COMPETITIVE INTELLIGENCE

LEVERAGING COMPETITIVE INTELLIGENCE PROCESSES IN SHIPPING INDUSTRY OPERATIONS AND STRATEGY

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Abstract:

The present paper explores the role of Competitive Intelligence (CI) within the Shipping industry, focusing on strategic information gathering and analysis for decision-making and strategic planning. The study synthesizes insights from scholarly works and academic perspectives to highlight the transformative impact of CI practices on operational efficiency and competitiveness in shipping operations. Key themes include the integration of CI technology, such as Business Intelligence (BI) tools and data analytics, to optimize decision-making processes and enhance service quality in a dynamic global market.

The research also underscores the significance of diverse intelligence sources, including industry associations, government agencies, financial data providers, and academic research, in shaping CI strategies for Shipping companies. Furthermore, the discussion emphasizes the convergence of CI with geopolitical and macroeconomic analyses to inform strategic decision-making and mitigate operational risks. Overall, the paper contributes to a comprehensive understanding of CI practices and their implications for sustainable growth and resilience within the Shipping industry.

Keywords: *Competitive Intelligence, Shipping Industry, Business Intelligence, Strategic Decision-Making, Geopolitics.*

Introduction

The present academic paper represents a literature review, theorizing about Competitive Intelligence (CI) practices and how they could be applied within the shipping industry. Through an analysis of scholarly works and academic perspectives, the paper delves into the

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significance of strategic information gathering and analysis for decision-making and strategic planning in shipping operations. By synthesizing insights from various sources, including industry associations, government agencies, financial data providers, and academic research, this paper offers valuable perspectives on how shipping companies can enhance operational efficiency and competitiveness.

The literature review explores the transformative impact of CI technology, such as Business Intelligence (BI) tools and data analytics, in empowering shipping companies to leverage vast datasets and extract actionable insights. It emphasizes the role of advanced technologies in optimizing operational decision-making processes and enhancing service quality amidst a rapidly evolving global market landscape. Moreover, the discussion highlights the diverse array of intelligence sources available to shipping companies, underscoring the value of industry events organized by esteemed associations like the International Maritime Organization (IMO) and the International Chamber of Shipping (ICS) for networking and staying abreast of critical industry updates.

Looking forward, the research underscores the importance of integrating CI with geopolitical and macroeconomic analyses to inform strategic decision-making within the shipping industry. By anticipating regulatory changes, geopolitical tensions, and economic trends, companies can proactively mitigate risks and capitalize on emerging opportunities, thereby fostering long-term sustainability and growth. Overall, this paper's discussion-based research contributes to a deeper understanding of how shipping industry might utilize CI practices, shedding light on key factors driving operational efficiency, resilience, and competitiveness in shipping operations.

Competitive Intelligence Process Theory
Competitive Intelligence Definitions

The evolving dynamics of the broader macroeconomic environment pose significant challenges for business decision-making within companies (Ruhli and Sachs, 1997; Miller, 2001). Effective decision-making in this complex landscape requires a deep understanding of qualitative data specific to the business sector and its competitive dynamics (Bose, 2008; Nasri and Zarai, 2013; Kula and Naktiyok, 2021).

Perceptions within a company regarding sectorial competition undergo a rigorous scanning process aimed at securing competitive advantages (Aaker, 1983; De Almeida et al., 2016; Somiah et al., 2020). CI is pivotal in this regard, facilitating the collection, processing, and analysis of data and information critical to informed decision-making on competitors, customers, and products (Dabrowski, 2018). It involves the transfer of knowledge from the business environment to corporate entities, guided by established analytical frameworks (Tahmasebifard, 2018), which enhances comprehension of competitive landscapes (Carvalho, 2021).

Distinguishing CI from BI lies in their information sources; BI relies on internal company systems, whereas CI draws from both internal resources and extensive external data (Saxena and Lamest, 2018; Barnea, 2021). Eventually, the historical roots of competitive intelligence can be traced back to mid-20th-century military intelligence gathering (Greene, 1966). Despite subsequent developments, a universally accepted international definition of competitive intelligence remains elusive (Global Intelligence Alliance, 2005; Franco et al., 2011).

CI operates within a legally compliant framework to gather, manage, analyse, and disseminate information and intelligence that aids strategic decision-making processes in business (Amiri et al., 2017; Cavallo et al., 2020). Successful businesses base their strategies on a comprehensive awareness of the external business environment (Porter, 1991; Cloutier, 2013), emphasizing industry structure, customer behaviour, and competitor activities as primary targets for competitive intelligence frameworks. Initially, Sawka (1996) defines competitive intelligence as knowledge and foresight concerning the external operational environment that informs decision-making and provides an external overview for businesses. According to Calof (1997), the Society of Competitive Intelligence Professionals (SCIP) characterizes CI as timely, fact-based data used in decision-making and strategy development, achieved through industry and competitive analysis, and benchmarking. Moreover, Prescott (1999) extends the definition, framing CI as a process to develop actionable foresight regarding competitive dynamics and non-market factors for enhanced competitive advantage. Leibowitz (2006) views CI as a systematic program to capture, manage, and analyse intelligence for improved strategic decision-making. McGonagle and

Vella (2002) approach CI from a data-centric viewpoint, focusing on public-sourced competitor and business environment information.

Subsequently, CI serves as a value-adding process within a legal framework, ethically gathering and analysing intelligence to enhance strategic and operational decision-making (Nte et al., 2020). The core of CI lies in external environment data collection, underlining its pivotal role in strategic business decision-making (Abraham, 2012), despite the absence of a universally recognized international definition within business and academic literature.

