



# IMO 2020 – Value proposition part II

**The call for sustainable supply chains**

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# The call for sustainable supply chains

IMO2020 as the first big regulatory step for sustainable supply chains. Its impact and increasing pressure for change is being felt by the entire maritime and logistics industry.

Additionally, the pressure does not stop there, it goes hand in hand with a new awareness expressed by the customer, noticeable in a stringent demand for sustainability.

Indeed, customers are becoming increasingly conscious with regards to climate and their ecological footprint on their own health. This shift towards sustainability is also underlined by figures, released by the World Health Organization (WHO), stating that there are 7 million annual casualties from the effects of breathing polluted air, with nine out of ten people being exposed to such.<sup>1</sup>

The demand for sustainability is made further evident with results from a survey stating that around 50% of consumers would pay more for a sustainable product and more than a third would pay 25% more for a sustainable product.<sup>2</sup>

With these figures the demand for change has been amplified by the consumer.

This urgency for change was further emphasized with the emergence of activist groups, such as the “Fridays for future” movement, actively demanding a vigorous

and global shift towards sustainability in all aspects of modern life.

Examples of companies moving towards sustainability are:

- Global shoe brands actively engaging in efforts to reduce waste, minimizing their footprint and creating a greener supply chain altogether.<sup>3</sup>
- Clothing retailers have gone to increasing their resource productivity, optimizing material usage and actively encouraging collaborations across their supply chains.<sup>4</sup>

Consequently, with the customer and the companies actively engaging in sustainable approaches, in their day-to-day activities, the focus has shifted to the supply chains and how they could be made more sustainable.

The UN has therefore presented the most stringent regulation yet with IMO2020’s global implementation on the 1<sup>st</sup> of January 2020.

Indeed IMO2020, in combination with customer expectations has created a powerful synergy, pushing forward the demand of a widespread focus and implementation of sustainability in business models throughout. This, as well as further future regulations, are all conducted with the common goal to reduce

1 <https://www.who.int/air-pollution/news-and-events/how-air-pollution-is-destroying-our-health>

2 <https://www.globenewswire.com/news-release/2019/01/10/1686144/0/en/CGS-Survey-Reveals-Sustainability-Is-Driving-Demand-and-Customer-Loyalty.html>

3 <https://www.imd.org/research-knowledge/articles/why-all-businesses-should-embrace-sustainability/>

4 <https://www.imd.org/research-knowledge/articles/why-all-businesses-should-embrace-sustainability/>

greenhouse gas (GHG) emissions in the maritime industry by at least 50% by 2050 in comparison to 2008, with the subsequent effort to phase them out entirely.<sup>5</sup>

The ongoing developments in fuel regulations, many of which already preceded the IMO 2020 regulation, are indicators that even more stringent measures, with regards to climate protection, are going to be introduced in the years to come. One potential new regulation is a possible CO2 tax, a theory first proposed on the Hansa Forum in Hamburg in 2018.

Thus, the maritime industry, in particular its business models and companies, will be forced to adapt to a fast paced pipeline of incoming regulations with the aim to force a fundamental recalibration to green business models.

Adhering to these, consistently incoming, regulations will be an incremental financial burden for companies in the maritime industry, which to a large extent already struggle with keeping positive operating margins that are usually in the single digits.<sup>6</sup> Achieving positive margins will be another challenge when carriers for instance are confronted with an additional estimated cost of \$15 billion per year.<sup>7</sup>

The need for a realignment is also evident when looking at the other factors, such as that on average vessels generate value for their owners during merely a third of their lifetime.<sup>8</sup>

For one, the factor of efficiency has ultimately manifested itself as an immense challenge, with a consistent presence beforehand, becoming abundantly clear with the introduction of IMO2020.

Latest by that point, efficiency was clearly identified as a major factor where improvements are necessary in order to sustain a level of relevancy and competitiveness in the modern global maritime economy.

Indeed, with IMO 2020 coming closer it becomes clearer to the maritime companies, which areas and functions of their existing business models are prepared for the future and which ones should be realigned in order to sustain the upcoming challenges.

From our point of view the biggest challenges in particular are establishing transparent supply chains in the maritime industry and for the individual companies within to achieve new forms of efficiency.



