies. A study by Heaver (2002) looking at the shipping industry for example, finds that ‘[shipping] lines have entered into them [container terminal management, intermodal transport and logistics] in different extents’. This then leads to the question:

*“Why don’t all companies within an industry always vertically integrate to the same extent?”*

Understanding these nuances of strategic choice of firms within the same industry can help in dissecting in what situations or circumstances do these strategies thrive and also open the door to further discussion on how these nuances affect a firm’s competitive advantage and differentiation when choosing not to follow a strategy that the other players in the industry are following. This is beneficial not only to the firms themselves by providing richer insights into strategic decision making and resource management, but also to policy makers and academia by enhancing our knowledge of how firms navigate complex environments, adapt to changing conditions and pursue sustainable growth.

We explore this research question by following a qualitative research design based on grounded theory approach and to a single case study on the container shipping industry which is currently seeing a similar pattern of some shipping companies vertically integrating to larger extent than others. Additionally, the different VI strategies taken by shipping lines were also seen in the early 2000’s during the move towards ownership and operations of port terminals. Even then, Heaver (2002) noted that ‘lines are likely to differ in the way they interpret market developments and in their assessment of the best strategies to capitalise on the opportunities’.

Following this, Panayides and Cullinane (2002) argue that ‘the challenge is, of course, for scientific research to determine in what way and why companies differ and what strategies are adopted in order to capitalise on available market opportunities’. The authors also highlight that there exists numerous literature, (Semeijn & Vellenga, 1995), on why shipping lines would choose to vertically integrate, but there is scarcity in studies addressing this difference of integrating to different extents and the reasons why. Therefore, we aim to fill this gap by focusing on the shipping industry as our case study.

We use Grounded Theory as our central methodology, where we build our theory on why shipping lines’ VI strategies differ by carrying out semi-structured interviews with industry experts and performing the coding process according to Gioia’s approach, (Charmaz, 2006). We use this methodology due to its strength in research topics that are explanatory in nature. The interviewees are selected based on non-probability sampling techniques where we consider the expertise and accessibility of the participants, and representation of fields. We therefore ensure the representation of the business environment by having participants both from the shipping lines and independent businesses that interact with the shipping lines. Thirdly we also consider participants in research who have studied the maritime industry. In total we interview 10 participants spanning the three categories.

To adequately capture the different facets of our research question, we break it down to one theoretical sub question which will be addressed in Section 2 and two empirical subquestions which will be addressed by following our research design in Section 3, namely:

RQ1: *Why would a shipping line want to vertically integrate?*

RQ2: *To what extent have shipping lines vertically integrated?*

RQ3: *Why do shipping lines differ in their choice to vertically integrate?*

The rest of this paper is structured as follows: in Section 2 we explore existing literature on VI in the shipping industry, in Section 3 we detail the methodology used to answer our research questions and the data applied. Next, we present the results of our research in Section 4 and make a discussion in Section 5. Finally we provide our concluding remarks in Section 6.

## **2 Theoretical Framework**

In this section we present the existing literature as it pertains to our central research question. We first present the literature on when and when not to vertically integrate then highlight the history and motivations for VI as a strategy within the shipping industry. Together, this addresses our first research question. Next we explore the dimensions of VI and typologies of firms with regard to their strategic choices. This review then informs our study of the third research question.

### **2.1 When and When not to Vertically Integrate**

Existing literature is quite extensive in the area of integration strategies, where Parola et al. (2015) find that investments in VI as a corporate strategy have a positive effect on corporate

profitability. On the other hand, Zook (2007) argues that the best course of action is to mine new value nearby rather than venturing far, contending that assets that are currently in possession but outside the core provide the richest new cores. In line with this sentiment, Stuckey and White (1993) states that actually a firm should not vertically integrate unless absolutely necessary. In specific, they identify four cases where a firm might consider this strategy, namely (1) if the market is too risky and unreliable (2) if the companies in adjacent stages of an industry chain have more market power than companies in your stage (3) integration would create or exploit market power by raising barriers to entry or allowing price discrimination across customer segments (4) if the market is young and the company must forward integrate to develop a market.

Furthermore, Stuckey and White (1993) also argue that reasons such as ‘to reduce cyclicality or volatility in earnings’ is a spurious reason which does not justify vertically integrating especially since combining returns from consecutive phases of an industrial chain into one portfolio has only a minor effect on portfolio risk because they are frequently positively correlated and susceptible to many of the same shocks, such as shifts in the demand for the final product. They also add that the notion of moving closer to customers as that is where the highest profitability lies is also not an adequate reason to vertically integrate given that even if there exists a positive correlation between the profitability of a stage in an industry and its proximity to final customers, this correlation is weak and inconsistent. Finally, they construct a framework in deciding whether to vertically integrate based on how specialised the required equipment is and whether the potential competitors have market power. Looking at the logistics industry, terminal facilities, (cold) warehouses, pipelines and trucks can be described as specialised and the industry already has big players such as DHL and UPS, therefore using the framework by Stuckey and White (1993) a shipping line can be justified to vertically integrate if the barriers to entry into complementary assets are scaleable.

## 2.2 History of VI in the Shipping Industry

Looking at how strategies in the shipping industry have shifted over the years leading to the current popularity of VI, Paridaens and Notteboom (2022) outline that the post 2008/2009 financial crisis period was classified by fleet overcapacity, low freight rates, poor carrier profitability and corporate reorganizations aimed at carrier survival which meant low dedication towards VI strategies. This period was then followed by the move towards horizontal integration by carriers through strategic alliances and mergers and acquisitions in the context of the ongoing unfavorable market conditions. It was also in this period that we saw the *big ship* paradigm where carriers raced to have bigger and bigger ships, to achieve economies of scale. Finally, the ongoing period 2017-present is described by Paridaens and Notteboom (2022) as ‘totally singular’ due to the exceptional market conditions and the market’s frequent large-scale logistical transactions. This period, Paridaens and Notteboom (2022) argues, stands out as it has witnessed major disruptions such as trade disputes, COVID pandemic and geo-political conflicts that have led to high market volatility and huge profit margins for shipping companies. It is then precisely for this reason that shipping companies have been using VI as a strategy to increase resilience to supply chain disruptions, (Notteboom, Pallis & Rodrigue, 2021).

These developments that have led to the current popularity of VI strategies amongst shipping

lines is also in line with an earlier paper by Fransoo and Lee (2013) who state that there has to be excess capacity in terminals as a result of excessive investment and carriers assuming supply chain control in order for the shipping industry dynamics to change from asset driven to supply chain driven. It is noted however that this current move towards VI is not new for shipping lines. In the 1980s Nedlloyd, a Dutch shipping company, attempted to transition into a fully integrated logistics company, starting with their integrated service *FlowMasters* which was meant to offer customers door-to-door delivery. However, due to operational complexity brought about by the specialised nature of transport that is required, compared to Nedlloyd's experience only in general cargo, Nedlloyd was unsuccessful in integrating its business and ultimately abandoned this strategy, (Piersma, 1992). Piersma (1992) further explain that Nedlloyd was unable to muster the synergies required between the different businesses.

An additional factor that has transcended time, is the high competition, notable in the maritime industry with shipping lines being the most powerful in the supply chain, (Fransoo & Lee, 2013). Further, a study done by Li, Zuidwijk and de Koster (2023) on the capacity strategies used in the shipping industry found that competition was a key driver in influencing the post 2011 crisis (drop in spot rates as a result of excessive capacity investment) investments. Competition and how the different shipping lines respond to it is therefore also relevant in understanding the drivers of following a VI strategy.

### **2.3 Motivations for VI in the Shipping Industry**

Generally, a shipping line may choose to vertically integrate if it determines that the stevedoring and inland transportation markets' present and potential market conditions will not allow it to obtain adequate quality services in terms of measures such as turnaround times at ports or hinterland access, (Cariou, 2008). A common motivation found is the need for efficiency gains, (Álvarez-SanJaime, Cantos-Sánchez, Moner-Colonques & Sempere-Monerris, 2013; Haralambides, Cariou & Benacchio, 2002; Begazo Gomez, Goodwin & Gramegna Mesa, 2018; Pilsbury, Meaney & Müller, 2010). The earlier move towards VI upstream by getting into the terminal operations business seen in the early 21st century for example, was largely driven by the shipping lines' need for greater flexibility, shorter turn-around times and reliability at the port, which led to an overall increase in efficiency in the management of global supply chains, (Haralambides et al., 2002).

Closely tied, or actually a driver for this need for efficiency gains is an increase in demand for customer service reliability, (Haralambides et al., 2002). Paridaens and Notteboom (2022) argue that a growing client demand for a fully integrated maritime supply chain coupled with the shipping companies' solid financial performance appears to be giving them additional impetus to grow their business into more VI. Profit maximisation and in specific through the reduction of transaction costs is also argued to be a major factor affecting a shipping line's decision to vertically integrate, (Heaver, 2002). As the transaction costs associated with maritime logistics, and intermodal shipping in particular, are significant, VI will inevitably lower those costs and enhance company performance, (Parola et al., 2015).

The maritime industry has long been characterised as intensely competitive (Panayides & Cullinane, 2002) and this competition has been found to significantly affect strategies of shipping

lines (Li et al., 2023). As such, some researchers argue that shipping lines use VI as a survival means in this competitive environment, (Panayides & Cullinane, 2002). This can also be seen as the successor of the previously popular trend of horizontal integration which has exhausted its benefits, (Paridaens & Notteboom, 2022). Such competition also presents itself in the form of terminal operators also having their own VI strategies. DP World, the Dubai based terminal operator for example, has expanded its operations into the shipping and logistics business, being a majority shareholder of Unifeeder (Drewry, 2020).

A more recent argument however is that it is the current volatile market conditions and slowing growth in container trade that are driving shipping lines to vertically integrate (Paridaens & Notteboom, 2022). As mentioned, the period from 2017 up until now has been characterised by large supply chain disruptions such as COVID-19, the blockage of the Suez Canal, Houthi attacks of ships in the Red Sea and bottlenecks such as port congestion. The effects of these disruptions have also been varying where the immediate post-COVID era saw large increases in demand for containerised goods and as a result high freight rates whereas the Red Sea attacks forced ships to sail around the southern cape of Africa which led to a contraction in shipping capacity, but only marginally given the very large newbuilding's program in the industry which came under steam in 2024. It is due to this instability of the market that VI can be seen as a means to offer alternative services such as transport through air freight, (Paridaens & Notteboom, 2022).

Other reasons provided include the concept of demand complementarity which is defined as when the demand for a product/service is as a result of the demand for a related product/service. In this case, the demand to transport a container from a specific port to the hinterland comes as a result of the demand to transport that same container from an overseas port to this specific port. Hence, Heaver (2002) argues that 'by participating in both businesses, the carriers capture a part, at least, of what would otherwise be an externality'. An increase in access to shared expertise and market knowledge can also be seen as a motivator to vertically integrate, (Werniers, 2022).

## 2.4 Dimensions of VI

Other than the more generally used upstream versus downstream dimensions of VI, researchers have gone even further to define dimensions that also capture the intensity of VI. For example, Harrigan (1984) outlines four dimensions of VI namely: (1) the breadth of integrated activities, referring to the number of upstream and downstream tasks that a firm performs in-house, (2) the stages of integrated activities, referring to the number of businesses either upstream or downstream that a firm is involved in, (3) the degree of internal transfers, which is the proportion of resources transferred internally and (4) the form of ownership arrangement referring to the proportion of a firm's equity invested in a vertically linked venture.