Competitive Intelligence Process

The purpose of the CI framework, as articulated by Prescott (1999), is to develop actionable implications for managers. However, the process of effectively delivering essential information and intelligence to top management is not without challenges, as strategic decision-makers may undervalue CI analytical products and rely solely on personal knowledge and experiences (Gaidelys & Meidute, 2012; Dabrowski, 2018). CI serves as a means of disseminating available intelligence and knowledge to executives responsible for crafting business strategy (Tahmasebifard, 2018; García-Madurga & Esteban-Navarro, 2020). CI projects play a critical role in enabling decision-makers to sustain business leadership amidst a rapidly evolving business environment by identifying, confronting, and effectively managing emerging situations and uncertainties through intelligence acquisition (Barnea, 2021).

There exists a critical need for CI expertise within corporations, enabling CI executives and decision-makers to actively engage in a demand-supply CI chain. In this direction, Gelb & Zinkhan (1985) highlight CI as a combination of defensive and offensive intelligence, aimed at understanding competitors' plans, strategies, weaknesses, and opportunities. Consequently, CI should be recognized as a strategic management tool rather than a mere departmental entity (Viviers et al., 2005). The CI process begins with the collection of raw data and information for the company (Wright, 2010). CI's business environment scanning focuses on specific characteristics and regular research frequencies (De Almeida et al., 2016). Afterward, CI is derived from a comprehensive assessment of the external business environment.

This mutual interaction hinges on management's willingness to acquire knowledge about the business environment and the ability of CI practitioners to operate within a standardized CI framework (Tahmasebifard, 2018). Corporate executives consistently seek competitive intelligence, particularly in today's fiercely competitive corporate landscape.

CI is not merely a framework for data collection but a mechanism to add value to companies through intelligence processes and analysis, enabling managers to proactively make informed decisions. Porter (1991) notes that CI procedures yield either alert intelligence products, highlighting immediate and critical changes in the business macro and micro environment, or operational and strategic intelligence products that inform business strategy formulation and future decision-making. Rothberg and Erickson (2012) argue that CI effectiveness does not always require additional resources but relies on the quality and efficiency of existing analysis procedures and knowledge. Gaspareniene et al. (2013) emphasize the importance of fostering a business culture of intelligence analysis, enhancing knowledge, and ensuring business continuity regardless of potential future investments in additional resources and personnel. Comai (2016) identifies specific characteristics of CI linked to the level and type of investment a company allocates to it. Consequently, CI is a dynamic process that enhances the value of collected information through analysis and the application of CI analysts' and executives' knowledge and experience (Tahmasebifard, 2018).

Additionally, companies allocate resources to CI based on internal and external factors such as costs, information flows, and analytical capabilities. Decision-makers are key proponents of CI within businesses, valuing its contribution to business strategy and competitive intelligence, providing businesses with advanced insights into competitors' decisions. The value of CI for businesses lies in its provision of additional and pertinent intelligence that informs decision-making and strategy formulation, enabling executives to stay abreast of developments in the macro and micro business environments with timely and analytically enriched insights from CI executives (Sapkauskiene and Leitoniene, 2010). Well-informed executives draw actionable conclusions about emerging alternatives for business decisions, selecting the most cost-

effective and efficient options (David, 2013). Executives' personal styles and business cultures influence the successful planning of CI processes by facilitating effective communication among CI executive teams Therefore, CI techniques should be integral to every decision-makers' toolkit for anticipating future developments.

Competitive Intelligence Process Cycle

The CI processes cycle encompasses the development of intelligence analysis products within specific timeframes, guided by established procedures that align with an intelligence cycle framework (Prescott, 1999; Kula and Naktiyok, 2021). The American Productivity and Quality Centre (1996) emphasizes that the intelligence cycle is a dynamic and interactive process, enabling organizations to gather data and information from diverse sources, conduct analysis, and derive actionable insights to inform decision-making. This cycle operates continuously as a daily framework, ensuring organizations stay abreast of the competitive landscape and facilitate informed decision-making processes.

Besides, Dishman and Calof's (2008) research underscores that the intelligence cycle framework is contingent upon CI awareness and structure. "CI awareness" denotes the necessity for a conducive analytical and operational culture that supports effective information management methodologies within the organization (Gaspareniene et al., 2013). Through fostering a CI business culture, company executives serve as primary stakeholders in information collection, management, and analysis, enabling comprehensive data availability for thorough analysis and decision-making support (David, 2013). As well, The Global Intelligence Alliance (2004) proposes an eight-step CI cycle based on the approaches of Bernhardt (1994), Hussey (1995), and Kahaner (1996). Brummer (2005) and Botha and Boon (2008) delineate a seven-step CI cycle that prioritizes key intelligence topics tailored to business-specific competitive intelligence requirements. Bose (2008) aligns with the Competitive Intelligence Professionals (SCIP) CI Cycle, structured around five distinct phases. Additionally, Cloutier et al. (2013), drawing on the work of Kahaner (1996), Bose (2008), and Saayman (2008), advocate for a six-step CI cycle comprising planning and direction,

collection, analysis, communication, decision, and evaluation processes. These approaches underscore the systematic and multifaceted nature of CI cycles designed to enhance organizational intelligence and strategic decision-making capabilities.