5 <http://www.imo.org/en/MediaCentre/HotTopics/GHG/Pages/default.aspx>

6 [https://www.joc.com/maritime-news/container-lines/profitable-year-slipping-a80+19,5+19,5+19,5-way-container-shipping-outlook-darkens\\_20180704.html](https://www.joc.com/maritime-news/container-lines/profitable-year-slipping-a80+19,5+19,5+19,5-way-container-shipping-outlook-darkens_20180704.html)

7 <https://www.bloomberg.com/news/articles/2018-09-17/maersk-says-customers-to-pay-for-2-billion-a-year-fuel-hike?srnd=markets-vp>

8 <https://assets.kpmg/content/dam/kpmg/xx/pdf/2018/11/navigating-the-future-changing-business-models-shipping-insights.pdf>

# The need for transparent supply chains

Virtually ignored 10-15 years ago it has developed into a subject which commands the attention of entire business development divisions in the logistics industry. The reasons for the increased attention regarding transparency is clear, companies have come under pressure from their customers to disclose information about their supply chains, in order to uncover how the price they pay is compounded by the company. On the other hand customers are willing to pay 2%-10% more for services that provide better supply chain transparency.<sup>9</sup>

This puts the companies under pressure, as the reputational cost of failing these obligations are severe.

As customer demands for more transparent supply chains have increased, so has the reputational risk for companies. In fact, numerous scandals have inflicted substantial damage to the reputation of companies in the maritime industry. The most prominent example of reputational damage experienced by the maritime industry is it being made accountable as a primary source of air pollution, with its high sulfur fuel oil being identified as the main issue at hand, as it is composed of residue from refining processes.

Additionally the introduction of supply chain transparency would do its part in reduce the stringent customer dissatisfaction with the maritime industry. In fact, even though the low freight rates do impose the shippers with savings they are frustrated by the service they have to endure.<sup>10</sup> The unhappiness of the shippers comes from service disruptions, having been told these originate from labor strikes, driver shortages or simply late port calls.

Despite these explanations the customers begin to believe that the disruptions are a consequence from conscious decisions conducted by shipping companies. This dangerous sentiment could be easily neutralized with a level of transparent supply chain made accessible to customers.

Such blatant economic realities openly expose the misplaced sentiment expressed by multiple entities within the maritime industry. Namely, that the only thing customers care about is the price they pay for the transport of goods.

In fact, while price remains an important factor it by no means remains the singular factor relevant for customer satisfaction. With more complex economic interdependencies, due to fuel, labor and tax costs, amalgamating into one price the consumer no longer wants to merely see the price they have to pay.

<sup>9</sup> <https://pubsonline.informs.org/doi/10.1287/msom.2017.0685>

<sup>10</sup> <https://www.mckinsey.com/industries/travel-transport-and-logistics/our-insights/ports-and-shipping-the-need-for-solutions-that-cross-lines>

They demand visible access to the single factors compounding the rate which their shipment is made subject to consequently acquiring a greater customer satisfaction in the process, as they are informed at all times.

So, why isn't everyone doing it?

In particular this is because supply chains are not intended to be transparent, companies in the logistics industry are cautious disclosing too much information as they believe it could damage their competitive advantage or expose their business operations to criticism. Additionally it can be expensive upholding a level of transparency with which to satisfy the consumer, in a time where funding is hard to come by.

In turn, when a company finally decides to engage with transparency, the resulting benefits can be substantial. The most important benefit is exhibiting compliance with increasingly demanding regulation, such as IMO 2020, enhancing the companies standing as a trustworthy enterprise. Consequently, consumer will express higher trust and satisfaction levels as they would be able to follow the value being created for them, with transparency acting as a window into the ongoing operations.<sup>11</sup>



<sup>11</sup> <https://hbr.org/2019/03/operational-transparency>

# Financial pressures

The public's call for sustainability has not been entirely ignored by the maritime economy, resulting in companies from the maritime industry to form a group in 2014 called the Trident Alliance, an alliance of mostly European ship owners and liner companies, even before IMO2020 could no longer be averted.

This group has committed itself to ensure stringent enforcement when it comes to climate regulations, such as caps on sulfur. This has been done by conducting collective efforts in raising awareness throughout the industry on the issue of enforcement and pooling knowledge, which in turn drives initiatives in order to acquire more effective enforcement tools.<sup>12</sup>

This can be understood as a statement that a majority of companies within the maritime industry are all willing to comply with IMO and the increased costs, but they want everyone to live by those same regulations, therefore adhering to those same costs.

The call for stronger regulation and transparency of IMO 2020 has been aided by a collection of financial institutions which have committed themselves to sustainability, by issuing binding principles.

The launch of the Poseidon principles on the 18<sup>th</sup> of June 2019 marks the point at which now further pressure is exerted on the maritime companies in terms of complying with the upcoming IMO2020 regulations. This

provides an additional incentive to shipping companies, as they could face difficulties in financing, as a result of these principles, should they not turn to sustainable business models.

The Poseidon Principles are a global framework agreement, culminating an effort by global shipping banks and leading industry players.<sup>13</sup>

The Poseidon principles were initially signed by 11 banks which hold over \$100bn in assets, representing almost 20% of the global ship finance.<sup>14</sup> All signatories are committed to follow these principles.