On the other hand there also exists literature on the intensity of VI based on proximity to the core business. For example, Paridaens and Notteboom (2022) defines a sphere indicating how far away from the core shipping business that MSC, Maersk and CMA CGM are investing in. In this case they provide three dimensions namely: (1) close adjacencies, which include ownership or control of port terminals, liner-owned shipping agencies and competing shipping lines, (2) midrange adjacencies which cover moves into activities such as inland terminal operations and

warehousing and (3) distant adjacencies which include air freight business, last-mile logistics and e-commerce. Besides this, there also exists studies that define dimensions of VI quantitatively, most commonly through providing ways to measure the intensity of VI a firm has invested in, (Wiltenburg, 2023). However there is no consensus in literature on any particular approach of defining the VI dimensions, it largely depends on the research purpose.

## 2.5 Miles and Snow Strategy Typology

The Miles and Snow typology is a classification framework used to identify the different strategies of organisations. The authors analysed organisations in multiple industries and found underlying factors that affected the different strategies. The concept is based upon three premises, first is that over time, successful organisations develop a systematic, identifiable approach to environmental adaptation, (Zahra & John A. Pearce, 1990). This idea is based on the ‘adaptive cycle’ which conceptualises the process in which managers of an organisation make strategic choices, given their differing perspectives on the competitive environment. Miles, Snow, Meyer and Coleman (1978) argue that these choices are only partially determined by environmental factors, rather, organisational structure and processes play a more critical role.

The authors argue that differing strategies are based on how managers address three fundamental problems; the entrepreneurial problem, engineering problem and the administrative problem which refer to the market-product domain, the organisation’s technical system and the problems arising from organisational structure and process, (Zahra & John A. Pearce, 1990). Based on how managers choose to solve these three problems, they can be classified into a typology of four types, which is the third premise. These classifications are shown in Table 1.

	<b>Entrepreneurial</b>	<b>Engineering</b>	<b>Administrative</b>
<i>Prospector</i>	Exploration	Radical Innovation	Adaptation
<i>Defender</i>	Exploitation	Incremental Innovation	Alignment
<i>Analysers</i>	Exploitation	Incremental Innovation	Adaptation
<i>Reactor</i>	Exploration	Incremental Innovation	Adaptation

Table 1: Miles & Snow Strategic Types of Organisations

The prospector is described as constantly finding and exploring new product and market opportunities, very flexible in its technology and administrative system and therefore aims to ‘facilitate rather than control organizational operations’, (Miles et al., 1978). The Defender on the other hand displays almost completely opposite characteristics from the Prospector, where their main aim is stability which they achieve by providing a limited set of products and targeting a specific portion of the market, where they use tactics such as competitive pricing to deter competition. The Analyser lies somewhere between the prospector and the defender, by having their main objective to ‘minimize risk while maximizing the opportunity for profit’, (Miles et al., 1978). Finally, the Reactor is described as a ‘residual’ strategy when the other strategies are employed incorrectly. This is because, this strategy, unlike the rest is not pursued in a proactive way, rather differing responses to a changing environment, therefore lacking stability and consistency.

This typology was made to cut-across industries, providing a means to both describe why a firm took a particular approach in response to its circumstances, and to predict how a firm would respond given a set of circumstances. Therefore in theory, this typology can also be used to explain the reasons for the differing VI strategies amongst shipping lines, however there exists papers that have tested the assertions made in the typology and found them not always to be true. For example, a study by Byles and Labig (1996) on how differing hospitals choose to handle certain administrative practices found that some of these practices cannot be explained by strategic types of Miles and Snow. Therefore, it remains relevant to explore the specific case of the Shipping industry.

### 3 Methodology and Data

In this section we present our research design, where we motivate and describe our methodology. We also present our data and how it is analysed to answer our research question.

#### 3.1 Research Design

##### 3.1.1 Qualitative Methods

As seen from Section 1, VI decisions tend to vary in both motivation and extent across different industries, influenced by unique organizational and environmental factors. According to Nugent and Hamblin (1996), numerous research about VI based on quantitative approaches primarily focus on measures of the extent of VI, and therefore fail to fully capture the underlying reasons for strategic decisions. Qualitative methods on the other hand account for the context-specific nature of VI decisions and can thus capture these contextual idiosyncrasies, which are crucial for understanding why companies within the same industry might adopt different levels of VI.

Furthermore, for an industry such as Shipping which is largely affected by the multiple disruptive events in the past few years in combination with the additional factors that would typically affect strategic choice, it becomes increasingly difficult to obtain suitable numerical data to carry out a quantitative analysis. This would then affect the reliability of quantitative methods, and therefore qualitative methods which are not amenable to measurements would be more suitable, (Hammarberg, Kirkman & de Lacey, 2016).

As seen from the literature in Section 2.4, there are exists multiple dimensions in which we can characterise a shipping line's dedication to VI vis a vis the rest, however to answer the second research question, we select the approach used by Paridaens and Notteboom (2022) that defines the intensity according to proximity to the core shipping business. We use this approach for two main reasons, firstly is that their study provides the most up to date research on strategies of shipping lines and as a result also captures the period of intense uncertainty that shipping lines are currently facing as a result of multiple supply chain disruptions. Secondly is the simplicity of this approach which requires data on the current or planned (in the near future) investments into VI which is easily obtainable from public sources. Given that our central research question is highly dependent on knowing the differences in VI levels for different shipping lines then access to this data is highly crucial.

To explain the reasons behind the differing strategic decisions, we use a grounded theory approach particularly due to its constant comparison feature that allows for the data collected to guide the findings rather than proving or disproving a hypothesis, (Strauss & Corbin, 1998). This inductive method thus generates theory that was derived from data, systematically gathered and analysed through the research process, (Strauss & Corbin, 1998), when data saturation is reached, or when no new insights can be obtained.

### **3.1.2 Single Case Study**

We choose to use a single case study due to the explanatory nature of our research question, which according to Yin (2017) is suitable when seeking an explanation to the ‘why’ and ‘how’ certain conditions came into being, or why certain event sequences occur or do not occur, in our case, why VI strategies differ amongst companies. We go further to select the shipping industry as our focus firstly due to how the industry is characterised by a handful of a few major players, (Geersbro & Ritter, 2014), and hence feasible to do an in-depth analysis of the entire industry using a single case study. This concentration makes it possible to thoroughly examine various VI strategies inside a clearly defined competitive environment.

Additionally, we focus on the shipping industry as it fits well within the aim of a paradigmatic case which, according to Flyvbjerg (2006), has its main purpose to ‘develop a metaphor or establish a school for the domain that the case concerns’. The shipping industry satisfies this description for two reasons, first is the highly complex nature of the industry that involves interactions between parties such as shipping lines, port operators, logistics providers and regulatory bodies. This provides a rich context for exploring the different factors affecting a shipping line’s VI strategy and hence also ensuring that the findings are applicable to other industries with similar intricate structures. Secondly, the shipping industry, and specifically the shipping lines, lie at the forefront of the disruptions that characterise the world trade market today, therefore offering a chance to study how strategies differ in a highly volatile market. For these two reasons we find that the container shipping industry is well suited to illustrate the phenomenon of differing VI strategies in a way that is both insightful and broadly applicable.

## **3.2 Data Collection**

To answer our second research question on the extent that shipping lines have vertically integrated, we use a combination of media announcements from the shipping lines themselves and from news journals, such as Lloyd’s List, reporting the acquisitions made by the shipping lines (or their parent companies) during our research period, 2015-2024. Next we use archival data of the annual reports and minutes from annual earnings calls’ of the shipping lines, which we obtain directly from the websites of the lines or from media press releases. From these reports we collect information of the proportion of revenue earned from ocean shipping vis-a-vis logistics services. For MSC which is privately owned and thus does not publish their financial figures, we analyse their strategy using their newbuilding orderbook.

For our third research question addressing the reasons why the VI strategies of the lines differ, we use a combination of the sentiments shared directly by the lines about their focus strategy focus, and in-depth semi-structured interviews. The former is obtained from the websites of the

shipping lines and from official statements made by the managers and directors of the shipping lines. The in-depth semi structured interviews, which form the basis of our grounded theory approach, consist of 10 interviews with industry experts ranging from 30-80 minutes long. To gain different perspectives on the topic, the interviews were carried out with individuals not only from the shipping lines but also from educational institutions and maritime consultancy firms as seen in Table 2.

Participant	Position	Type of Organisation	Classification
1	Prof. Global Supply Chains & Ports	University	Research
2	Prof. Logistics & Operations Management	University	Research
3	Manager/Lecturer Maritime Economics	Shipping Line/University	Business-Internal/Research
4	Partner	Maritime Consulting	Business-External
5	Head of Global Strategy	Terminal Operator	Business-Internal
6	Senior Transport & Logistics Economist	Bank	Business-External
7	Managing Director	(Reefer) Shipping Line	Business-Internal
8	Director	Port & Logistics Expertise Centre	Business-External/Research
9	Project Leader	Shipping Line	Business-Internal
10	Managing Director	Shipping Line	Business-Internal

Table 2: Overview of Interviewees

In selecting our interviewee sample, we employ three non-probability sampling methods which use non random criteria; namely Theoretical sampling, Purposive sampling and Snowball sampling. Theoretical sampling, a core process of grounded theory, (Butler, Copnell & Hall, 2018), depends on the evolving ideas in data analysis and collection to direct the where, how, and from whom additional data should be gathered in order to form a theory, (Charmaz, 2006). Hence the constant comparison between data and theory results in theory firmly grounded in real data, (Glaser & Strauss, 1967). In our case, we analyse our data after each interview, assess the data saturation which if not yet reached then a decision is made on who next to interview.

We also employed purposive sampling techniques which involves starting the interview process with a pre-determined sample, (Cooper & Schindler, 2014). The decision to use this sampling method is made due to the time and access to interviewees constraints, where we select individuals based on particular characteristics, experiences, or viewpoints. We consider the following factors in picking our sample:

#### *Expertise*

Due to the specific nature of our research question, it is required that the participants possess knowledge and expertise in strategies of shipping lines and how different players in the maritime industry interact. Further, experience in this area is also required in order to capture the perspectives on the changes that shipping lines have gone through over the past years.

#### *Accessibility*

We also consider accessibility and availability of individuals to participate in the interview particularly due to the broad range of factors affecting the shipping lines' strategies that requires time to discuss in detail.

#### *Representation*

Given that our research focus is on the differences of strategic choices of lines, then an external view is also required to gain a holistic understanding of the factors affecting differing strategies. Therefore we aim to interview three types of individuals; the first two are within the business

environment, consisting of individuals working in the shipping lines and those working with shipping lines independently. The third type of interviewee is outside the business environment, namely in research.

The final sampling technique we use is snowballing which we use to address the time constraints. This is a process where those who have been interviewed are asked who else they could recommend for an interview, (Merkens, 2004).

To carry out the interviews, we make an interview guide which can be found in Appendix A, inspired by Gijbers (2020). For all interviews, we start with the same opening question on what the participant would consider the most important factors a shipping line would take into account in their VI strategy. Based on the response provided, those factors are explored further along the interview. The purpose of this structure is to eliminate any interviewer bias either from previous interviews or from research. Only after the response to the initial question is fully explored, does the interviewer ask specific questions based on the responses from previous interviews. Therefore the interview guide differs from interview to interview, based on the level of data saturation reached, however the guide in Appendix A highlights all the additional topics (apart from those raised by the interviewees) covered during the interviews. It is also noted that the views shared by the interviewees are personal opinions, and do not represent the opinions of the company they work at.