Shipping Business Environment

The global shipping trade plays a crucial role in driving globalization by facilitating communication and collaboration among regional economies (Grammenos, 2010; Španja et al., 2017). This industry not only grows faster than the world's GDP but also provides services and components essential to other production sectors (Grammenos, 2010). The increased utilization of ships, the dynamic development of global supply chain systems, and the emergence of international trade agreements between states and corporations have collectively contributed to the globalization of the Shipping industry (Alizadeh and Nomikos, 2009). Adam Smith, widely regarded as the father of modern economics, extolled shipping in "The Wealth of Nations" as a fundamental cornerstone of global economic development, citing its benefits to international trade systems and its role in fostering competition, specialization, and efficiency in the world economy. Conversely, Stopford (1999) explores the impact of globalization on the shipping industry in "Maritime Economics," discussing its effects on company competitiveness through rapid technological advancements and evolving economic and business environments.

Focusing on a single industry allows for in-depth research into the unique business and environmental conditions and factors characterizing that specific business category. Spanos et al. (2004) note that high-profit industries often feature highly competitive environments and business structures. The shipping industry, known for its profitability, is characterized by intense competition, with numerous companies vying for market share (Giannakopoulou et al., 2016). Shipping companies consistently endeavour to reduce costs, enhance services, and deliver trade and service value to maintain competitiveness (Akbar et al., 2020). Moreover, the shipping industry is continuously evolving technologically and is subject to new laws and environmental regulations. Companies

must adapt to these changes to sustain their competitive positions (Alizadeh and Nomikos, 2009).

Given these factors and the need to respond to emerging conditions in the broader macro environment, the shipping industry increasingly leverages intelligence practices to enhance decision-making efficiency, reduce operational costs, and improve trade system safety. Intelligence activities are integrated into daily shipping operations through innovative technological tools that gather and analyse large volumes of data, as well as through structured intelligence frameworks that utilize internal and external business information and intelligence (Lorange, 2020; Ward and Bjørn-Andersen, 2020). Modern shipping companies actively seek methods to acquire information and intelligence about their operational environments to enable predictive insights (Zehir et al., 2010).

Shipping Strategic Decision-Making

The continuous liquidity of the shipping industry and the frequent structural changes it undergoes necessitate careful consideration when applying macroeconomic analysis models. Competitive strategies adopted by shipping companies are heavily influenced by their business environments (Panayides, 2003). It is imperative for companies to remain informed of significant developments and to demonstrate agility in decision-making and implementation to effectively capitalize on emerging opportunities and ensure resilience. Key pillars for developing a shipping strategy include strategic timing in market positioning and proactive exploitation of shipping cyclicality by identifying market inefficiencies and inconsistencies (Grammenos, 2010; Emmanuelides and Tsavliris, 2019).

Strategic decisions in the shipping industry involve capital acquisition considerations with planning horizons extending up to twenty years. These decisions translate into tactical objectives encompassing vessel allocation management, chartering, operations, and market negotiation positioning. The timing of strategic decisions in the shipping industry is critical due to the fluctuating profit potentials along business cycles (Grammenos, 2010). The value of ships as economic assets undergoes rapid changes, significantly impacting

macroeconomic potentials. Therefore, shipping companies often base their strategies on countercyclical investment approaches, investing against prevailing shipping cycle trends (Bendall and Stent, 2007). This approach can involve asset play strategies supported by financial resources and banking finance to reshape or expand shipping fleets (Grammenos, 2010).

Furthermore, aggressive exploitation of shipping cyclicality and market inefficiencies underscores the value of intelligence in the industry. Effective intelligence gathering and utilization can lead to geopolitical insights, the emergence of new trade routes, and predictions regarding new products and transportation methods (Charalambides et al., 2019). The availability of financial resources and political backing can contribute to the formation of oligopolistic segments within the shipping industry. Ship-owners who possess priority, flexibility, and readiness to seize opportunities can derive substantial benefits (Emmanuelides and Tsavliris, 2019).

Business Intelligence in the Shipping Industry

Modern technology plays a pivotal role in the operations of shipping companies, facilitating essential functions such as information storage, processing, and communication. The quality and effectiveness of intelligence disseminated to decision-making management levels within these companies are heavily reliant on the sophistication and capabilities of the technological tools employed (Lyridis, 2005).

In addition, BI technologies serve as a critical enabler for CI teams and executives. It assists them in ensuring that the data and information gathered are not only comprehensive but also accurately aligned with the specific requirements for intelligence products intended for dissemination to mid or high-level management (Carvalho, 2021). The horizon and efficiency of intelligence production can significantly fluctuate depending on the quality, reliability, and timeliness of the gathered information (Gaspareniene et al., 2013).

In the context of the shipping business, where rapid decision-making and strategic planning are paramount, leveraging advanced technologies such as data analytics, artificial intelligence, and cloud computing becomes imperative. These technologies empower shipping

companies to harness vast amounts of data, extract actionable insights, and enhance their overall competitiveness in a dynamic global market. Furthermore, the integration of BI and CI technologies not only streamlines information management but also enables a more proactive approach to identifying market trends, competitive threats, and emerging opportunities. This proactive stance is crucial for shipping companies seeking to adapt swiftly to changing market conditions and maintain a strategic edge.

Competitive Intelligence in the Shipping Industry

CI, at least according to the theoretical works, operates within a legal framework designed to ethically collect, manage, analyze, and disseminate information and intelligence to support decision-making processes and business strategy formulation within organizations. Within the context of the shipping industry, CI encompasses the collection and analysis of information about business competitors in the corporate environment. The primary objective of CI within the shipping industry is to facilitate effective strategic planning and, consequently, evolve into a key strategic decision-making tool.