These "principles" are tailored towards the Paris climate agreement and the IMO target of cutting emissions conducted by global shipping by 50% until the year 2050, in comparison to levels registered in 2008.<sup>15</sup>

The first principle is the assessment of the climate alignment, which is to measure the level of carbon emitted by their shipping portfolio.<sup>16</sup>

The second principle is the accountability which is there to ensure that the information provided by the Banks is unbiased and accurate. This entails that signatories will only utilize the sources, standards and service providers established by IMO, in order to calculate the levels of greenhouse gases emitted by their shipping portfolios.<sup>17</sup>

The third principle is enforcement, this encompasses

<sup>12</sup> <http://www.tridentalliance.org/who-we-are>

<sup>13</sup> <https://www.poseidonprinciples.org/about/how-did-we-get-there/>

<sup>14</sup> <https://www.poseidonprinciples.org/about/how-did-we-get-there/>

<sup>15</sup> <https://www.cms-lawnow.com/ealerts/2019/07/poseidon-principles-and-responsible-ship-financing>

<sup>16</sup> <https://www.poseidonprinciples.org/principles/assessment/>

<sup>17</sup> <https://www.poseidonprinciples.org/principles/accountability/>

the contractual obligation by all signatories that they will comply with the Poseidon principles' climate goals in their business activities utilizing standardized covenant clauses.<sup>18</sup>

The fourth principle is transparency, which is the subject of annually publishing the results of the levels of greenhouse gases, measured from the member banks shipping portfolios.<sup>19</sup>

The message these principles infer are basically that maritime companies which do not effectively engage in the improvement of their ecological footprint could face difficulties, if not even impossible odds, at acquiring financial help, in the form of loans, for their operations as they would possibly not be able to comply with the standardized clauses implemented into the agreements, by each of the Poseidon principle's member banks.

These steps signify a very an urgent first step of enforcing IMO2020 across the entire industry and minimizing non-compliance which in turn would undermine its effectivity.

Further measures must be undertaken in order to support the compliant entities, which could result in the effective establishment of transparent environments in

which consumers can conduct their day-to-day activities with a clear conscience regarding the sustainability of their actions.

Finally, the destined ECB president Christine Lagarde has pledged to intensify the ECB's focus on climate change, allowing the conclusion that she views sustainable economics as being the future.<sup>20</sup> This allows the hypothesis that banks are open for ship financing under the condition that the companies transition into sustainable business operations.

In conclusion, while putting pressure on the maritime industry can be seen as a welcome first step, it pertains to be seen if these measures will display any kind of effect. Looking at the initial companies' shipping market share of merely 20% it depends how the Poseidon principles develop in terms of new member banks, with regards on how enforced they will be throughout the maritime industry. While these developments are a good initial step, many more banks have to join and adhere to these principles in order for these to develop any significant enforcement throughout the financial industry and in turn add pressure on the logistics industry to create a level playing field.



18 <https://www.poseidonprinciples.org/principles/enforcement/>

19 <https://www.poseidonprinciples.org/principles/transparency/>

20 <https://www.nytimes.com/2019/09/04/business/climate-change-ecb-lagarde.html>

# Insufficiency of old business models

Another way the maritime companies attempt to cope with the IMO2020 regulations is continuous growth.

Indeed, on the run-up to IMO2020 there were numerous attempts at achieving growth by industry participants, either by consolidating or joining alliances to manage overcapacity. Through the utilization of such methods for example liner companies were able to acquire significant market shares, forming the maritime economy to an oligopoly.

This is made evident when the market shares which they hold is above 60%.<sup>21</sup> Thus, the idea behind was the long-term improvement of freight rates, due to their increased negotiation power, earnings and overall margins.

In theory this would become possible through combined operations, economies of scale and reduced operating costs, due to the sheer number of vessels under their control.

In reality this approach might have been less effective than expected.

In fact, after the profitable year of 2017 which spanned the whole industry, the momentum exhibited by the members of the maritime industry seemingly has faded. In fact, operating margins from most companies barely exceeded 2%.<sup>22</sup>

In order to combat low freight rates, incoming and upcoming environmental regulations, as well as political complications, it might be no longer enough to immerse oneself with hyper growth, through shipbuilding or mergers and acquisitions, with the goal of acquiring a large enough market share with which one can demand higher freight rates. This is simply not anymore a sustainable long-term strategy as customers do not utilize services which are only well known. Customers demand an accessible, sustainable connected and efficient service.

The issue cannot be solely attributed to the companies within the shipping economy, but to the logistics economy as a whole.