### **3.3 Data Analysis**

The first part of the data analysis involves comparing the extents of VI moves made by the top ten shipping lines and analysing the strategic approaches of the shipping lines based on their financial reports and how they brand themselves. This is done to address both the second and third research questions on how and why the strategic decisions differ. Once an overview has been made of the different strategies, we analyse the interviews in two stages; first is the preparation of the interview transcripts for the coding process and then the coding and theory building is done in the second stage.

In the first stage we go through the interview audios and transcripts checking that the transcription tool correctly captured what was said. All interviews were carried out in English via Microsoft Teams, which made both the recordings and transcriptions. Simultaneously, memos written during the interviews, whose purpose is to ‘capture the frontier of the analyst’s thinking as he goes through either his data, codes, sorts or writes’, (Glaser, 1978), were also consolidated.

The second stage in the process is characterised by a coding and re-coding of the data based on Gioia’s method allowing for the systematic presentation of both first-order (informant-based) and second order (researcher-based) analysis, which taken in tandem allows for ‘a qualitatively rigorous demonstration of the links between the data and the induction of this new concept’, (Gioia, Corley & Hamilton, 2013). The process starts with an open coding approach which yields provisional codes made by segmenting the raw data. This approach also allows for openness to any possibilities from the data, (Gioia et al., 2013). The open coding process results in first-order codes which are used in the next step; focused coding, where the least grounded codes were either merged with other related codes or deleted altogether. Least grounded codes are those that have the least number of quotations from the interviews supporting them. They are

merged with other codes if they are closely related and deleted if there is no relationship with other codes. From a total of 284 raw codes, 38 first order codes were derived.

Axial coding which involves making links with related categories of codes, is used to come up with the second-order codes. Finally, the potential connections between the categories that were created during the focused coding step were imagined through theoretical coding, (Charmaz, 2008). It is in this stage that a story-line is created to form our grounded theory. All coding is done using Atlas.ti version 24, a computer-assisted qualitative data analysis software.

## 4 Results

### 4.1 Extents to which Shipping Lines are vertically integrated

In this section we highlight the actual VI extents that the major shipping lines are invested in. There exists a natural differentiation between shipping lines that pursue a strategy of VI through contractual agreements with stevedoring companies (and other companies along the supply chain) and those that develop their own services along the logistics chain and an additional distinction between those shipping lines who have stronger control over the stevedoring operations via dedicated terminals and those with weaker links such as through joint ventures with the stevedoring companies, (Cariou, 2008).

In using the approach of Paridaens and Notteboom (2022) to classify the extents of VI amongst shipping lines, our first step is to identify the shipping lines that we will take into consideration. A list of the top 100 container shipping companies based on consolidated figures of the TEU of both existing fleet and orderbook is provided on (*Alphaliner Top 100*, 2024), however we select only the top 10 as our focus given that these shipping lines already take up 84.4% of the market share and therefore is reasonably representative of the industry as a whole. We present these shipping lines in Table 3.

Rank	Name	Headquarters	Market Share	Ownership
1	MSC	Switzerland	19.7%	family-owned
2	APM-Maersk	Denmark	14.6%	public
3	CMA CGM	France	12.5%	private
4	COSCO Shipping lines	China	10.8%	state-owned
5	Hapag-Lloyd	Germany	7.2%	public
6	Ocean Network Express	Japan	6.3%	private
7	Evergreen Marine Corporation	Taiwan	5.7%	public
8	HMM Co. Ltd.	South Korea	2.9%	public
9	Zim Integrated Shipping Services	Israel	2.4%	public
10	Yang Ming Marine Transport	Taiwan	2.3%	public

Table 3: Top 10 Container shipping companies

Next we define the three scopes of VI intensity as suggested by Paridaens and Notteboom (2022), however instead of focusing on the acquisitions of the shipping lines between 2015-2022 as the mentioned paper does, we update the period to 2015-present(2024). These scopes represent

the classifications of these acquisitions based on proximity to the core liner business and are as follows:

1. **Close Adjacency:** port terminals, liner-owned shipping agencies and competing SLs. These are sectors in which relatedness with the core business is known to be high.
2. **Midrange Adjacency:** inland terminal operations and warehousing. These are sectors in which relatedness with the core business is known to be medium.
3. **Distant Adjacency:** air freight business, last-mile logistics and e-commerce, and other activities showing a low relatedness with the core business.

Based on these three scopes, we classify the acquisitions and other investments i.e. through joint ventures made by the ten shipping lines in the 2015-2024 period as seen in Table 4.

Line	Core	Close Adjacency	Midrange Adjacency	Distant Adjacency
<b>MSC</b>	Ignacio Messina ('19)	Total Terminals Int. ('17) Logistica Intermodal ('21)	Log-in Logistica ('21) Torrejon Railway Terminal('21) CP Carga ('16) Bolloré Africa ('21) Clasquin ('24) HHLA('23)?	AlisCargo Airlines ('23)
<b>APM-Maersk</b>	Hamburg Sud ('17)	Group Maritime TCB ('16)	Grindrod Int. ('21) KGH Customs Services ('20) Pilot Freight Services ('22) Vandegrift ('19) Martin Bencher ('23)	HUUB ('21) B2C Europe ('21) Performance Team ('20) Visible SCM ('21) LF Logistics ('21) Order 2 freighters, lease 3 ('21) Senator International ('21) Maersk Air Cargo ('22)
<b>CMA CGM</b>	La Meridionale ('23)	GCT Terminals('23) Valencia, Bilbao Terminals('23) OPDR('15) Fenix Marine Services('21) Containerships ('18)	Spedag Interfreight ('22) CEVA Logistics ('19) GEFCO ('22) ASTI ('21) Bolloré Logistics ('24)	Colis Privé ('22) Oxatis ('20) Ingram Micro Commerce ('21) CMA CGM Air Cargo ('21) Air France-KLM 12 aircrafts by 2026
<b>COSCO</b>		Hamburg CTT ('23) RSGT ('21) Chancay Terminal ('19) Zeebrugge Terminal ('17) Euromax Terminal ('16) Pireaus port ('16) Abu Dhabi Terminal ('18) Vado Terminal ('16) Tollerort Terminal ('23) Tollerort Terminal ('23)	Trasgo ('24)	JD Logistics ('17)
<b>Hapag-Lloyd</b>	DAL('22) UASC('17) NileDutch('23)	Wilhemshaven ('23) JM Baxi ('23) SAAM ('23)	Spinelli Grp. ('22)	
<b>ONE</b>		TraPac & YTI ('23) Rotterdam World Gateway ('23) Magenta Singapore ('18)		
<b>Evergreen</b>		Euromax Terminal ('23)		
<b>HMM</b>		Busan Terminal ('19) Total Terminals Int. ('17)		
<b>Zim</b>		Joint venture: Hai An ('23)		
<b>Yang Ming</b>			ECU-Line Bulgaria ('15)	

Table 4: Adjacency moves by the top 10 shipping lines between 2015-2024

From Table 4 the differing VI strategies of the lines becomes clearer, where the top three; MSC, Maersk and CMA CGM have made significantly more investments in businesses further away from the shipping business compared to the remaining lines. Whereas it seems that MSC and Maersk have not made significant investments in the close adjacency which majorly comprises of port terminal operations, it should be noted that the two lines already had well established terminal units before 2015 i.e. Terminal Investment Limited (TiL) and APM Terminals both of which continuously invest in new terminals. Amongst the remaining lines, more recent investments particularly in port terminals is evident as lines aim to secure their container

terminal capacity, while barely making any acquisitions closer to the hinterland.

To substantiate the investments outlined in Table 4, we consider the strategies that the lines are following.

### MSC

MSC, a privately owned company, has followed an intense ship-buying for the past few years, to the point of overtaking Maersk as the largest shipping lines by volumes in 2020, (HJ, 2024), (Oliver Telling, 2023), (HJ, 2022), (Executive, 2022). According to *Alphaliner Top 100* (2024), MSC has 100 ships in its orderbook which represents 20% of its current capacity. At the same time the line has logistics subsidiaries such as Medlog and Medway, however Paridaens and Notteboom (2022) finds that the MSC shipping name, stands out more as the company is more focused on its core business.

### Maersk

On the other hand, the strategy of Maersk has proven strikingly different where their main strategy is ‘transforming A.P. Moller - Maersk from a diversified conglomerate to be the global integrator of container logistics, connecting and simplifying customers’ supply chains’, (APM-Maersk, 2023). The company has been very explicit on their integration strategy since 2016 where the board of directors made an announcement that ‘the main growth focus of A.P. Møller - Mærsk going forward will be delivering best in class transportation and logistics services as an integrated Transport & Logistics company’, (Maersk, 2016). Later in 2022, the then Maersk CEO, Søren Skou, reiterated during the year’s earnings call that ‘our strategy is not to gain market share in Ocean, it is to gain share in our customers’ wallet of logistics spend’, (Alpha, 2022). These statements reflect the multiple acquisitions in the distant adjacency scope and fewer in the closer adjacency in Table 4.

Further, looking at the revenue breakdown of Maersk in 2017 after the initial logistics integration announcement was made compared to the 2023 revenue breakdown in Figure 1, the company is also seeing increasing returns from their logistics business, and also reflects the shift in focus away from expanding their ocean business.

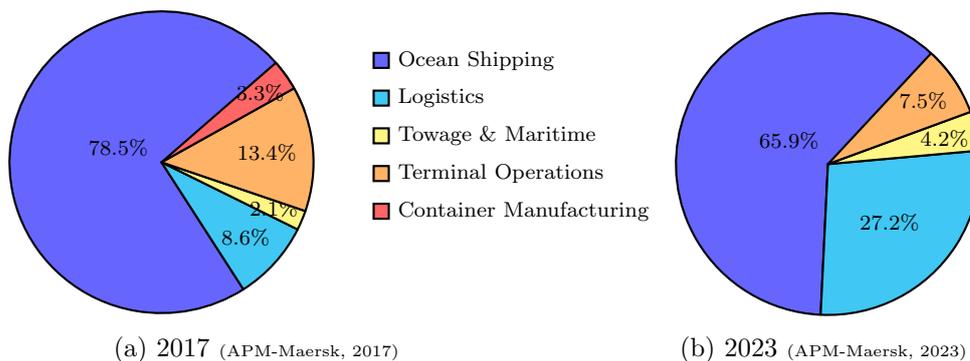


Figure 1: Maersk Revenue Breakdown

### CMA CGM

The CMA CGM strategy shows similarities to that of Maersk in that they consider logistics an integral part of their business, which is also explicitly shared on their website where they state that ‘the complementarity between shipping and logistics is a key part of the CMA CGM

Group’s identity, and that of its subsidiary CEVA Logistics and its airfreight division.’ Further, the company views the logistics business, particularly the operations of Bolloré Logistics, as offering the critical mass required to withstand the cyclical changes of the industry, (CGM, 2024). Similarly, the revenue breakdown of CMA CGM between 2017 and 2023 reflect the increased focus on logistics as seen in Figure 2.