Numerous competitive technology intelligence tools and algorithms have been developed specifically for CI intelligence cycle procedures. These tools typically follow a set of generic steps consisting of six main procedures: intelligence need identification, resource and task planning, data and intelligence acquisition, analytical framework implementation, dissemination to mid and high-level management, and feedback monitoring post-decision-making (Global Intelligence Alliance, 2005). The international structure of the shipping industry, coupled with existing collaborations through shipping clubs, provides a wealth of competitive information that can be effectively utilized within the CI framework. Moreover, the governance of information resources plays a critical role in enabling proper decision-making within the shipping industry. CI resources can be aligned with the goals of shipping company stakeholders to generate high-value results in the intelligence analysis process (Boyer et al., 2010).

In broad international business environments like shipping, many scholars propose the adoption of specific CI project processes tailored to

internal business structures, staffed with practitioners and executives possessing defined qualifications and business experience. This approach enables a more comprehensive, expedient, and dynamic understanding of the business environment (Global Intelligence Alliance, 2005; García-Madurga, and Esteban-Navarro, 2020).

Shipping Competitive Intelligence sources

The exploration of various sources and channels reveals how shipping companies can acquire valuable intelligence about market trends, regulatory changes, competitor activities, and customer preferences. By leveraging market reports, industry publications, trade associations, government agencies, financial data providers, supplier relationships, digital platforms, customer feedback, competitive benchmarking, and academic research, shipping companies can develop a comprehensive understanding of the shipping landscape. Harnessing these diverse sources of intelligence enables organizations to enhance operational efficiency, optimize decision-making processes, and capitalize on emerging opportunities in the ever-evolving shipping industry. This investigation delves into each intelligence source, highlighting their significance and practical applications for shipping companies navigating the complexities of global maritime trade. The key sources are as follows:

> ➢ *Market Reports and Industry Publications:* Represent indispensable resources for shipping companies seeking to navigate the complex maritime and logistics sectors. Subscription-based market research reports, crafted by reputable firms specializing in these fields, provide deep insights into market trends, growth projections, and competitive landscapes. These reports furnish essential data and analysis that empower shipping companies to grasp market dynamics and make strategic decisions with confidence (Gao et al., 2021). Moreover, industry publications and journals serve as ongoing sources of knowledge, delivering timely updates on regulatory changes, technological advancements, and shifting trade patterns that directly influence the shipping industry. By staying informed through these publications, shipping companies can proactively respond to market

shifts, adapt to regulatory requirements, harness emerging technologies, and position themselves competitively within the global shipping arena (Yang et al., 2021).

➤ *Associations and Industry Conferences:* They play a pivotal role in the networking and knowledge-sharing efforts of shipping companies. Participating in industry-specific events such as conferences, seminars, and trade shows organized by esteemed associations like the International Maritime Organization (IMO), International Chamber of Shipping (ICS), and Baltic and International Maritime Council (BIMCO) provides invaluable opportunities to connect with industry experts, peers, and competitors (Lyall, 2022; Rowbotham, 2022). These interactions enable companies to stay abreast of emerging trends, best practices, and regulatory updates within the maritime sector. Additionally, trade associations frequently publish newsletters and research papers that delve into critical issues affecting shipping companies, offering insights into market conditions, policy developments, and technological innovations (Duru, 2018).

➤ *Government and Regulatory Agencies:* Government and regulatory agencies, such as the European Maritime Safety Agency, play a crucial role in shaping the operational landscape of shipping companies through the issuance of regulatory updates and compliance guidelines (Power, 2018). Accessing and staying informed about these updates is essential for shipping companies to navigate changes in international shipping laws, environmental regulations, and port security measures effectively. By monitoring regulatory developments, companies can ensure compliance with evolving standards and requirements, mitigate operational risks, and adapt their strategies to align with emerging regulatory frameworks. The insights provided by government and regulatory agencies enable shipping companies to maintain operational efficiency, uphold safety standards, and foster sustainable practices in the evolving regulatory environment within the Shipping industry (Heims, 2018).

➢ *Finance and Market Data Providers:* Utilizing financial databases and market intelligence platforms like Bloomberg, Thomson Reuters, and Lloyd's List Intelligence empowers shipping companies to access critical financial and market data for strategic decision-making. These platforms enable companies to track the financial performance metrics of competitors, analyse vessel ownership structures, and monitor fluctuations in freight rates. By leveraging such comprehensive databases, shipping companies can gain insights into market trends, identify emerging opportunities, and assess the competitive landscape within the shipping industry. The use of financial and market data providers facilitates informed decision-making processes, supports risk assessment and management, and enhances the overall competitiveness of shipping companies in a dynamic and evolving global market (Fei and Caesar, 2018).

➢ *Supplier and Partner Relationships:* Developing strategic partnerships with suppliers, shipping agents, and port operators plays a vital role in enhancing competitive intelligence within the shipping industry. By fostering these relationships, shipping companies gain access to valuable insider information about market demand, supply chain dynamics, and competitor activities. Collaborative initiatives with industry stakeholders facilitate knowledge-sharing and provide deeper insights into market trends and emerging challenges. This exchange of information and expertise enhances visibility across the shipping ecosystem, enabling companies to adapt quickly to market shifts, optimize supply chain operations, and identify strategic opportunities for growth and efficiency. Supplier and partner relationships are instrumental in building resilience and competitiveness within the maritime sector, driving innovation, and fostering long-term sustainability (Yuen et al., 2020).