With hyper growth reaching its limits, made evident by the low margins, the maritime companies must identify new ways in which they can reach profitability for their businesses and their economy. One possible solution approach is not acquiring one another but engaging in collaborations with each other. The question in this case remains, as to how such an environment, where collaboration is the norm, can be created.

A possible solution approach is the utilization of platform models, as they are able to construct and sustain an environment in which a level playing field is provided with a set rules, allowing the members of the platform to cooperate with each other.

<sup>21</sup> <https://alphaliner.axsmarine.com/PublicTop100/>

<sup>22</sup> [https://www.joc.com/maritime-news/container-lines/profitable-year-slipping-away-container-shipping-outlook-darkens\\_20180704.html](https://www.joc.com/maritime-news/container-lines/profitable-year-slipping-away-container-shipping-outlook-darkens_20180704.html)

In conclusion, instead of embarking into mergers and acquisitions, companies in the logistics industry should look at new ways of value creation, not the traditional ones. In fact, the utilization of network effects could be a viable tool as they improve the value of the service provided by the individual company.

This happens, not through the means of individually owning larger amounts of assets, but through the means of collaboration over a shared platform which multiple entities from the logistics industry can join, consequently increasing their individual value by sharing connections with other entities, via that platform. In the future logistics industry, not the company with the most assets, but the company with the most connections will likely be most prone to acquiring large market shares.

# Profitable through collaboration

In order to conduct the shift back to profitability, maritime companies must realize that in these agile economic times the number of assets a company holds will not automatically translate to success.

In fact, the number of outside connections and how embedded a company is in the modern digital framework have become defining factors of successful long-term operations.

Outside interactions, in this sense, could refer to a company conducting a link, not only with its industry peers, but with a company originating from a different sector all together. For example, this could mean that two companies, a rail company and a maritime freight forwarder administer a combined slot allocation system tool with which they can coordinate their shipments and the subsequent transfer from one place to another, in the most efficient ways.

This modern digital framework enables companies to not only have frequent and customized interactions with each other but also with their customers.

Moreover it has never been easier for companies to interact with each other, efficiently plan their operations and precisely identify the best intersections of their adjacent business operations, essentially enabling companies to coordinate an entire supply chain, not

through yielding all the assets by air, land and sea, but by having the necessary outside connections and collaborating with such, beyond the once natural barriers of their sector.

Moreover, once implemented into ongoing business operations, these technologies enable the companies to together address the customers' needs the moment they arise. This is made possible by technology enabling a frequent direct connection between the customer and the digital interface made available to him which in turn is being accessed by the collaborating companies.

Indeed this can be a win-win situation for all participants willing to operate via such a technology, as is almost automatically comes along with a high degree of transparency.

Additionally, connected strategies enable companies to also predict customers' needs by utilizing data analysis tools, which is the systematic application of computer-aided methods to find patterns, trends or relationships in existing databases.<sup>23</sup>

In the logistics industry this data analytic tools can be utilized to create an individual customer profile, enabling an accurate prediction of demand, with the possibility of reaction towards it before the customer even decided to place an order.

<sup>23</sup> <https://www.bigdata-insider.de/was-ist-data-mining-a-593421/>

Given the sheer amount of digitalization it is less likely for a single firm to offer all the elements digitalization offers spanning from customer demands to systematically optimize its business routes and operations using digital tools – as these often require stringent experimentation which many companies are unable to sustain due to scarce funds.

Through such developments, platform models have become a viable option and consequently are on the rise, even more so as there is an ongoing growing number of companies in the maritime industry with low margins<sup>24</sup>, possibly unable to conduct many costly experiments.

Additionally, platforms become even more of a feasible option as the result of recent individual digitalization merely shows how individual firms and their units in the maritime industry are simply not enough to administer the transition, being made evident by the ongoing low margins exhibited.

Instead, maritime companies should focus on bridging the borders between members of the supply chain and focus on collaborating across industries along the logistical supply chain. This could result in a significant platform ecosystem spanning traditional industry boundaries, enabling the offering of complex and customizable product-service bundles in the process.

As a result of quickly advancing digital innovation, logistical operations are undergoing a significant shift, as the very nature of competition is changing.

Indeed, it has transformed as competing, for many companies in logistics, will transition from offering the greatest value proposition, surpassing one another, into establishing new ways of collaborating and connecting with each other.

In logistics, this may mean that competition will transition from individual companies to being conducted between rival ecosystems or platforms, while in themselves they represent ecosystems of collaboration.

These collaborating entities will represent the entire supply chain from the initial pick-up to the final drop-off.

With a very high probability, future value will be generated from within these platforms and as a result companies choosing not to operate within these ecosystems will find it increasingly difficult to remain competitive, generate any form of profits and to keep up with the overall value proposed to the customer by the

platform member firms.