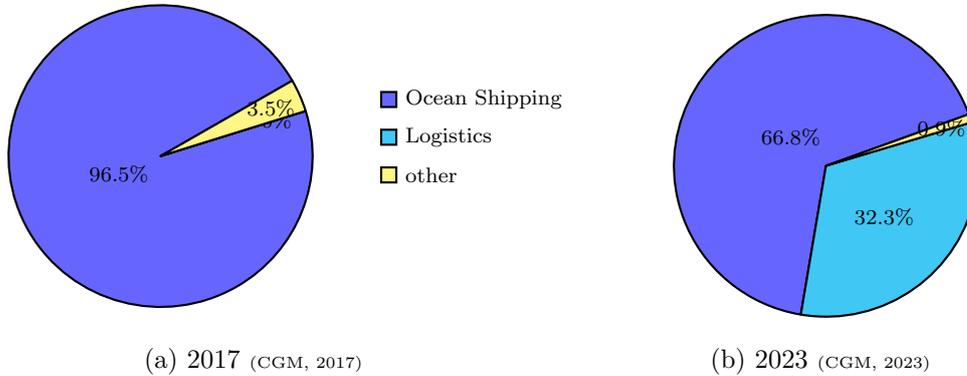


Figure 2: CMA CGM Revenue Breakdown

### COSCO

COSCO’s strategy lies somewhere between that of MSC and Maersk/CMA CGM where they show a strong interest but not a complete commitment to logistics integration. The vision statement of the company is ‘to undertake the mission of globalizing Chinese economy, consolidate advantageous resources, take global shipping, integrated logistics, and shipping related financial services as core business, and develop diversified industrial clusters, so as to build a world-leading business entity that provides integrated logistics and supply chain services’, (C. C. S. C. Ltd., 2016). At the same time, most of the moves into logistics integration that the company has made has been either in port terminals or through joint ventures such as the strategic cooperation framework signed between COSCO Shipping Lines and Dell (China) in 2019 ‘to explore the potential for collaboration in fields like logistics, digitalisation and AI’, (Lines, 2019) or the Memorandum of Understanding signed with Bolloré Transport Logistics also in 2019, to explore ‘new opportunities for cooperation in transport, logistics and port infrastructure’, (Team, 2019).

This low intensity in logistics integration is also evident in the company’s revenue breakdown, where in 2017 96% came from container shipping, (Shipping, 2018) and 94.17% in 2023, (Holdings, 2024).

### Hapag Lloyd

The *Pureplay* strategy of Hapag Lloyd lies on the other side of the spectrum, where they aim to stay close to the core as a door-to-door container carrier supported by their terminal and infrastructure division. Outlined in their 2030 Strategy, the company states its intention to ‘remain true to our [their] core business, liner shipping, but are expanding and strengthening it as part of the *Pureplay Plus* model’ where they are setting up a new terminal infrastructure business segment, (Hapag-Lloyd, 2024a).

The effect of this strategy is also reflected in their revenue which was all allocated to a single segment; container liner shipping in 2017, (Hapag-Lloyd, 2018) while in 2023 their new Terminal

& Infrastructure segment accounted for 1% of the year's revenue, (Hapag-Lloyd, 2024b).

#### ONE

ONE similarly does not indicate much focus on integrated logistics and instead reiterated their strategy during the third quarter earnings call for financial 2023, stating that their primary focus remains to enhance digitalisation, operational efficiency and risk management, to further increase industry leading profitability and safety, to achieve sustainable growth. Further, they do not report on any revenue breakdown based on business segment.

#### Evergreen

Evergreen has a comparable strategy of focusing on efficiency of their core business, where they report an increase in proportion of revenues attributed to the container shipping business from 89.89% in 2017, (Corp., 2024a), to 92.42% in 2023, (Corp., 2024b), however do not share the revenue breakdown from other businesses.

#### HMM

The strategy of HMM indicates an interest in integrating further along the supply chain, where they define themselves as a global integrated logistics and shipping company connecting customer values. Additionally, in their mid to long term strategy, they plan to invest over KRW 15 trillion (USD 10.8 billion), of which two thirds will be allocated to 'secure core assets such as ships, terminals, and logistics facilities', (Team, 2022). The revenue breakdown shows a slight decrease in proportion attributed to container shipping between 2017 and 2023, from 86.6%, (H. C. Ltd., 2024), to 82.9%.

#### Zim

Zim shows a similar strategy of focusing on the core business through their fleet renewal program which is intended to 'improve the cost structure and support long-term profitable growth'. The proportion of revenue from shipping containerised cargo however decreased from 98.7%, (Services, 2024), in 2017 to 76.5% in 2023, (Services, 2018).

#### Yang Ming

The investment strategy outlined in the 2023 annual report of Yang Ming is 2 fold: (1) study industry related investment opportunities such as terminals and depots for diversification and (2) seek other cooperation opportunities with logistics-related firms, which, similar to COSCO, explores integrating into the logistics business through partnerships with related firms rather than doing it internally, or via acquisitions of logistics firms. That being said, the revenues from logistics services has increased such that Yang Ming now reports it in its own business segment, accounting for 3.7% of revenues in 2023, while not being reported in its own segment in 2015. The proportion of revenues from container shipping has only minimally decreased from 94.1% to 93.3% between those two years, (Transport, 2015) (Transport, 2023).

### **4.1.1 The Role of Strategic Alliances**

Apart from the individual strategies of the shipping lines, alliances are also used to leverage strategic objectives. Ding and Liang (2005) carried out a study on how to select partners of strategic alliances in liner shipping using a multi-criteria decision making methodology. They found that the two essential criteria considered is first market complementarity, which is described as the potential of the lines to strengthen each other, for example through the fleet

size or terminal access that the carriers have, (Ghorbani, Acciaro, Transchel & Cariou, 2022). The second criterion is compatibility of the carriers referring to the degree of similarity between the carriers such as through their culture and strategic fit, (Ghorbani et al., 2022). Therefore, considering the composition and objectives of the alliances may lend a role in explaining the differing strategic paths of the lines.

Table 5 shows the existing strategic alliances amongst the shipping lines and those coming to effect in 2025, where we see that until 2025 ZIM is the only non-allied line with the exception of having collaborations with the 2M alliance. Between 2014 and 2021, the 2M alliance which is a vessel sharing agreement, held 29% of global market share, (Statista, 2023). It's establishment in 2014 coincides with the period of horizontal integration strategies characterised by strategic alliances and mergers and acquisitions (M&As) described by Paridaens and Notteboom (2022). It is argued by Paridaens and Notteboom (2022) that 'by reaching a more optimal size, lines can chase economies of scale and exercise overall cost control through horizontal integration'. Evidently, the main objective of the 2M alliance was to ensure competitive and cost efficient operations on their trade lanes.

<b>Alliance</b>	<b>Members before 2025</b>	<b>Members after 2025</b>
2M Alliance	MSC Maersk	
Gemini		Maersk Hapag-Lloyd
OCEAN Alliance	CMA CGM COSCO Group Evergreen	CMA CGM COSCO Group Evergreen
THE Alliance	Hapag Lloyd Yang Ming HMM ONE	Yang Ming HMM ONE

Table 5: Alliances

However, the 2M alliance is now coming to an end in 2025 and from a joint statement of the CEO's of the two lines, 'discontinuing the 2M alliance paves the way for both companies to continue to pursue their individual strategies', (Maersk, 2023). This can be related to the compatibility criterion stated by Ghorbani et al. (2022), where the strategies of the two lines which we outlined in the previous section are no longer aligned. According to Oliver Telling (2023) however, the alliance is seen more as a 'marriage of convenience' given that the two lines are really opposites in working style and culture and therefore the reason for the discontinuation of the alliance is not that they are no longer compatible, rather, it is no longer convenient to have a large vessel sharing agreement given the bumper profits seen post-COVID that enabled the lines to invest in their individual strategies. Therefore the 2M alliance can be described as made to support a horizontal integration strategy, which Maersk is no longer focusing on.

Looking at the newly formed Gemini Cooperation which is also a vessel sharing agreement,

but with a relatively smaller carrier, Hapag-Lloyd, it is interesting to see how this alliance differs from the 2M alliance, especially in its relation to a vertical vs. horizontal integration strategy. The main objective of the cooperation according to a joint statement of the two CEOs is to offer a flexible and interconnected ocean network focusing on reliability and quality, (Maersk & Hapag-Lloyd, 2024), at the same time, an earlier statement made by the Maersk CEO during an interview, mentioned that Maersk and MSC had ‘very different views’ on ‘cost versus quality trade-offs’, (Oliver Telling, 2023). The focus on quality can therefore in part offer an explanation for the change in alliances.

In terms of the role the Gemini cooperation plays in the VI strategies of the two lines, we further look at the statements made by the two lines. For Maersk, they see the cooperation as ‘an even stronger foundation for our integrated logistics offering’, (Clerc, 2024), while Hapag-Lloyd see the cooperation as a means to ‘benefit from efficiency gains in our operations’, (Maersk & Hapag-Lloyd, 2024). This is a direct reflection of their individual strategies outlined in the previous section, therefore despite having very different VI strategies, the alliance can be seen as an amplifier for the individual strategies. It will however also be interesting to see if an alliance with two carriers with a different focus in the supply chain will influence a change in VI strategy for either of the carriers.

The remaining alliances will not be changing in 2025, other than Hapag-Lloyd leaving THE Alliance, therefore we do not expect new effects on individual VI strategies.

## 4.2 Why the VI strategies differ

In this section we present the results of our coding process, that is, the most grounded factors identified from the interviews that explain why the VI strategies of the shipping lines may differ and explain them using quotations from the interviews. The set of 38 first and 7 second order grounded codes obtained can be found in Tables 6 and 7 which are ordered from the most grounded to the least. The tables show our first order codes and how grounded they are in the data, meaning the number of quotations from the interviews that the codes were derived from or the frequency the code was mentioned across interviews. We classify the first order codes into more general second order codes with the corresponding number of quotations. As some quotations may describe more than one first order code, then the total number of quotations of the second order category are either less than or equal to the sum of the quotations of the individual first order codes.