➢ *Online Databases and Digital Platforms:* Online databases and digital platforms offer Shipping companies powerful tools

to gather real-time intelligence and optimize operational decision-making. Leveraging platforms like AIS (Automatic Identification System) and vessel tracking services such as MarineTraffic and VesselFinder provides immediate access to critical data on vessel movements, port calls, and congestion levels. By analysing publicly available shipping schedules and cargo manifests, companies can identify key trade routes, monitor shipping volumes, and assess market share dynamics. This wealth of information enables shipping businesses to make informed decisions about route planning, resource allocation, and fleet management, ultimately enhancing efficiency and competitiveness in the global shipping industry. Digital platforms streamline data collection and analysis processes, allowing companies to stay agile and responsive in a rapidly evolving maritime landscape (Jović et al., 2022).

➢ *Customer Feedback and Market Surveys:* Customer feedback and market surveys play a vital role in shaping the strategies and services of shipping companies. By actively soliciting feedback from customers, freight forwarders, and cargo owners through surveys and interviews, shipping companies gain valuable insights into customer preferences, pain points, and service expectations. Analysing customer sentiment and behaviour allows companies to identify areas for improvement and innovation, enabling them to tailor their services to meet specific customer needs and enhance overall satisfaction. This customer-centric approach not only fosters stronger relationships with clients but also helps shipping companies differentiate themselves in a competitive market by delivering value-added solutions that address customer concerns and deliver superior experiences (Yuen, 2015a).

➢ *Competitive Benchmarking and Analysis:* These procedures are essential components of strategic intelligence for shipping companies. By conducting comparative assessments against peer companies using online tools and databases, shipping companies can gain valuable insights into their performance metrics, such as vessel utilization rates, transit

times, and service quality. This benchmarking process allows companies to identify areas of strength and weakness relative to competitors, enabling targeted improvements and optimizations. Moreover, monitoring competitor advertising, promotions, and pricing strategies provides valuable intelligence on market positioning and customer targeting strategies. Understanding how competitors position themselves and attract customers allows shipping companies to refine their marketing tactics and competitive strategies to better capture market share and sustain long-term growth. Overall, competitive benchmarking and analysis empower shipping companies to make informed decisions, enhance operational efficiency, and stay ahead in a dynamic and competitive industry landscape (Krishnamoorthy, 2014).

➢ *Academic Research and Thought Leadership:* Academic research and thought leadership, including participation in conferences and special academic meetings, play a crucial role in shaping strategic intelligence within the Shipping industry. By referencing academic studies, white papers, and industry reports authored by renowned researchers and consulting firms, and by actively engaging in conferences and academic gatherings, shipping companies can gain valuable insights into macroeconomic trends, supply chain disruptions, and emerging technologies that impact the sector. These sources provide in-depth analysis and thought-provoking perspectives on key industry issues, enabling shipping companies to anticipate changes, adapt strategies, and capitalize on opportunities. Leveraging academic research and thought leadership, alongside participation in conferences and specialized academic meetings, fosters a deeper understanding of complex challenges and trends, equipping companies with the knowledge needed to navigate the evolving landscape of global maritime trade effectively. Ultimately, integrating insights from academic sources and engaging in academic forums enhances decision-making processes and facilitates innovation within the shipping industry (Harvey et al., 2021).

Discussion over Future potentials

The future potential of Competitive Intelligence (CI) frameworks in the shipping industry is set to revolutionize decision-making by enabling companies to effectively mitigate risks and navigate unexpected market disruptions, often described as "black swans." The 2021 Suez Canal blockage and the ongoing Houthi attacks in the Gulf of Aden during the 2023-2024 period are key examples of how such disruptions can significantly impact global trade.

The grounding of the Ever Given in the Suez Canal, which halted nearly 12% of global trade, led to widespread delays, financial losses, and the rerouting of numerous ships. Similarly, the Houthi attacks in the Gulf of Aden have disrupted vital Shipping lanes, jeopardized vessel safety, and increased maritime security costs. These events highlight the critical role of CI in helping Shipping companies anticipate, understand, and respond to unpredictable yet highly impactful disruptions.

CI frameworks allow shipping companies to assess and anticipate geopolitical and geostrategic dynamics, which are often the root causes of such disruptions. By leveraging intelligence from government agencies, industry associations, and geopolitical experts, shipping firms can proactively develop strategies to mitigate risks associated with geopolitical shifts, ensuring operational continuity and regulatory compliance. The lessons from the Suez Canal blockage and Houthi attacks emphasize that CI is not just for competitive analysis but is also essential for safeguarding against unforeseen geopolitical events that can disrupt global trade routes and logistics networks.

In addition to geopolitical intelligence, integrating macroeconomic benchmarking into CI practices enhances strategic decision-making in the Shipping industry. Real-time market data and financial insights from reputable sources like Bloomberg and Thomson Reuters enable Shipping companies to monitor economic indicators, currency fluctuations, and commodity prices. This macroeconomic intelligence is crucial for informing fleet management strategies, investment decisions, and market positioning, allowing shipping companies to swiftly adapt to changing economic conditions and capitalize on emerging opportunities. The Suez Canal and Gulf of Aden incidents reinforce the need for CI frameworks

that can integrate both macroeconomic and geopolitical intelligence to effectively respond to crises and market black swans.

Looking ahead, the convergence of CI with political, geostrategic, and macroeconomic analyses will enhance operational efficiency and resilience within the Shipping industry. By anticipating regulatory changes, geopolitical tensions, and economic trends through CI-driven strategies, shipping companies can implement proactive risk management measures and strategically position themselves in the global Shipping landscape. The Suez Canal blockage and Gulf of Aden conflicts serve as case studies that illustrate the necessity of such foresight, proving that companies capable of anticipating and responding to these challenges will be better equipped to maintain operational continuity and competitive advantage.