This is due to possible benchmarks set by the platform for its members, in terms of digitalization or quality and speed of service. Thus, it encourages its members to exhibit a certain level of adaptability, enabling them to quickly adhere to any changes, as the needs of the customer, can shift dramatically with the constantly shifting economic interdependencies. Consequently a culture of collaboration, also in terms of data, can be established among participants from different logistics sectors.

In an ideal scenario, with all participants collaborating across all industries, a customer is given access to a complete overview of the entire logistical supply chain and companies, who are part of a platform, are given the ability to efficiently plan, execute and finalize their shipments.

In the case of the maritime industry, these platforms would help enable the transparent utilization of their assets in a more efficient way.

With the data provided by members of the platforms, in a shared pool, the utilization of data analysis tools would be the logical next step. Data analysis is the systematic application of computer-aided methods to find patterns, trends or relationships in existing databases, in the above example the databases covering processes and customer profiles provided by the maritime companies led to optimized service loops.<sup>25</sup>

Additionally when it comes to coping with IMO 2020 the increasingly volatile fuel costs could be reduced with another clever utilization of data analysis, with which processes could be identified, in which fewer ships can be used to conduct service loops.

Service loops are a number of ships that connect a series of ports in a “loop” which could take as long as 4 months to complete.<sup>26</sup> Thus, this would allow the members of the platforms to save operational costs on a large scale, by requiring less vessels to conduct their round trips, hence requiring less costly assets.

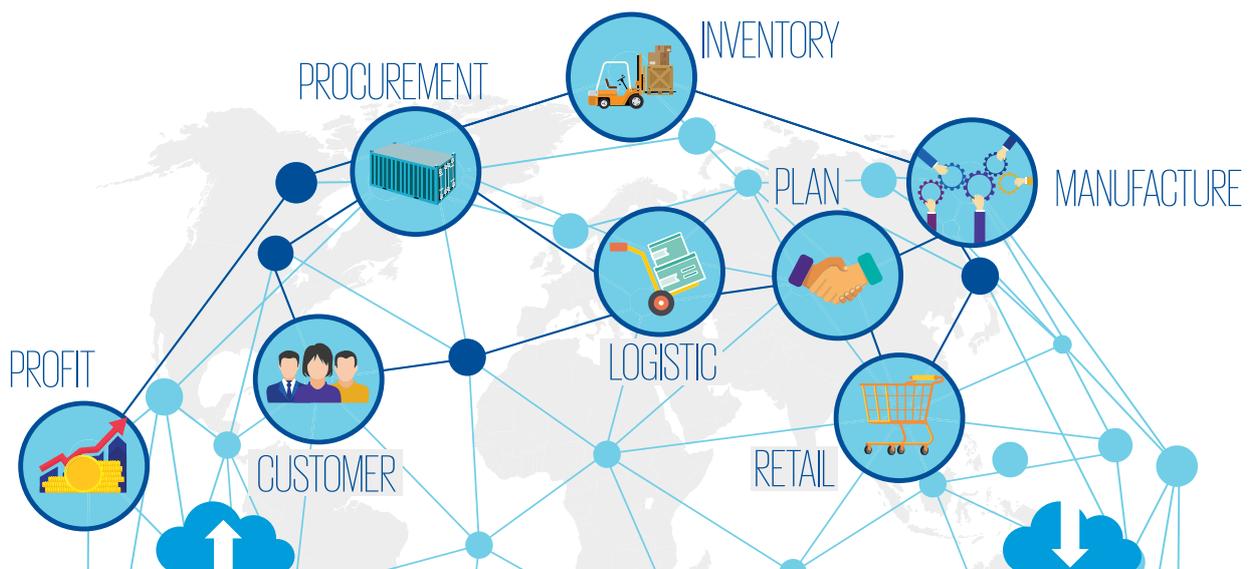
Bringing us to another factor provided by platforms, representing a prerequisite for survival in post IMO2020 times, collaboration. This is possibly the hardest to achieve as it hinges on the issue of trust. Should collaboration be sustained though, it will allow the engaging companies to create powerful synergies, enabling them to remain ahead of the competition, crisis and regulatory measures.

24 <https://www.hellenicshippingnews.com/box-shipping-faces-costly-challenges-and-margins-could-slump-as-a-result/>

25 <https://www.bigdata-insider.de/was-ist-data-mining-a-593421/>

26 <https://www.forbes.com/sites/flexport/2019/04/08/imo-2020-what-shippers-need-to-know-now/#636835ac4812>

# The use of data in logistics



One solution for coping with IMO2020, as well as with all other possible upcoming regulations, is the full utilization of data.