Second Order Codes	First Order Codes	Grounded in Data
<b>Competitive Strategy</b>	Shipping lines changing their brand to logistics provider	4
	Differing company growth history	10
	Copying vs. Wait and See strategy	13
	Focus on providing a cost efficient solution on the sea leg	6
	Organisation culture	8
	Some shipping lines have fear of losing if they don't also integrate	2
	Some shipping lines opportunistic strategy while others a more dedicated strategy	3
	Aim to increase their value in the supply chain	9
	Shipping lines search for a distinguishing factor	8
	Vertically integrating as a means to support their core business	6
	Differing vision/ambition amongst the shipping lines	7
	<b>Total</b>	<b>63</b>
<b>Customer Needs</b>	Customer Demand for an Integrated Service	25
	Aim of creating strong ties with customers	19
	Cargo Diversity	6
	Customers wanting to manage their own trucking	8
	<b>Total</b>	<b>44</b>
<b>Market Position</b>	Larger shipping lines more likely to offer last mile	4
	'COVID profits' enabler for VI for 'copying' companies	5
	Need to invest profits from COVID	12
	Financial Capacity	14
	In-house capabilities and whether a line is well positioned to vertically integrate	17
	Shipping lines have high market power in the supply chain	2
	Shipping lines are too big, such that there's no room for further expansion within shipping	5
	<b>Total</b>	<b>38</b>

Table 6: Code Scheme

<b>Risk Management</b>	Risk vs. Synergies	3
	Risk of competing with your customers if you vertically integrate	3
	Complexity of vertically integrating	2
	Difficulty of passing down the VI costs to customers in the past	1
	Not all shipping lines are convinced that VI is the best strategy	3
	Vertically integrating to mitigate risks brought about by cyclical and predicted low freight rates	15
	Risk Appetite	10
	<b>Total</b>	<b>33</b>
<b>Shareholding</b>	Differences from being market owned, government owned and family owned	16
	Having a shareholder that is a logistics provider discourages vertical integrating	2
	<b>Total</b>	<b>16</b>
<b>Value of Logistics Providers in the Supply Chain</b>	Higher margin in logistics than in shipping	8
	3PLs are able to handle issues such as overcapacity	2
	Distribution Logistics is not that rewarding	2
	Logistics offers a more tailored service to customers	2
	<b>Total</b>	<b>13</b>
<b>Equilibrium of Strategies</b>	All shipping lines are moving to last mile, they differ instead in the speed of getting there	8
	International trade affects the speed of shipping lines' move into last mile logistics	3
	Strategies tend to oscillate around an equilibrium	3
	<b>Total</b>	<b>12</b>

Table 7: Code Scheme continued

#### 4.2.1 Competitive Strategies

Grounded in 63 quotations, the history of and current competitive strategies of the shipping lines provides a major reason why shipping lines differ, see Table 6. This highlights the degree of path dependency between strategies used in the past and present. The most common perspective raised is the difference between a *copying* strategy and a *wait and see* strategy that is being seen amongst shipping lines today. There is almost a full consensus that Maersk is leading with the VI strategy and a few others are following due to a fear of being left behind, whether or not they are fully convinced that it is the best strategy.

*“...And I think with the other companies you see a lot of copycat behaviour. They’re not, I’m personally convinced that they are not all convinced that this is the best idea since the invention of sliced bread, but it may be a good invention. And then, yeah, s\*\*\* if we don’t do it, we lose out.”* - [Managing Director at a Shipping Line]

*“I think MSC and CMA predominantly - Hapag-Lloyd is a bit of a follower in this- just see Maersk doing all this, they are a bit dubious whether it’s going to work or not, at the same time, if we can buy a logistics company that makes money, we have the cash and it makes money...and then we can al-*

*ways see how we can integrate it and we're not losing out on it."* - [Managing Director at a Shipping Line]

Additionally, a further distinction is made between the shipping lines that are following, those that are leading in the implementation of this strategy and those that are waiting to see, namely between European Shipping lines and Asian shipping lines, where European lines are described as the followers of Maersk's strategy, while the Asian lines follow the wait and see approach.

*"I have to add to this, the Asian lines seem to have a bit more of a wait and see attitude. The European lines seem to more or less copy Maersk."* - [Managing Director at a Shipping Line]

*"COSCO they follow. They follow where they look at what MSC, what Maersk is doing, what is gradually happening in all of this and what would be the benefit focus scope. So for instance, they observe for a couple of years and now they're going to do a move into logistics, but this is China so they need to bring also the Chinese partners along."* - [Manager at Shipping Line & Maritime Economics Lecturer]

These distinctions are closely tied to the Miles and Snow Typology in Section 2, where companies in an industry can be classified by how they respond to their circumstances. In our case the prospector is comparable to the dedicated strategy attributed to Maersk, whereas the reactor has some similarities to the opportunity based strategy attributed to MSC, with some exceptions.

*"So I also have the feeling that for MSC it's more opportunity based as an opportunity comes up and then they say, OK, this is really an important market for us. So let's go after it and that's something that they are doing very successfully. The same is the case with CMA, and I have the feeling, ...that for Maersk it's a bit more dedicated and focused with some exceptions in there".* - [Head of Global Strategy at a Terminal Operator]

The next most common factor affecting why competitive strategies of the lines differ is their differing growth history, which is closely tied with the organisation culture. The idea of organic growth versus growth via acquisitions is highlighted to describe why it may be easier for some lines to pursue a VI strategy than others. It is argued that having an organic growth history would support more of a horizontal integration strategy, where the shipping line would grow by expanding its current business whereas having a growth by acquisition history would favour venturing into new businesses, in this case logistics and last mile.

*"Then of course we have different strategies. For example, MSC always before COVID has been growing organically. We had been increasing number of vessels for example, trying to invest in the close business like terminals or maybe developing land services for their containers, similar to Maersk, but for example, COSCO they always had been growing by acquiring other companies, historically, even what is CMA CGM? This is CMA plus state company French company was acquired by CMA. Yes, some point so different strategies for growth."* - [Managing Director at a Shipping Line]

This idea is used particularly to describe the difference between the integration strategies of Maersk and MSC, where the former is known to have been a highly diversified conglomerate even

before the official launch of its integrated service strategy, and the latter has its history in rapid ship buying. This idea is also used to describe the strategies of MSC and Maersk on one hand and COSCO and CMA CGM on the other hand, arguing that Maersk-like MSC- has a history of expansion by increasing number of vessels whereas a line like CMA CGM was formed from the acquisition of state-owned CGM by CMA.

*“... I can say for Maersk in particular, I mean we, we came from a background of being a conglomerate with different non related businesses. They were kind of run as a portfolio of different businesses and where of course the idea was that the owner would invest where would make sense, now we are a focused logistics company and then therefore it makes sense that we see how we can be based on one set of customers basically that can be offered the full range of solutions.”* - [Project Leader at a Shipping Line]

*“Let’s say corporate in structure MSC, literally a family firm, right where Mr Aponte says go, go, go, and Maersk is this entire corporate and it’s still a family firm, but a corporate pyramid.”* - [Partner at a Maritime Consulting Company]

Another factor found to be affecting the differing competitive strategies of the lines is the growing search for a distinguishing factor, specifically to increase their value in the supply chain. On the one hand, there are lines that believe that their heavy asset base lends them significant power in the supply chain while other lines believe that this is not enough to differentiate themselves in a competitive market.

*“And others say, well, actually we don’t think that our asset base is that much of a distinguishing factor. So we need to do something else. To make ourselves stand out and Maersk is an example of that...competition is there and to avoid a race to the bottom, share of differentiation may be key.”* - [Professor of Global Supply Chains & Ports]

Supporting the idea that shipping lines that are vertically integrating may also be doing it as a support for their core business, is another grounded perspective that by increasing their value in the supply chain, they ensure more commitment for their cargo. This is particularly the case for the acquisitions of terminals which cuts across all considered shipping lines. Having dedicated terminals is increasingly seen as a necessity for the survival of the core shipping business rather than a growth strategy. Therefore this explains why most shipping lines have vertically integrated at least until the terminal operations.

*“So this could either be because they might believe that going into integration will help them to create more value in the supply chain and therefore also create more revenues. Or that they feel that by VI they get more commitment from the supply chains that they work with and thereby they can secure their business.”* - [Professor of Global Supply Chains & Ports]

It is however noted that how the lines view the underlying purpose of a VI strategy still differs and this is then what dictates where a line would integrate further into the supply chain. Whereas it is mentioned that having dedicated terminals is generally seen as a necessity amongst

most lines, this is not necessarily the case the further along the supply chain you go, towards the end-customer. For some shipping lines, having not only terminals, but also logistics services is seen as central to their businesses, so much so that they are going to the extent of changing their brand to identify as an integrated logistics service provider, rather than a shipping line as seen in Section 4.1. Therefore, for these lines, integrating into logistics is perceived as an additional offering to their existing customers, in order to gain more value. For other lines, VI is, as mentioned, seen as supporting their bottom line, therefore will only integrate until as far as they deem sufficient to support their core business.

*“I mean, companies will see that differently, which I think is partly because they see it as a value for their bottom line, partly it can be service oriented. I think those are actually the two that are dictating whether the companies go further into VI or not.”* - [Managing Director at a Shipping Line]

*“So I think of it as if you take an example of Maersk and CMA who have relatively similar strategies, I think they see this as being a place to offer better solutions to the end customers and thereby being able to capture a bigger part of the value.”* - [Project Leader at a Shipping Line]

*“...it’s how you see core business. And you can of course say I think Maersk would see it’s core business as like end to end logistics.”* - [Project Leader at a Shipping Line]

*“Let’s not call them shipping lines, let’s already call them global international logistics companies, they can propose to them a final solution, not only proposing existing solution, but even by building new solutions for big customers.”* - [Managing Director at a Shipping Line]

This then brings the final factor found to be affecting the differing competitive strategies, which is the vision to be a global integrated logistics service provider that some shipping companies have, which is largely affected by the leadership. Key features noted in the leadership of the shipping lines, is having too many managers as a deterrent for a long term vision, and having a new generation of younger leaders who do not have the background of being a captain rather a background in commercial strategy. Finally it is also highlighted that due to the high financial cost required to integrate, this vision has previously been a challenge to realise, until the recent record profits that shipping lines saw during the immediate post-COVID period which we discuss in section 4.2.3.

*“So those [market owned lines], they want to expand, but they might not have the vision, the cash or the length of the management to do that because to realize particular integration, you really need it to be organically or externally which takes many years and it is not like five years, you count it in decades.”* - [Manager at Shipping Line & Maritime Economics Lecturer]

*“So this is why, for instance, Hapag Lloyd was not doing good because it had too many managers and not good vision of where to go. So for Hapag Lloyd they had to focus only on the container the maritime like segment.”* - [Manager at Shipping Line & Maritime Economics Lecturer]

*“I would say initially it was a dream for most of the container shipping lines to become not only container shipping line but a logistics company. Yes, but previously there were no opportunities, there*

*was not enough, let's say cash for it, possibilities, knowledge.*" - [Managing Director at a Shipping Line]

*"And during COVID, the companies got a lot of cash, and they need to invest, that's why they start, first of all, to invest in their dreams. I would say the things they planned for before."* - [Partner at a Maritime Consulting Company]

#### **4.2.2 Customer Needs**

The second most grounded perspective is that the differing VI strategies are largely driven by the customers. Most commonly highlighted is the demand from customers for an integrated service, which is not uniform amongst shipping lines. The first reason affecting this non-uniformity is the size of the major customers of the respective shipping lines, where the relation of the larger the customer, the more likely they are to demand for an integrated service instead of planning it themselves, especially because shipping lines are also more likely to provide tailored services to their larger customers. For smaller customers, planning their own logistics solutions through freight forwarders may be more cost effective.

*"I would say in general, uh freight forwarders is a good solution for small and medium companies. For the large enterprises of course, it's much easier for them to go for the shipping line who has opportunity to propose to them let's say a specific solution, and even build solutions for them."* - [Managing Director at a Shipping Line]

*"So I would say of course the customers are much interested except cases when customers would really save the money and they do everything by themselves."* - [Managing Director at a Shipping Line]

Another reason affecting this non-uniformity is the complexity level of the business of major customers of the respective shipping lines, as customers demand for an integrated solution by a single provider in order to reduce the complexity on their side. This becomes especially apparent when there are disruptions in the supply chain that lead to problems such as port congestion, which are increasingly common in today's market.