Furthermore, integrating CI frameworks into shipping operations helps companies navigate political uncertainties, including shifts in international trade agreements and regional conflicts that affect shipping routes and port operations. By incorporating geopolitical intelligence into CI processes, shipping firms can identify potential risks and opportunities related to political events and regulatory changes, enabling them to develop agile responses that ensure business continuity, even in the face of black swan events.

Finally, utilizing macroeconomic benchmarking within CI practices provides shipping companies with valuable insights into market trends and economic indicators. Monitoring key metrics such as GDP growth rates, inflation rates, and global trade volumes enables shipping companies to make informed decisions about capacity planning, investment allocations, and pricing strategies. This comprehensive understanding of macroeconomic conditions is vital for proactive adaptation to changing market dynamics, helping shipping companies maintain competitiveness in the global marketplace. The events in the Suez Canal and Gulf of Aden underscore the importance of integrating these elements into CI frameworks, demonstrating that robust CI practices are essential for preparing for and responding to the multifaceted challenges of the global economy, including unpredictable black swans that can reshape the industry landscape.

Conclusions

Summing up, the academic discourse on CI within the shipping industry underscores the critical role of strategic information gathering and analysis in navigating the complex and dynamic maritime landscape. By leveraging various intelligence sources such as industry conferences, government agencies, financial data providers, and academic research, shipping companies can enhance their decision-making processes and maintain competitiveness.

The integration of advanced technologies, data analytics, and artificial intelligence could empower shipping companies to harness large volumes of data, extract actionable insights, and adapt swiftly to market shifts. By embracing a proactive approach to CI, companies can anticipate geopolitical and macroeconomic trends, mitigate operational risks, and capitalize on emerging opportunities.

References:

1. Aaker, D. A. (1983). "Organizing a strategic information scanning system." *California Management Review*, *25*(2), 76-83. https://doi.org/10.2307/41165007.

2. Abraham, S. C. (2012). *Strategic planning: A practical guide for competitive success*. Emerald.

3. Akbar, A., Aasen, A. K., Msakni, M. K., Fagerholt, K., Lindstad, E., and Meisel, F. (2020). "An economic analysis of introducing autonomous ships in a short-Sea Liner Shipping Network." *International Transactions in Operational Research*, *28*(4), 1740-1764. https://doi.org/10.1111/itor.12788.

4. Alizadeh, A. H., & Nomikos, N. K. (2009). *Shipping derivatives and risk management*. Palgrave Macmillan.

5. *American Productivity and Quality Center (1996). Leveraging Information for Action*. Houston, TX.

6. Amiri, N., Shirkavand, S., Chalak, M., and Rezaeei, N. (2017). "Competitive Intelligence and developing sustainable competitive advantage." *AD-Minister*, 173-194. https://doi.org/10.17230/ad-minister.30.9.

7. Barnea, A. (2021). "Big Data Can Boost the Value of Competitive Intelligence." *Competitive Intelligence Magazine, 26*(1).

8. Bendall, H. B., and Stent, A. F. (2007). "Maritime Investment Strategies with a portfolio of real options." *Maritime Policy & Management*, *34*(5), 441-452. https://doi.org/10.1080/03088830701585183.

9. Bernhardt, D. C. (1994). "'I want it fast, factual, actionable'–tailoring competitive intelligence to executives' needs." *Long Range Planning*, *27*(1), 12-24. https://doi.org/10.1016/0024-6301(94)90003-5.

10. Bose, R. (2008). "Competitive intelligence process and tools for intelligence analysis." *Industrial Management & Data Systems*, *108*(4), 510-528. https://doi.org/10.1108/02635570810868362.

11. Botha, D. F., and Boon, J. A. (2008). "Competitive intelligence in support of strategic training and learning." *SA Journal of Information Management*, *10*(3). https://doi.org/10.4102/sajim.v10i3.325.

12. Brummer, H., (2005). *A dynamic competitive analysis model for a global mining firm.* Pretoria: Unisa.

13. Calof, J. (1997). "For King and Country ... and Company." *Business Quarterly*, 61(1), 32-39.

14. Carvalho, P. S. de. (2021). "Fundamentals of Competitive Intelligence (CI)." *IF Insight & Foresight*.

15. Cavallo, A., Sanasi, S., Ghezzi, A., and Rangone, A. (2020). "Competitive intelligence and strategy formulation: Connecting the dots." *Competitiveness Review: An International Business Journal*, *31*(2), 250-275. https://doi.org/ 10.1108/cr-01-2020-0009.

16. Cloutier, A. (2013). "Competitive Intelligence Process Integrative Model based on a scoping review of the literature." *International Journal of Strategic Management*, *13*(1), 57-72. https://doi.org/10.18374/ijsm-13-1.7.

17. Comai, A. (2016). *Competitive Intelligence Expenses: Organizational Characteristics and Environmental Contingencies* (Unpublished doctoral dissertation). Esade Business School, Department of Marketing Management, Operations Management and Innovation and Information Systems Management.

18. *Competitive Intelligence in Large Companies – Global Study* (Rep. No. 4). (2005). Global Intelligence Alliance.