Data is the logistics industry's current and future most valuable resource. It is emitted everywhere, whether it is the tracking of GHG emissions, driving in city traffic or transporting containers from New York to Hamburg, practically every activity emits data and creates a digital trace.

Indeed, it is feasible that algorithms tailored to these

data sets will identify efficiencies and continuously optimize these processes, resulting in consequential cost reduction.

As a result of IMO2020, multiple factors have emerged, driving the maritime and logistics industry towards the utilization of available data: a relentless pressure to reduce costs, new connected technologies and richer more visible logistics data. Additionally customers demand increased functionality provided by platforms along with cost reductions that comes from a better use of assets.

Data platform models might be able to offer all of these factors, with increasing digitalization, platform-based business models will connect new players, eliminate inefficiencies and harness data clouds.

Platforms have already been implemented in the consumer-faced logistics industry, with Uber for instance, yet business-to-business logistics pose different challenges.

Where successful, asset-heavy, companies of the past just coordinated two parties' assets, one entity being the one transporting the cargo and the other entity being the one receiving it.

Logistics platforms have the ability to coordinate multiple entities, their containers, financial matters, fuel resources and regulatory approvals among others.

In essence platforms have the ability to coordinate its members through the overall complexity of this asset-intensive industry.

They also answer the call for more transparency by customers and companies alike. For one sensor generated data from physical assets such as vessels, warehouses or trains are aggregated in the platform and thus vastly increasing the visibility across the logistics value chain for all platform participants.

In addition to the significant amounts of aggregated data, the application of blockchain and other distributed-ledger technologies on the shared data pool enables an automatic coordination between members of this infrastructure.

In practice, what is meant by this prior statement, a platform based on blockchain has the ability to utilize the aggregated data of its participants from their by sensors, ERP systems, inventory palettes, and shipping events and can launch subsequent events across the value chain.

Meanwhile, with the help of the open architecture, provided by the blockchain, the parties in the platform are enabled to add, share and co-govern their data at one single point of aggregation, with the benefit of transparency due to the blockchains' public records. Thus, the result is that all actors of the platform are each held to high standards.

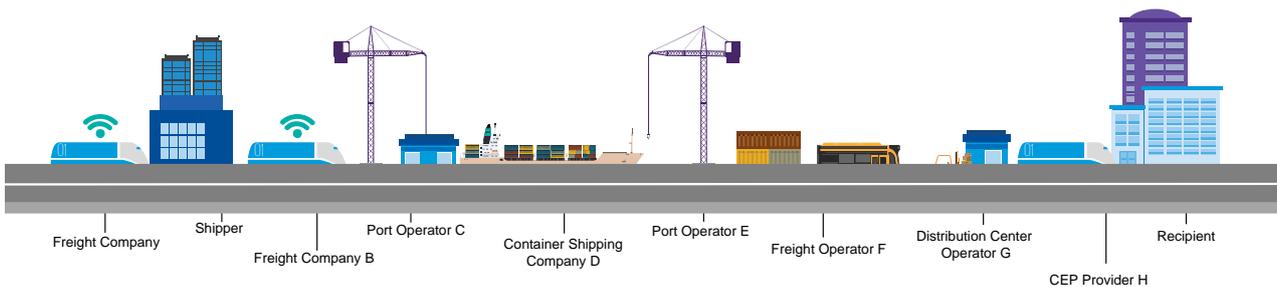
Furthermore, the platforms ability to manage permissions, asset ownership, and accountability from all participants, helps assure service quality, with theoretically requiring less assets per entity.

In turn this visibility of all processes significantly improves the trust between the platforms participants, as any individual performance lapses or discrepancies, which could be hidden among the complex systems in the past, become visible to all parties at every stage.

Platforms require collaboration between the players in the logistics market, with regards to data sharing. This is made more difficult by the lack of trust, as no company in the logistics industry wants to willingly supply their so-called competitors with data on their business practices. Answering this question is difficult and will require a great deal of transparency from all participants as this could be a way to sustain a uniform level of collaboration from all participants in order to have an effective platform model.



# Implemented platforms in logistics



Maersk and IBM have partnered to launch TradeLens, a blockchain-based platform for managing global shipments involving multiple entities.

On this platform, the events across the shipping cycle, such as credit checks, contract signings, the arrivals at ports and payments are all being recorded.

On TradeLens, event data and document information are written on the blockchain, creating a single source from which data is emitted.

Another feature of the platform, running with blockchain, is the automatic execution of contracts known as a smart contract.

A practical example, in the maritime industry, of such a smart contract would be say the delivery of cargo at a port, with the corresponding contracts encoded in the blockchain being automatically activated, eliminating possible human errors, float, and apprehended documents.

