WHITEPAPER

The impact of missing and late information in the import container operations

Flowfox

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Ocean carriers, forwarders and importers face several problems concerning their import container operations. The issues with missing and late information, such as the next mode of transport, gate out date, drop-off depot and empty return date, impact their businesses as well as their partner terminals, depots and other parties on the supply chain. This paper outlines these challenges and offers a new approach to standardize and simplify the information exchange by Flowfox.

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Challenges in the status quo

Next mode of transport and gate out date

The next mode of transport as well as the gate out date are typically unknown at the container terminals, even after a vessel discharges. Our data shows that in less than 15% of all import containers will the terminals receive information regarding the next mode of transport (truck, rail, barge) as well as indication regarding the gate out date prior to unloading the incoming vessel.

This missing information results in terminal operators being facing the challenge of where to stow the containers at the terminal after discharge. Terminal operators' goal is to have a minimum number of moves per container in their operations as each move costs and leads to less efficiency. As an example, the costs per move in the North Range lies between 17€ to 30€ and on average each container is moved 0.5 times on the terminal for restowing or stacking. Currently, some container terminals approach this issue by trying to make predictions based on historical data. However, their success has been limited, due to inaccurate and unstructured data. Therefore, it's more of a guessing game than proper prediction.

Besides the terminals itself, all stakeholders are impacted by this missing information. These parties, such as ocean carriers, forwarders, importers, truckers, rail and barge operators, face inefficiency in their operations such as:

1. Truckers often encounter waiting times at the gates.
2. Ever growing container traffic as well as vessels getting continuously larger have a heavy impact on congestion especially during peak seasons. Terminals will need to increase their capacity to be capable of handling operations while staying productive. However, intermodal connectivity and geographical capacity limits will continue to be restricting factors, while potential incidents, especially in bottlenecks on road, rail or at sea, may have reinforcing effects.
3. Even with a slot system there is high traffic causing a negative environmental impact.
4. Increased Demurrage and detention costs are a result of inefficient planning and missing information.
5. Delivery may be late for importers and subsequently lead to problems (delays, pause in production, etc.) for the retailers and consignees.
6. The limited potential for planning leads to underutilized assets.

Combined, these issues have a monetary, economic and environmental impact on all participants in the supply chain. Solutions are needed to contribute to the goal of the IMO to reduce CO2 emissions: “The transport and logistics sector is a major driver of carbon emission. Between 2000 and 2018 CO2 emissions in road freight transport grew by 42% globally” (PWC).

“The International Maritime Organisation (IMO) has set a target to cut CO2 emissions from international shipping by at least 50% by 2050 compared to 2008 levels, with carbon intensity reduced by 40% by 2030.”
(PWC)

Drop-off depot and empty return date

Empty equipment planning is a crucial part for ocean carriers and is challenged by the complexity of matching import containers with exports.

Missing or late information exchange regarding the drop-off depot and empty return date impact ocean carriers. Often, this information is unknown or only supplied shortly before the planned return of the empty container. As a result, ocean carrier’s export planning is heavily impacted, as they require to know when and where empty equipment will become available. Often, ocean carriers can only make a rough estimate within what week and which location the equipment will be returned.

The results of missing information leads to poor export equipment planning, costly empty repositioning, unnecessary Co2 emission and incorrect drop-offs that is described in the following part.

Firstly, even if ocean carriers use export forecasts, their equipment planning is usually weakest link. Especially in high demand areas ocean carriers are unable to cover their businesses resulting in a lack of reliability and plannability for their clients. This lack of planning for exports also leads to forwarders and shippers paying higher costs and delays. As an example, in the second quarter of 2021 several forwarders confirmed empty container releases were rejected by ocean carriers after 4-5 weeks, as they could not cover the bookings due to a shortage. While some locations are facing