19. Dabrowski, D. (2018). "Sources of market information, its quality, and new product financial performance." *Engineering Economics*, *29*(1). https://doi.org/10.5755/j01.ee.29.1.13405

20. David, F. R. (2013). *Strategic Management Concepts and cases: A competitive advantage approach*. Pearson.

21. De Almeida, F. C., Lesca, H., and Canton, A. W. P. (2016). "Intrinsic motivation for knowledge sharing – competitive intelligence process in a telecom company." *Journal of Knowledge Management*, *20*(6), 1282-1301. https://doi.org/10.1108/jkm-02-2016-0083

22. Dishman, P. and J. Calof (2008). "Competitive intelligence: a multiphasic precedent to marketing strategy." *European Journal of Marketing* 42(7/8), 766-785.

23. Duru, O. (2018). "The Fundamentals of Shipping Economics." *Shipping Business Unwrapped*, 5-11. https://doi.org/10.4324/9781315231341-2.

24. Emmanuelides, G., and Tsavliris, P. (2019). *Winning shipping strategies. theory and evidence from leading shipowners*. Economia Publishing.

25. Fei, J., and Caesar, L. D. (2018). "Knowledge management in the shipping industry." *Managing Human Resources in the Shipping Industry*, 176-195. https://doi.org/10.4324/9781315740027-10.

26. Franco, M., Magrinho, A., and Ramos Silva, J. (2011). "Competitive intelligence: A research model tested on Portuguese firms." *Business Process Management Journal*, *17*(2), 332-356. https://doi.org/10.1108/14637151111122374.

27. Gaidelys, V., and Meidute, I. (2012). "Instruments and methods of competitive intelligence." *Economics and Management, 17*(3). https://doi:10.5755/j01.em.17.3.2122.

28. Gao, R., Liu, J., Du, L., and Yuen, K. F. (2021). "Shipping market forecasting by Forecast Combination Mechanism." *Maritime Policy & Management*, *49*(8), 1059-1074. https://doi.org/10.1080/03088839.2021.1945698.

29. García-Madurga, M., and Esteban-Navarro, M. (2020). "A project management approach to competitive intelligence." *Journal of Intelligence Studies in Business, 10*(3). https://doi:10.37380/jisib.v10i3.636.

30. Gaspareniene, L., Remeikiene, R., and Gaidelys, V. (2013). "The Opportunities of the Use of Competitive Intelligence in Business: Literature Review." *Journal of Small Business and Entrepreneurship Development*, *1*(2), 9-16.

31. Gelb, B., and Zinkhan, G. (1985). "Competitive Intelligence Practices of Industrial Marketers." *Industrial Marketing Management,* (14), 269-275.

32. Giannakopoulou, E. N., Thalassinos, E. I., Stamatopoulos, T. V. (2016). "Corporate governance in shipping: an overview." *Maritime Policy & Management*, *43*(1). https://doi.org/https://doi.org/10.1080/03088839.2015.1009185.

33. Global Intelligence Alliance. (2004). "Introduction to Competitive Intelligence." *GIA White Paper*, *1*.

34. Grammenos, C. T. (2010). *The Handbook of Maritime Economics and Business*. Lloyd's List.

35. Greene, R. (1966). *Business Intelligence and Espionage. Homewood: Dow Jones- Irwin.*

36. Haralambides, H., Karakitsos, E., and Tenold, S. (2019). *Shipping and Globalization in the Post-War Era*. Palgrave Studies in Maritime Economics.

37. Harvey, W. S., Mitchell, V.-W., Almeida Jones, A., and Knight, E. (2021). "The tensions of defining and developing thought leadership within knowledge-intensive firms." *Journal of Knowledge Management*, *25*(11), 1-33. https://doi.org/10.1108/jkm-06-2020-0431.

38. Heims, E. (2018). "Building EU Maritime Safety Regulatory Capacity." *Building EU Regulatory Capacity*, 83-110. https://doi.org/10.1007/978-3-319-97577-1_4

39. Hussey, D. E. (1995). *Rethinking strategic management: Ways to improve competitive performance*. Wiley.

40. Jović, M., Tijan, E., Brčić, D., and Pucihar, A. (2022). "Digitalization in Maritime Transport and seaports: Bibliometric, content and thematic analysis." *Journal of Marine Science and Engineering*, *10*(4), 486. https://doi.org/10.3390/jmse10040486.

41. Kahaner, L. (1996). *Competitive Intelligence*. New York: Kane Associates.

42. Krishnamoorthy, B., D', C., and Lima, N. A. (2014). "Benchmarking as a measure of competitiveness." *International Journal of Process Management and Benchmarking*, *4*(3), 342. https://doi.org/10.1504/ijpmb.2014.063240.

43. Kula, M. E., and Naktiyok, A. (2021). "Strategic thinking and competitive intelligence: Comparative research in the automotive and communication industries." *Journal of Intelligence Studies in Business*, *11*(2).

44. Leibowitz, J. (2006). *Strategic intelligence: Business intelligence, competitive intelligence, and Knowledge Management*. Boca Raton, FL: Auerbach Publications.

45. Lorange, P. (2020). *Innovations in shipping*. Cambridge University Press.

46. Lyall, F. (2022). "International maritime law and the International Maritime Organization." *Technology, Sovereignty and International Law*, 33-61. https://doi.org/10.4324/9780429293368-3.

47. Lyridis, D. V., Fyrvik, T., Kapetanis, G. N., Ventikos, N., Anaxagorou, P., Uthaug, E., and Psaraftis, H. N. (2005). "Optimizing shipping company operations using business process modeling." *Maritime Policy & Management*, *32*(4), 403-420. https://doi.org/10.1080/03088830500300636.