For example, customs clearance documents that must be completed during port entry can be automatically executed as smart contracts when data about the ship's entry into the port are successfully recorded onto the blockchain.

Beyond the use of blockchain, Singapore has introduced their own Transport Integrated Platform (TRIP), connecting diverse logistical entities.<sup>27</sup>

<sup>27</sup> <https://www.channelnewsasia.com/news/singapore/new-data-platform-launched-to-boost-singapore-s-logistics-sector-9389728>

This platform provides a single view to multiple entities, achieving full supply chain visibility.

TRIP includes fleet management and job allocation tools as well as data from diverse sources such as depots, port authorities, freight forwarders, and shippers.

Enterprise cloud technologies also have the ability to increase coordination across the supply chain.

As more companies move their digital processes and workflows to the cloud, they are enabled to share data with one other more easily through Application Programming Interfaces (APIs), software that allows two applications to talk to each other.

Using application programming interfaces (APIs), supply chain events can be aggregated on central platforms that receive data from participating firms' distributed systems in real-time.

Supply chain efficiency can be continually optimized.

Logistics platforms like TRIP and TradeLens scale exponentially in value through simple network effects. In essence these network effects, can be understood when looking at Metcalf's law, which claims that the effect of a network is proportional to the square of the number of connections or users within the network, increasing its value accordingly.<sup>28</sup>

Proof of such a relationship between number of users and generated value is the twenty-fold revenue increase, exhibited by platform companies, over a 10 year period.<sup>29,30</sup>

As more entities, such as shipping companies, ports and on-land logistics companies become instrumented, the value of these platforms increases via network effects as partners create value for one another. The significance of this particular growth in value is in fact, that it is being achieved by collaboration, rather than competing against each other.

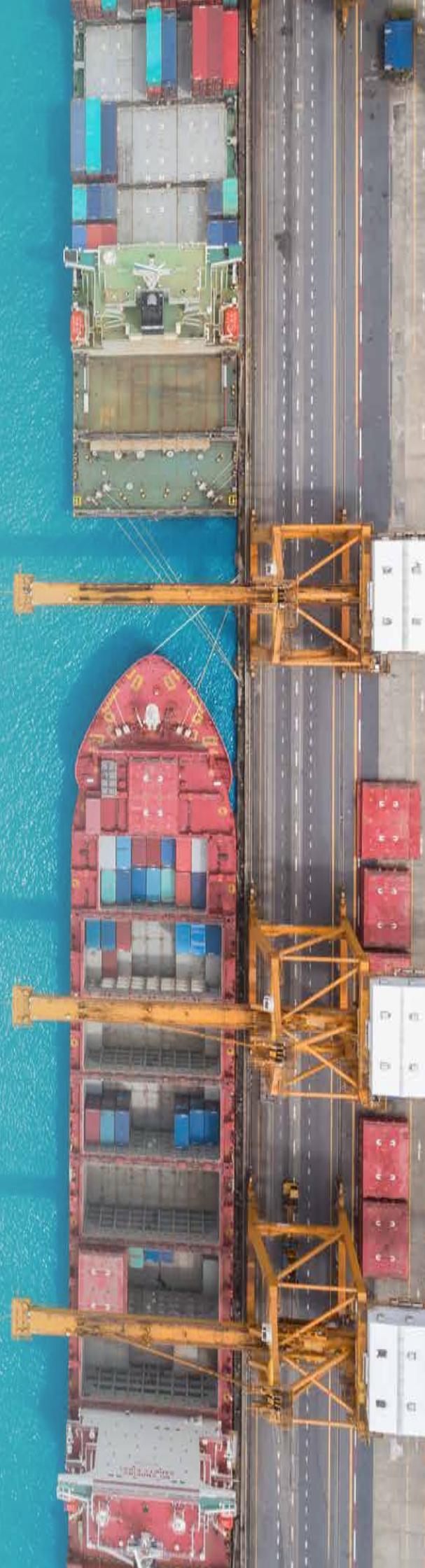
Indeed, the greater availability and coordination of fleets, warehouses and containers leads to faster end-to-end shipment and better route optimization.

Furthermore, as the platform manages more shipments, it learns which shipping lifecycle events and which

<sup>28</sup> <https://medium.com/@projectubu/network-effects-and-metcalfes-law-b4a4e8ff5767>

<sup>29</sup> <https://www.statista.com/statistics/266282/annual-net-revenue-of-amazoncom/>

<sup>30</sup> <https://www.statista.com/statistics/225614/net-revenue-of-alibaba/>



actors create more delivery volatility and then uses this learning to hedge and buffer future operations.

This learning not only enhances performance but also reduces cost as unreliable partners can be improved or dropped.