*"Actually for COVID I think at least there's been an increased ask for customers to have a provider they can rely on to take care of the interim logistics needs. If, for example, if something goes wrong with port congestion or other issues, then it's a lot easier to deal with the owner of the assets rather than a middleman."* - [Project Leader at a Shipping Line]

*"I also think that it differs amongst both customers and also amongst the shipping lines, and that there are customers that might as well need to have such a one stop shopping solution and such integrated service. I think there's also customers that may be different."* - [Director at a Ports & Logistics Expertise Centre]

*"You know, a company like Hapag Lloyd, for example, they're pure play Ocean carrier, whereas others like Maersk like CMA choose to position themselves in comparable ways. And I believe the reasons are the same and I can add, it's also fair to say that many of our customers have very complex businesses*

*and probably also increasingly are willing or see a need to simplify it from their perspective, meaning that they want to put more of their business with one logistic provider. And in that sense, of course, there's an opportunity in the market to be that logistics provider and offer that integrated service.”* - [Project Leader at a Shipping Line]

Finally, it is also highlighted that the development of digitisation has played two key roles, first is that it has brought the final customer closer to the shipping lines, and second it acts as an enable for VI as it enhances interoperability and the synergies associated with linking multiple businesses under one company. The former has been enabled by the rise of e-commerce, where some shipping lines have begun offering this service directly to the end customer, but also means that there is more pressure from the customers to know exactly when shipments will arrive. Therefore, depending on how close the shipping lines are to the end customers will affect how willing they are to offer an end-to end solution.

*“...the world is changing and as a result of e-commerce, consumers are much more closer as a result of digitization and they[shipping lines] want to control the supply chain to communicate best with the clients.”* - [Transport & Logistics Economist at a Bank]

The second most grounded factor we find is the push from shipping lines to create stronger ties with the customers as a means to capture more parts of the market or to distinguish themselves from other shipping lines. For some shipping lines, this is achieved by offering an end-to-end solution while for others its offering a cost-efficient solution on a single segment of the supply chain.

*“So I think it as if you take an example of Maersk and CMA who have relatively similar strategies, I think they see this as being a place to offer better solutions to the end customers and thereby being able to capture a bigger part of the value.”* - [Project Leader at a Shipping line]

Another key point raised was the diversity in cargo traded which also has different requirements. It is argued that the diversity in cargo is so high such that it is too complex for the shipping lines to become intimate with the customers. Furthermore it is noted that this is especially the case for customers using reefer containers, who prefer to handle their own logistics services due to the high value nature of their products. Therefore shipping lines specialised in reefer containers are less likely to commit to a dedicated VI strategy, they instead only offer the logistics services through partnerships, if directly asked by a customer. It is however still interesting to see that Maersk has also invested in cold warehouses at the Maasvlakte, though it is revealed that even for them, difficulties arise.

*“In reefer specifically, you have a lot of people that have their own trucking, their own cold store, so they don't want to be forced into a situation whereby they have to use the tools of somebody else, if only because it makes their own tools superfluous. That happens a lot for reefer because reefer is very high value products and also perishable that makes it different.”* - [Managing Director at a Shipping Line]

*“...in our reefer industry you have a lot of players that don't want the dominance of those lines for*

*their products.*” - [Managing Director at a Shipping Line]

*“And I’ve talked to some top managers within Maersk that I know quite well from the reefer side...they were also very open about it that they thought that reefer was probably difficult”* - [Managing Director at a Shipping Line]

Customers wanting to handle their own logistics services is however not entirely due to the nature of their commodities, or the size of the customer as discussed, some customers attach more emotional reasons to handling their own logistics solutions especially if they have been doing it for a long time. Such a reason would be the fear that they lose bargaining power if shipping lines are in control of a large part of the supply chain. Once again this was raised particularly for customers trading in refrigerated products. One solution that some shipping lines specialised in reefer have done to circumvent this issue, is by setting up a logistics segment that does not have the same brand as the shipping segment, this way it alleviates part of the customers’ concerns; but even still, this logistics service is highly dependent on specific customer requests for it. Therefore depending on the customer, a shipping line may decide not to have a dedicated logistics segment.

*“If the shipper wants the logistics all the way till delivery, by giving it often a different name, it’s not called \*name of the shipping line\*, it gives the shipper the feel that they’re not 100% in the hands of \*name of the shipping line\*, although it’s a \*name of the shipping line\* company, it feels for them as independent because there is this element of who controls what, and if the other party controls too much, maybe I lose my bargaining position.”* - [Managing Director at a Shipping Line]

### **4.2.3 Market Position**

The differing market positions of shipping lines was identified as the third most grounded, due to its direct impact on the ability to invest in businesses further along the supply chain. Therefore it comes as no surprise that the financial capacity of a line had the largest weight in determining a line’s market position. More interestingly however, is the perspective that the increased financial capacity from the profits seen after the COVID pandemic was so high that some shipping lines behaved in a ‘reverse’ manner. Instead of starting with a goal and then asking whether there are finances to satisfy that goal, they had the finances and had to decide where to invest it, then VI came into the picture. This is highlighted with a caveat however, that some shipping lines, already had the vision to integrate pre-COVID as mentioned in the previous section. Therefore the ‘COVID profits’ acted as a major enabler to vertically integrate, particularly for the follower lines mentioned in the previous section.

*“What you often see right now is that due to what we saw during COVID where they made revenue through the roof, where they get record profits, where they broke all the records that they had with regards to money coming in, that they’re sitting on a huge chunk of money, which led them to do the opposite, not from we should increase this and therefore we do this, they said, c\*\*\*, we have all this money. What are we going to do with it? Ooh, let’s vertically integrate because maybe we can do this.”* - [Partner at a

Maritime Consultancy Company]

*“I think current market position is of course one big thing. So whether you believe you are currently positioned to capture that market, I mean you require quite big investments right to be really good at it. So I think that’s a key thing.”* - [Project Leader at a Shipping Line]

Aside from the financial capacity, the differing market positions in terms of size and presence in the global market is also found to affect the lines’ decisions to vertically integrate, where the strategy is favoured by bigger lines who have operations across the world.

*“Yeah, I think the size of the business matters. If you are not that big, it’s much more complicated, perhaps to expound in this field... Well, the presence across the world may be effective as well. Not all of them are well, equally present in every continent across the world. So yeah, you will do better if you have a global network.”* - [Transport & Logistics Economist at a Bank]

Finally, the in-house capabilities which contribute to how well positioned a line is to expand through VI, also differ amongst shipping lines. These capabilities range from the interoperability of technologies to expertise and customer knowledge, where a line such as Maersk is described as being strong in the transfer of technologies between businesses which enabled them to explore integration strategies and others such as CMA CGM is described as being able to successfully compensate for not having sufficient internal skills in the logistics business by acquiring logistics companies themselves, for example CEVA Logistics. This then once again brought about the conversation of the difference between organic growth- that is building your own logistics business, compared to growth via acquisitions, which downplays the role of in-house capabilities of managing a different business, but still requires the capability to integrate the acquired company into the main business.

*“Like Maersk, is very developed on the deal management with the transfer technology from the airlines to the shipping lines whereby you have everything about deals with a different price bucket services attached. Uh, it’s why they want to move to integration.”* - [Manager at Shipping Line & Maritime Economics Lecturer]

*“... MSC also integrated other companies not in containers but more like uh Ro-Ro. So you they went outside because they don’t have the skills internally to manage those... It’s like CMA who went to CEVA because at some point they saw that they cannot expand organically fast enough to provide a good support for the business.”*- [Manager at Shipping Line & Maritime Economics Lecturer]

At the same time, it is not only about the in-house capabilities themselves, but also how they are perceived particularly by the shipping lines themselves, for example, it may be argued that shipping lines are well suited to engage with the customers if they made the move into logistics, while others may argue that actually the shipping lines do not have that much experience with the end customer who have completely different requirements from the lines’ current customer - freight forwarders. Therefore the perception of the shipping line’s capabilities is also a factor that differs between shipping lines, and influences how far they are willing to integrate.

*“Look at what competencies you already have to engage in a certain business. And if you vertically integrate, you already have your customer base, you already have some knowledge about yeah customer requirements and you are in a sector where you have access to labor. So where you have some knowledge competencies already.”* - [Director at a Port & Logistics Expertise Centre]

*“...If you deal with customers as a shipping line, it’s quite often with forwarding...but if you look at a logistics company and you engage with the customer for example with a Phillips or Unilever to take care of their complete logistics requirements, it’s a completely different Service, it’s tailor made, it’s customized...so you need also different capabilities.”* - [Director at a Port & Logistics Expertise Centre]

#### **4.2.4 Risk Management**

How the different shipping lines perceive and manage risk is found to affect their decisions to vertically integrate. The most grounded perspective found is the idea that some shipping lines are vertically integrating as a means to mitigate the risks associated with the cyclicity and volatility of the industry influenced by issues such as overcapacity. It is highlighted that some shipping lines argue that by having multiple businesses along the supply chain, you spread out your risk in two ways. First is from the cyclical nature of the shipping industry, where when there are low returns, the returns from the logistics businesses, which is described as less cyclical, sustain the company.

*“...it’s a very cyclical industry, so either you lose a lot of money, or you make a lot of money and the idea is, is that if you do the VI that neutralizes it a bit, right? So you can maybe lose a bit on the ship line, but then still you have the profitability from the logistics part.”* - [Head of Global Strategy at a Terminal Operator]

*“So they try to reduce that[cyclicity] by integrating within the chain and well, by doing this you can reduce those cycles as a full company because other parts of logistics are less cyclical.”* - [Transport & Logistics Economist at a Bank]

Second is related to the volatility of the industry, where when there are shocks, it is the shipping line that is able to operate the best, or offer the most reliable service to customers during these sub-optimal situations, that is able to maintain stable returns; and some shipping lines take the stance that it is by offering an end-to-end solution that they are able to maintain a reliable service during disruptive periods. An additional commonly mentioned risk factor affecting volatility is the predicted low freight rates as a result of an issue of overcapacity. Therefore, some shipping lines see VI as a mitigating solution to the high risks in a volatile industry.

*So it’s added to your political climate change or other aspects, right, that that will create more disruptions and the better you can cope with the disruptions, the better it is for the organization and so what I’ve seen over the past 10 years is that when we are making a lot of money, it’s often related to disruptions or when there’s a sub optimal situation whereby we are the best ones to operate in that sub optimal situation.”* - [Head of Global Strategy at a Terminal Operator]

*“I mean right now it’s[shipping] quite profitable, but its been a couple of years and also going forward the forecast or the explanation is that shipping lines are going to lose money again because of the over supply of ships.”* - [Head of Global Strategy at a Terminal Operator]

Other shipping lines however, do not manage the mentioned risks associated with cyclicity and volatility in the same way. It is noted that some shipping lines are focusing on the shipping business as they believe that they can excel here by offering the most cost efficient solution, and therefore also stabilising their returns.

*“...they are not all doing this for instance, Hapag Lloyd has chosen a different strategy in this respect, because they’re not integrating, they’re just focusing on container shipping and performing in the best way within this section of the supply chain...they seem to think that they can well excel here best relatively whereas the others prioritize perhaps uh, the reduction of risk and cyclicity in general.”* - [Transport & Logistics Economist at a Bank]

The risk appetite of a line is also found to contribute to the VI strategies of shipping lines, and also very closely tied to the culture of the line, in particular, the hierarchical structure and decision making process.