48. McGonagle, J. J., & Vella, C. M. (2002). *Bottom Line Competitive Intelligence*. Quorum.

49. Miller, S. (2001). "Competitive intelligence – an overview." *Society of Competitive Intelligence Professionals*.

50. Nasri, W., and Zarai, M. (2013). "Key success factors for developing competitive intelligence in the organisation." *American Journal of Business and Management, 2*(3). https://doi:10.11634/216796061302397.

51. Nte, N. D., Omede, K. N., Enokie, B. K., and Bienose, O. (2020). "Competitive Intelligence and competitive advantage in pharmaceutical firms in developing economies: A review of Lagos state, Nigeria." *Journal of Management, Economics, and Industrial Organization*, 76-99. https://doi.org/10.31039/jomeino. 2020.4.1.5.

52. Panayides, P. M. (2003). "Competitive strategies and organizational performance in ship management." *Maritime Policy & Management*, *30*(2), 123-140. https://doi.org/10.1080/0308883032000084850.

53. Porter, M. (1991). "Towards a dynamic theory of strategy." *Strategic Management Journal*, *12*(S2), 95-117. https://doi.org/10.1002/smj.4250121008.

54. Power, V. (2018). "Maritime Safety: The European Maritime Safety Agency." *EU Shipping Law*, 1284-1304. https://doi.org/10.4324/ 9781315626147-27.

55. Prescott, J. (1999). "The Evolution of Competitive Intelligence – Designing a process for action." *Association of Proposal Management Professionals*.

56. Rothberg, H. & Erickson, G. (2012). "Intelligence in Action: Strategically Managing Knowledge Assets." Palgrave Macmillan.

57. Rowbotham, M. (2022). Bimco & the Baltic Exchange. *Break Bulk and Cargo Management*, 80-95. https://doi.org/10.4324/9781003256359-7.

58. Ruhli, E., and Sachs, S. (1997). "Challenges for strategic competitive intelligence at the corporate level." *Competitive Intelligence Review*, *8*(4), 54-64. https://doi.org/10.1002/(sici)1520-6386(199724)8:4<54::aid-cir9>3.0.co;2-s.

59. Saayman, A., Pienaar, J., De Pelsmacker, P., Viviers, W., Cuyvers, L., Muller, M., and Jegers, M. (2008). "Competitive intelligence: Construct exploration, validation, and equivalence." *Aslib Proceedings, 60*(4), 383-411. https://doi:10.1108/00012530810888006.

60. Sapkauskiene, A., and Leitoniene, S. (2010). "The Concept of Time-Based Competition in the Context of Management Theory." *Inzinerine Ekonomika-Engineering Economics, 21*(2).

61. Sawka, K. (1996). "Demystifying Competitive Intelligence." *Management Review*, 85(10), 47-51.

62. Saxena, D., and Lamest, M. (2018). "Information overload and coping strategies in the Big Data Context: Evidence from the hospitality sector." *Journal of Information Science*, *44*(3), 287-297. https://doi.org/10.1177/ 0165551517693712.

63. Smith, M. K., Aigbavboa, C. O., and Thwala, W. D. (2020). "Validating elements of competitive intelligence for the competitive advantage of construction firms in Ghana: A Delphi study." *African Journal of Science, Technology, Innovation and Development*, *13*(3), 377-386. https://doi.org/ 10.1080/20421338.2020.1762309.

64. Spanos, Y. E., Zaralis, G., and Lioukas, S. (2004). "Strategy and industry effects on profitability: Evidence from Greece." *Strategic Management Journal*, *25*(2), 139-165. https://doi.org/10.1002/smj.369.

65. Stopford, M. (1999). *Maritime economics: Martin Stopford*. Routledge.

66. Tahmasebifard, H. (2018). "The role of competitive intelligence and its sub-types on achieving market performance." *Cogent Business & Management*, *5*(1), 1540073. https://doi.org/10.1080/23311975.2018.1540073

67. Viviers, W., Saayman, A., and Muller, M. L. (2005). "Enhancing a competitive intelligence culture in South Africa." *International Journal of Social Economics*, *32*(7), 576-589. https://doi.org/10.1108/03068290510601117.

68. Ward, R., and Bjørn-Andersen, N. (2020). "The Origins of Maritime Informatics." *Progress in IS*, 5-11. https://doi.org/10.1007/978-3-030-50892-0_1.

69. Wright, S. (2010). "Capitalizing on intelligence: Converting input to output to insight and competitive advantage." *Journal of Strategic Marketing*, *18*(7), 517-521. https://doi.org/10.1080/0965254x.2010.529159

70. Yang, J., Zhang, X., and Ge, Y.-E. (2021). "Measuring risk spillover effects on dry bulk shipping market: A value-at-risk approach." *Maritime Policy & Management*, *49*(4), 558-576. https://doi.org/10.1080/03088839.2021.1889064.

71. Yuen, K. F., and Thai, V. V. (2015a). "Service quality and customer satisfaction in Liner Shipping." *International Journal of Quality and Service Sciences*, *7*(2/3), 170-183. https://doi.org/10.1108/ijqss-02-2015-0024.

72. Yuen, K. F., Wang, X., Wong, Y. D., and Li, K. X. (2020). "The role of stakeholder participation and sustainability integration in maritime transport: A structure-conduct-performance analysis.' *Transport Policy*, *99*, 44-53. https://doi.org/10.1016/j.tranpol.2020.08.011.

73. Zehir, C., Muceldili, B., Akyuz, B., and Celep, A. (2010). "The impact of Information Technology Investments on firm performance in national and Multinational Companies." *Journal of Global Strategic Management*, *1*(4), 143-143. https://doi.org/10.20460/jgsm.2010415846.