Finally, creating a platform based market for vessels, warehouses and ports allow them to be utilized at increasingly fine grained and coordinated intervals. Thus less vessels are required to conduct the business operations of the individual entities, consequently allowing them to reduce operational costs.

Furthermore, while big companies such as Maersk and CMA CGM already engage with platforms such as TradeLens<sup>31</sup>, small and medium enterprises (SME) also begin to engage themselves with logistics platforms in order to capture value from their spare capacity, by offering it to each other, with the additional effect of acquiring a level of agility which enables them to deal with the economic and political developments, such as IMO2020.

They bring their vessels and facilities to the platforms while utilizing their service offers of advanced technology such as the blockchain or predictive data analytics.

Indeed, the small and medium enterprises (SME) collaboration leads to more decentralized trade flows, essentially requiring superior tracking and coordination on all logistical levels, which is offered by the platforms and goes beyond connecting maritime logistics to the land and air.

In fact, TradeLens, FreightHub and Flexport seek to address these challenges by taking multiple logistics companies online, effectively managing the end-to-end orchestration of a logistical process.

In conclusion, all entities entailed with the platform are managed through one data platform, eliminating data discrepancies and allowing companies to access the entire supply chain, without any one company having to own all the necessary assets.

Engaging one-self with platform models is the possible way to go forward as the upcoming regulations will subsequently increase the operational costs of each individual company, a challenge only the biggest companies are probably able to sustain. Platforms on

the other hand offer a clever way of enabling smaller and medium companies (SME) to remain in the logistics industry by sharing the burden of the increased costs, while having access to a multitude of assets from the entire supply chain by the means of collaboration over such platform, essentially levelling the playing field.

In the present economic reality with increasingly complex economic interdependencies platform models are emerging as a stable point of contact for customers, companies and sectors alike. Indeed platform models offer an overview of the entire supply chain by creating a network in which its members can interact with each other, simplifying and streamlining interactions, making it thoroughly transparent.

One of biggest advantages of platform models is the easier accessibility for a customer in search of an operation requiring the entire supply chain. Indeed from the initial pick up at the door, to the transport overseas or by air travel until the last-mile delivery, the platform models enable an efficient and consequent follow through of the entire operation, with the customer having complete knowledge of the cargo's whereabouts at all times.

Where previously it was necessary to individually approach and tediously ensure an interplay between the two or more parties within the supply chain, the platform enables an automatic interaction and execution.

The other immense advantage is the consolidation and simplification of the, in parts, highly fragmented logistics sector which in the past further complicated efficient executions in terms of harnessing the entire supply chain.

The convergence of data streams; new cloud, platform and blockchain technologies; and strong market forces will give rise to new platform business models in the logistics, trade, freight, and maritime industries.

The question pertains as to what reaction the established entities within the current logistics industry will show. They do have the choice between adapting to the global developments which all point towards platforms being the bedrock on which economies in the future will be built upon, essentially adapting to shifting economic preferences, for instance by the customer and the finance industry, and not being disrupted by them.

31 <https://blog.tradelens.com/news/tradelens-ecosystem-update/>

# Short summary

In order to achieve long-term sustainability the companies in the logistics industry must engage themselves with their two biggest challenges, the establishment of transparent supply chains and the identification of new forms of efficiency. Achieving this will require an optimization of the current business model.

In fact, such costly optimizations, will only be possible with financial support from the banks. This support, from the maritime banks, is generally there, as seen with the Poseidon Principles, along with a willingness to engage themselves again with the maritime industry, but such financial aid will possibly only be granted to companies which are already transitioning into sustainable business models.

This essentially means that the first steps, along with the investments, into becoming a digitalized entity have to be undertaken by the companies themselves, with the financial institutions stepping in at a later point to help sustain such operations.

Whatever the case may be, a culture where platform models are the norm is still in its infancy, with one of the main reasons being that logistics companies are mostly resistant on sharing data about their business operations to each other.

Whatever the reasons for the failure to achieve the transformation from selfishly storing data to data sharing, the amount of data continues to rise in business and society.

Subsequently processes are increasing where analytical decisions and actions will likely develop into a viable tool for business decisions instead of solely relying on intuition and experience.

In short, the need for data-driven organizations and cultures isn't going away. Firms need to take action and adopt comprehensive data sharing principles.

Many companies in the logistics industry have invested heavily in technology as a first step toward becoming data-oriented, but this alone is not enough.

Firms need to take the next step and collaborate, in order to get away from low margins and regain profitability which is only possible by collaborating in an environment where trust, transparency and data are factors.

In conclusion, the landscape of modern logistics is rapidly changing, with the existing companies whom recognize the change, investing in digital logistics technologies, ultimately constructing or joining a platform model.

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