*“So risk appetite is very often linked to culture which also kind of trickles down in the way the company is structured and owned... the culture in which CMA CGM, which is a French firm is run and managed, which is way more kind of loosey goosy and you do a bit of this you do a bit of that versus a Danish firm like APMT or Maersk where it’s very hierarchical and the boss is the boss. So you see these differences popping up, saying with Asian firms, they have a very low risk appetite.”* - [Partner at a Maritime Consulting Company]

Additional risks found to be affecting shipping lines’ strategy is the risk of competing with your customers if you vertically integrate, which may deter a shipping line from integrating, or the complexities of integrating such as the intensity of labour required. One shipping line that made moves into VI in the past found that it was difficulty in passing down the associated costs to the customers, therefore are more skeptical of offering a dedicated end-to-end solution. Ultimately, the difference between some shipping lines seeing VI as a mitigation of risks by creating synergies and those that believe that a focus on the core business as sufficient to mitigate risks, influences the different VI strategies.

*“...shipping lines that would choose a more pureplay shipping like Hapag Lloyd and maybe some of the others who are more focused just on the container movements whether on the ship or in the terminal. They choose to be the best at that, and this means that they can work much better with, for example, forwarders because they’re not competing with them.”* - [Project Leader at a Shipping Line]

*If you go into all this type of stuff [air freight, trucking] and this is what you often see, over time, they realize it becomes too complicated to manage because it’s very labor intensive.* - [Managing Director]

of a Shipping Line]

#### 4.2.5 Shareholding

Next, it was raised that the type of shareholders a shipping line has contributes to how far from shipping they choose to integrate. The ownership of a line is categorised into three, market-owned, government owned and family owned, however, unlike the categories shown in Table 3, a shipping line such as Maersk is sometimes classified as family-owned even if it is still a publicly listed company, due to the majority of shares owned by the Maersk family. As expected, a line with a large shareholding belonging to the government would pursue some state initiatives, an example would be the Chinese government's Road and Belt initiative where COSCO played a central role in not only shipping but also terminal and warehouse operations. Being government owned may also mean more access to cheaper financing that would support vertically integrating if that is the strategy being followed.

*"...for instance, for COSCO you have the management of the road and belt initiative that is passed on to them. So they need to manage and to create terminals, for instance, they need to create warehouses..."*  
- [Manager & Maritime Economics Lecturer]

*"...it's also an industry that's very impacted by government investment subsidies in some areas so there will be shipping lines, for example, who build more ships because they get subsidized access to cheap loans or to support local industries and so on. Or because some countries want a national shipping line that can do certain things."* - [Project Leader at a Shipping Line]

Further, it is noted that publicly listed lines make more acquisitions within the supply chain, whether in shipping or logistics whereas private lines are more inclined to diversify into entirely non-related businesses because there are less parties to involve in the conversation on where to invest. Basically there is no influence from shareholders.

*"there is a big difference when you look at investments of public companies, they buy mostly things related to logistics or to their core business. So it could be something as mentioned terminals, some logistics companies and so on, but if you see the private companies, for example CMA CGM, MSC or even, I think Evergreen is partial, so private owned. So they're buying something not related to their business. For example MSC bought newspapers, CMA CGM bought newspapers in France, the biggest in France. Yeah, because that's their money. They spend it as they want."* - [Manager & Maritime Economics Lecturer]

Finally, amongst the publicly listed lines, there are those that have logistics companies as shareholders. This is the case with Hapag-Lloyd that has Kuehne Nagel, a global transport and logistics provider, as a shareholder. Then in this case, it would be difficult for the management team of Hapag-Lloyd to introduce a VI strategy due to the resistance they would likely get from their shareholders. Simultaneously however, Hapag-Lloyd could argue that it is also not necessary to offer the logistics services, not necessarily due to the issue of competing with Kuehne Nagel, but because they can still capture the customers who request an end-to-end

service through their parent company, without having to invest in VI.

*“One of the main shareholders of Hapag Lloyd is Kuehne Nagel ... so they will not ask Hapag Lloyd to provide logistical services in competition with themselves. But Hapag Lloyd knows that if a client needs to have logistics, their mother company can provide so they can orient those people to Kuehne Nagel. So they do not have the need to do that.”* - [Manager & Maritime Economics Lecturer]

#### **4.2.6 Value of Logistics Providers in the Supply Chain**

An additional factor found to be affecting the different VI strategies of the lines is the value that they place on Logistics service providers with respect to the entire supply chain. The most commonly mentioned perspective is that there are higher and more stable margins in the logistics part of the supply chain compared to the shipping, which some shipping lines also want a share of given that the asset base required in logistics is also considerably less than those in shipping. However there is still the view that distribution logistics is not that rewarding.

*“...the size of DHL, for instance, they are making 80 billion[USD] of total revenue, which is about twice as the biggest one of Maersk, MSC or CMA right now, which is between the 40 and 50, 60 billion[USD].”* - [Manager & Maritime Economics Lecturer]

*“shipping lines historically have been a rather low margin and very volatile business, whereas the traditional freight forwarders over time have been able to capture a larger share of the market and also to a larger extent historically owning the direct customer relationship and therefore they’ve been able to sustain significantly higher margins while they’re having much less the capital investments...and I think one of the reasons why shipping lines want to offer a more integrated product is actually that they want to take some of that better margin that they feel kind of belonged to them.”* - [Project Leader at a Shipping Line]

Tied to the less capital required in logistics is the fact that the costs in logistics tend to be flexible while those in shipping fixed. This becomes increasingly important when there is high volatility and disruptions, as the ability to scale your costs accordingly is integral. Given the looming effects of overcapacity in the shipping segment, some shipping lines place a lot of value in the logistics business since their flexibility allows them to manage such issues.

*“...they don’t own a lot of assets in general, right? So they don’t have the ships. They do have sometimes warehouses, some trucks or so, but not to the extent of the shipping line and what they’re able to do, especially if there’s over capacity they’re able to play the market and that’s something that they’re doing really well.”* - [Head of Global Strategy at a Terminal Operator]

### 4.3 Equilibrium of Strategies

The final major finding we have is that actually, the strategies of different companies in an industry usually tend to an equilibrium, and in the shipping industry the opinion is that similarly, all shipping lines are moving into the last mile, really what differs amongst them is the speed at which this move happens. Shipping lines that are unable to vertically integrate for whatever reason, will be pushed out of the market, unless they are able to carve out a specific segment of the market where they are differentiated from the other shipping lines. It is highlighted that the factors affecting the speed towards the last mile are highly affected by international trade and how it evolves.

*“I would assume they [shipping lines] become a bit equal in their approach because that is usually what you see.”* - [Managing Director at a Shipping Line]

*“They [shipping lines] have to go to the last mile. When? We don’t know that because at one point, the World Trade will change again. But the World Trade will go to some kind of an equilibrium.”* - [Manager & Maritime Economics Lecturer]

*“But again, the intensity by which they actually take action varies...because of circumstances that I can imagine and I do see that they’re going back and forth, as I said, it seems to oscillate a bit around a certain equilibrium.”* - [Ports & Global Logistics Professor]

## 5 Discussion

*RQ1: Why would a shipping line want to vertically integrate?*

To answer this research question we carried out a literature review of motivations for vertically integrating given that shipping lines had already began using this growth strategy in the past. The most common reason we found why shipping lines were vertically integrating particularly into the terminal operating business during the early 2000s was for efficiency gains, that is, greater flexibility, shorter turn around times, and a general commitment to their ships at the ports. This ultimately led to overall increase in efficiency in the management of global supply chains.

However looking at the more recent use of this strategy, starting in 2015 until now, we found that the motivations for shipping lines to get into the logistics business were highly influenced by the volatile nature of the market and the slowing growth of global trade, which limit the benefits of growth by increasing capacity, which is was a common strategy in the pre-2015 period that was characterised by many horizontal integration moves. Therefore the need for stable returns has been a major contributor to shipping lines vertically integrating.

*RQ2: To what extent have shipping lines vertically integrated?*

We analysed the extent of VI amongst the top ten shipping lines by researching all the acquisitions made between 2015 and 2024 into adjacent businesses in the supply chain. Categorising

them into close, mid range and distant adjacencies, we found that APM-Maersk and CMA CGM had made the most significant strides further away from the shipping business, with MSC mostly investing until the mid range adjacency. All the remaining shipping lines maintained their acquisitions closer to the core shipping business with significant investments in terminals.

This pattern suggests a correlation between the size of a shipping line and the distance away from the shipping business they are willing to invest in. Part of this reason is the financial intensity and expertise required to get into the logistics business. Either a shipping line sets up its own logistics business, or makes an acquisition of a logistics company. However, to understand further how much of their business is in logistics and terminal operations, we also analysed the strategies and financial reports published by the lines.

Considering the period 2017-2023, where we would be able to see changes in the revenue breakdown since the strategies were announced, we found that for 4 out of the 10 shipping lines, proportion of revenue from logistics or terminal business segments either significantly increased or began being reported as its own segment. For 3 out of the 10, the proportion of revenue from ocean shipping decreased even if they did not report revenues from other business segments, 2 of the shipping lines do not publish their financial figures and 1 recorded a significant increase in proportion of revenue from ocean shipping. Further 6 out of the 10 lines mention providing integrated logistics solutions in their strategy, while the remaining 4 were more explicit in stating their intention to stay close to the core shipping business as much as possible.

We therefore find that there is a clear tendency towards the adjacent businesses, however differences lie in the distance away from the core. Despite this, investments in terminals was found to be common amongst all considered shipping lines, despite their individual strategies, meaning that having dedicated terminals is generally seen as integral to the core shipping business.

*RQ3: Why do shipping lines differ in their choice to vertically integrate?*

To answer this research question, we carried out semi-structured interviews with industry experts according to the grounded theory methodology and found six factors that differ amongst shipping lines and therefore explain why their VI strategies also differ. We categorise these factors into internal -where the shipping lines have direct control- and external -where environmental factors have an influence- as seen in Table 8. We find that the differing strategies are affected more by factors that the shipping lines influence rather than as a response from a third-party force. This finding is similar to the theory of Miles and Snow mentioned in Section 2 that states that strategic choices of a firm are determined more by the organisation structure and processes than environmental factors.

Category	Second Order Codes	Grounded in Data
<b>Internal Factors</b>	Different Competitive Strategies Different Risk Management Strategies Different Shareholders Different Value Placed on the Logistics Business	<b>109</b>
<b>External Factors</b>	Having Customers with Different Needs Different Market Position	<b>77</b>

Table 8: Aggregate Codes

We also find that whereas the internal factors are most grounded in the data, the two most important factors found, differing competitive strategies and differing customer needs, lie in the separate categories. This suggests the importance of both categories in answering our research question. For the different competitive strategies, we found that shipping lines can generally be categorised into two; following a dedicated strategy and following an opportunistic strategy. The former strategy is characterised by either being fully committed to being an integrated logistics provider, or being fully committed to the core shipping business. The latter strategy on the other hand is a strategy more dependent on additional factors and opportunities, therefore may have features anywhere between a full integration strategy and a shipping pure-play strategy.

The second most grounded factor found, differing customer needs, can be generally grouped into shipping lines whose main customers demand a integrated solution provided by one party, and those whose major customers prefer to handle their own logistics solution, and only demand the ocean shipping service. Putting these two variables together, we come up with the typology chart in Figure 3 that classifies the different VI strategies taken as a function of the type of competitive strategy the shipping line uses and the customer needs of the shipping line.