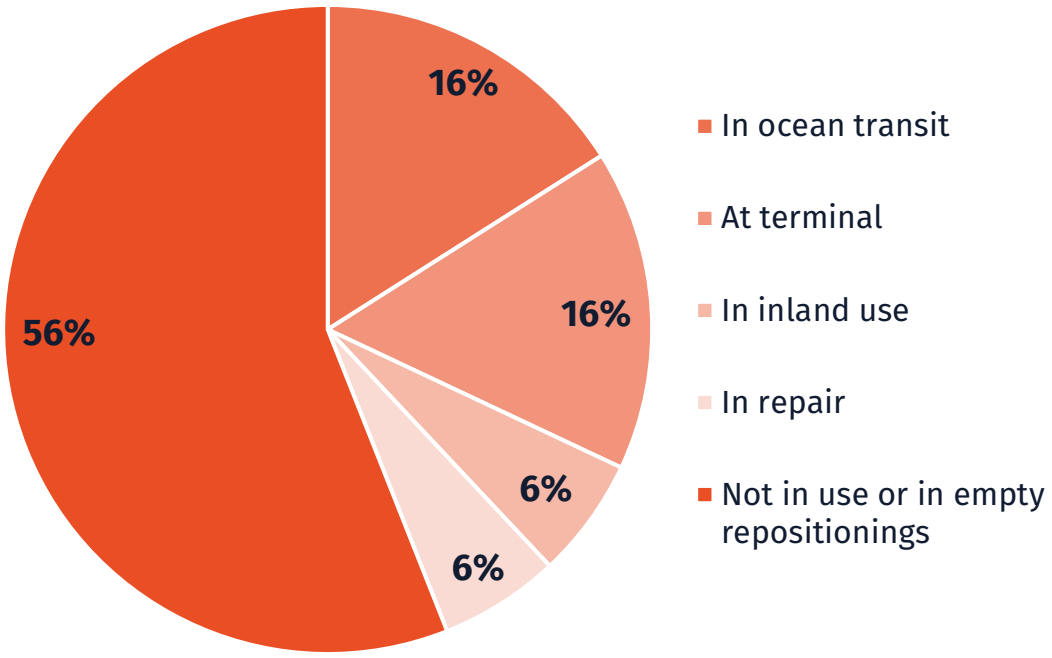
shortages of empty equipment, there are often areas with a surplus of equipment, which leads to opportunity costs.

Secondly, empty repositioning is a massive cost for all ocean carriers. These costs are also passively passed onto the ocean carriers customers due to e.g., late availability of empty equipment. Moreover, the repositioning of empty containers has a high negative impact on the environment.

Lastly, many containers are dropped-off incorrectly. This is possible since depots simply accept empty returns, as it is profitable for them. Generally, ocean carriers charge severe penalties for incorrect drop-offs. However, many have no system to control the returns, only check them randomly or in some cases not at all. Only in very few cases are return references, valid for a certain period of time, are filed by the ocean carriers and controlled by the drop-off depots.

The following figure represents the impact of poor empty equipment planning, showing a staggering number of 56% of containers being unused or in repositioning.

Container usage per location and status



Source: The Geography of Transport Systems, Jean-Paul Rodrigue (2020)

A study of the Boston Consulting Group (BCG) shows that “a typical mid-sized ocean carrier will pay up to $500m a year in empty container positioning costs, with a staggering $15-$20bn spent industry-wide”. Additionally, they evaluated the positioning costs of 12 global carriers and calculated that deadheading empty containers represents 5-8% of a carrier’s costs. As an example, the standard costs to reposition a container to China is about $300 to $400, mostly compromised of storage, trucking and stevedoring costs when they travel at very low cost on ultra-large containerships.

Key challenges of the stakeholders

Terminals:

- heavy costs for unnecessary container moves at the terminal

Ocean Carriers:

- lost business due to sub-optimal equipment planning
- heavy costs due to empty repositioning

Forwarders:

- lack of planning

Importers:

- delays in delivery
- invoice disputes

Approach

We at Flowfox believe that in order to solve the above stated problems a collaborative approach between ocean carriers, importers and terminals is needed. By collaborating, necessary data would be shared, and synergy effects would be created. All data regarding the next mode of transport, the gate out date, the drop-off depot and the empty return date should be collected as soon as they become available and preferably as part of the import container release process. Collecting and providing this data needs to be effortless, standardized and automatically processed. Additionally, forwarders and transporters would be encouraged to provide high accuracy of the data information validity, early presentment and limited changes.

Flowfox provides a data generation and information exchange system within our Import Container Release platform (Imcore). Imcore collects the information from importers regarding the next mode of transport and gate

out date as well as the drop-off depot and empty return date within the release process. This results in preventing any extra manual work efforts.

Moreover, using historical data, export forecasts as well as dynamic drop-off and pick-up charges can lead to ocean carriers being able to improve their predictions with the help of algorithms. This results in more efficient equipment planning and a decrease in empty repositioning. An overall positive impact on the entire export business would be achieved.

At last, throughput rates of terminals could be increased with available data for next mode of transport and gate out date. All terminals could reduce their operational costs significantly, while also reducing unnecessary container moves at the terminal to a minimum, generating more efficient operations. These benefits would also directly transfer to the ocean carriers, as they often operate their own terminals. Additionally, ocean carriers could gain a better position in negotiating terminal contracts, as they could provide the required data to the terminals.

Overall, Flowfox' system offers an opportunity to improve and automate the import supply chain while also providing a positive planning effect for the export business. By enhancing several parts of the container release process our goal is to provide a platform that offers economical and environmental benefits for all participants of the supply chain.