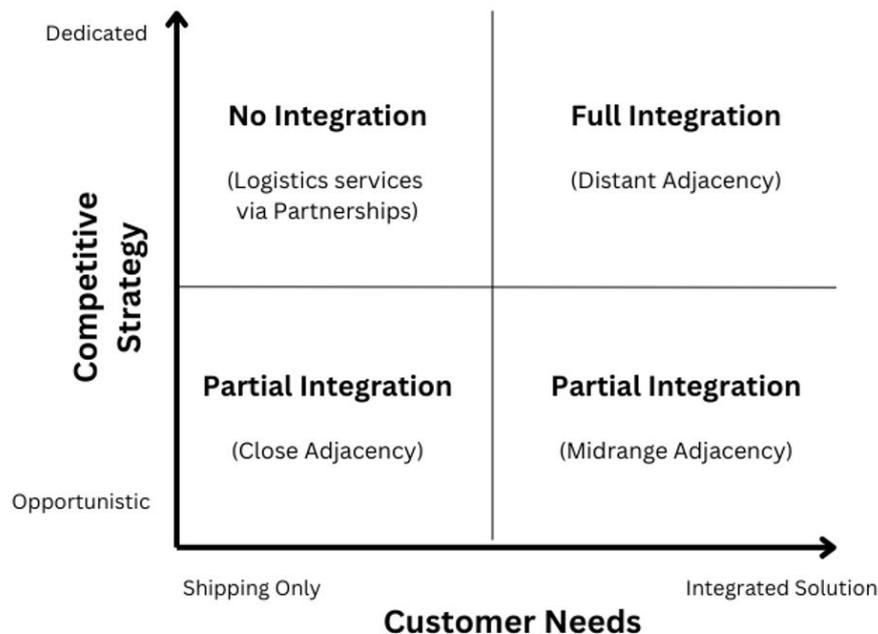


Figure 3: Typology of VI Strategies

In the top left quadrant we have the case of a dedicated strategy being followed by a shipping line whose majority customers do not demand an integrated service. Such a shipping line is characterised by having a strategy that is explicit on its focus on the core shipping business, however may offer some complementary logistics services in some locations if a customer requests it and still has terminal operations. These complementary logistics services would typically be organised through a partner logistics provider, however no major investments into the logistics business are made. This quadrant aligns most with shipping lines such as Hapag-Lloyd, or the ones specialised in reefer containers such as Seatrade.

The top right quadrant is characterised by a shipping line also following a dedicated strategy, but having major customers asking for an integrated solution. In this case the shipping line goes for a full VI strategy, where investments up until the distant adjacency are made, such as into air freight. Such a shipping line would also be re-branding itself from a shipping line to an integrated logistics provider, as they expand their core business. This quadrant represents shipping lines such as APM-Maersk and CMA CGM.

In the bottom right quadrant we have shipping lines who are more opportunistic in their strategy, and have customers demanding an integrated service. In this case the shipping line would make strides into businesses further from the core shipping business, meaning that they would also make significant acquisitions or general investments into the logistics business for example, however the line will still be known more for its shipping business which it will continue to make major investments in. This describes a shipping line such as MSC.

The bottom left quadrant is similar in that it represents shipping lines with a more opportunistic strategy, however having customers not demanding an integrated service. This quadrant represents the shipping lines that are least likely to invest further away from the core shipping business. These shipping lines have investments in terminals, just like the three other quadrants, however this is as far as they will vertically integrate. They may however have some joint ventures or partnerships with logistics service providers to a minimal extent. Such a shipping line would be COSCO or Yang Ming.

## 6 Conclusion

In examining the VI strategies of shipping lines, our research has highlighted significant shifts and patterns driven by both internal motivations and external market conditions. Initially, the primary motivation for VI, particularly into terminal operations in the early 2000s, was to achieve efficiency gains. This included greater operational flexibility, shorter turnaround times, and a more seamless commitment to ship management at the ports, contributing to improved global supply chain efficiency.

However, from 2015 onwards, the rationale for VI evolved. With the market becoming increasingly volatile and global trade growth slowing, shipping lines began to prioritize stable returns over capacity expansion. This shift in strategy reflects a broader trend towards integrating into the logistics business to mitigate market risks and secure more predictable revenue streams.

Our analysis of the extent of VI among the top ten shipping lines revealed a varying degree of investment in adjacent businesses. Notably, APM-Maersk and CMA CGM have ventured

furthest from their core shipping activities, investing significantly in logistics, while MSC has made moderate strides in this direction. Other shipping lines have focused their investments closer to their core shipping operations, particularly in terminal investments, underscoring the strategic importance of dedicated terminal operations across the industry.

Through semi-structured interviews, we identified six factors that explain the differences in VI strategies among shipping lines. These factors are categorized into internal factors, such as competitive strategies and risk management approaches, and external factors, such as customer needs and market position. Our findings suggest that internal factors, particularly competitive strategies and the value placed on the logistics business, play a more significant role in shaping these strategies.

Moreover, our typology of VI strategies, based on competitive strategies and customer needs, provides a framework for understanding the strategic choices of different shipping lines. Shipping lines like Hapag-Lloyd and SeaTrade remain focused on their core shipping business, providing complementary logistics services as needed. In contrast, APM-Maersk and CMA CGM have fully embraced VI, expanding their core business into comprehensive logistics solutions. MSC exemplifies a more opportunistic approach, balancing significant investments in both shipping and logistics. Meanwhile, COSCO and Yang Ming represent shipping lines with minimal VI, maintaining a primary focus on shipping and terminal operations with limited forays into logistics. Ultimately, we have found that the port terminal operating business is seen more and more as crucial for the shipping business, hence all four quadrants feature strategies that involve terminal operations. Beyond the terminals, the differing VI strategies can broadly be explained by the combination of differing competitive strategies and customer needs.

Our overarching research question was why companies within the same industry do not always vertically integrate to the same extent. We have found that companies tailor their strategies based on their unique needs, competitive landscapes, and responses to industry-specific challenges, resulting in distinct approaches to vertical integration even within the same industry. This research highlights that vertical integration is not a one-size-fits-all strategy, but rather a dynamic decision influenced by a complex interplay of factors. While our findings are drawn from a single case study, we highlighted that the Shipping industry's unique position at the nexus of global trade and its exposure to significant disruptions provided a robust context for understanding how companies in different industries determine their vertical integration strategies.

Our research however, faced a few limitations that could affect the comprehensiveness and accuracy of its findings. Firstly, the study relies heavily on publicly available data, such as annual reports and press releases, which are not uniformly disclosed by all shipping lines. In particular, privately-owned companies like MSC do not provide complete financial data, and even among those that do, not all segments of their business operations are fully detailed. This reliance on partial data may lead to an incomplete or skewed picture of a company's vertical integration efforts. Secondly, the research could have benefited from interviews with major customers of the shipping lines. Engaging these stakeholders would have provided a more balanced and unbiased perspective on the actual demand for integrated services, offering insights into how customer needs influence vertical integration strategies. Without this customer

input, the research might overemphasize the supply side of the equation, potentially overlooking key demand-driven factors. Finally, other than justifications made to emphasize the suitability of the shipping industry as a representative case study, no formal test is done to verify the generalisability to other industries, therefore the insights drawn, though useful may also in turn not be generalisable.

Further research could explore several key areas to build on this study's findings. First, it would be valuable to test the applicability of the typology developed in this research across other industries. By examining whether similar patterns of vertical integration strategies and factors are present in different sectors, researchers could validate the generalizability of the proposed framework and identify industry-specific variations. Second, future studies should delve deeper into how differing customer needs drive the VI strategies of shipping lines. This could involve a detailed analysis of how shipping lines tailor their services to meet the demands of specific market segments, providing insights into the extent to which customer preferences and expectations influence the degree of integration. Understanding these dynamics would offer a more nuanced view of the interplay between supply and demand in shaping VI strategies.

In conclusion, vertical integration strategies across industries are multifaceted, shaped by a complex interplay of internal and external factors. As markets continue to evolve, these strategies will likely adapt further, reflecting the dynamic nature of industry-specific challenges and opportunities.

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# Appendices

## A Interview Guide

The following guide was used for the semi-structured interviews carried out, and include all questions that were asked by the interviewer, which were not already raised by the interviewee. Additionally, not all questions were asked except the first question which was always used as the opening to the discussion.

**Target average duration:** 45 minutes

**Minimum and Maximum duration:** 30-60 minutes

**Modes of carrying out the interviews:** In person (preferred), Teams call (second option), Phone call (unless absolutely necessary).

### A.1 General Introduction

***Aim:** First to introduce myself as the interviewer, mentioning my background and ask the interviewee if they allow me to record, process and use the data for research purposes. Second for the interviewee to introduce themselves and the work they do. Finally, to introduce the research topic.*

### A.2 Open Questions

***Aim:** To get an understanding the the interviewee's perceptions on the reasons why shipping lines differ in their VI strategies, without providing them with any information on what literature/other interviewees/I think. This is to reduce bias, and explore any points that I hadn't considered.*

1. What are the main factors a shipping line should consider in their VI strategy? (include follow up questions here e.g. if they mention disruptions what type of disruption, did it affect European and Asian lines differently, the bottom question are more reflecting questions after you've spoken about the factors)
2. Is there a significant difference between the strategic choice of European shipping companies and Asian shipping companies to pursue VI? If so, what are these differences? *If yes:*
3. Why are the shipping lines in Europe vertically integrating to different extents?
4. Why are the shipping lines in Asia vertically integrating to different extents?
5. *If no:* Why are the shipping lines vertically integrating to different extents?
6. Are shipping companies that are vertically integrating taking a more proactive or reactive approach?

### A.3 Internal Reasons

*Aim:* To get an understanding the interviewee's opinions on possible reasons why shipping lines differ in their VI strategies, according to literature. We first consider factors internal to a shipping line.

- **The role of Strategic fit of VI within their existing business model**

7. Does the strategic fit of VI within a shipping line's existing business model play a role in determining the extent to which they will vertically integrate? If so, elaborate.

8. Do the business models of shipping lines differ significantly enough to affect this role?

- **The role of Financial Position**

9. During the immediate post-COVID period shipping lines saw record profits, do you think this affected their VI strategies? If yes, how so?

10. (If so) Did this reason affect the shipping companies uniformly/in the same way?

- **The role of Risk perception and risk management capabilities**

11. Do shipping lines perceive the risk associated with vertically integrating in the same way?

12. If no, to what extent does this difference in risk perception affect their VI strategies?

13. To what extent do shipping lines see VI as a strategy for resilience to disruptions in the supply chain?

- **The role of Organisational Structure and Leadership styles**

14. To what extent does the organisational structure and leadership styles of shipping line differ?

15. Does this difference significantly affect their VI strategies?

### A.4 External Reasons

*Aim:* To get an understanding the interviewee's opinions on possible reasons why shipping lines differ in their VI strategies, according to literature. Here we consider factors external to a shipping line.

- **The role of Competition**

16. Do shipping lines react to the competitive environment of the shipping industry generally in the same way?

17. If no, to what extent has this difference affected their VI strategies?

18. Have there been barriers to entry formed by the shipping lines that were first-movers in vertically integrating that would affect the decision of the other shipping lines to vertically integrate?

- **The role of Regional Regulations**

19. To what extent do European and Asian shipping lines differ in VI strategies as a result of regional regulations?

- **The role of Macroeconomic factors**

20. To what extent have the current macroeconomic factors such as trade patterns and geopolitical tensions affected shipping lines' VI strategies?