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CASE: Reinventing the Container Shipping Industry

Jens Geersbro · Thomas Ritter

Introduction

Containerized shipping is the backbone of global trade and a pivotal element in modern day globalization. Every year, millions of containers are shipped onboard more than 5.000 container ships – the main shipping routes being between Asia, Europa and the USA. In 2010, more than 30 million TEUs (twenty foot equivalent units – the common unit in container shipping) were exported from China alone¹.

Container shipping was invented by Malcom P. McLean, the owner of a small trucking company in North Carolina in the USA. He was frustrated with the time and effort it took to transfer cargo from trucks onto a ship and later from the ship back onto trucks. After several years of development and testing, he put 58 trailer truck bodies on top of a modified tanker vessel in April 1956. Because ship owners were skeptical at the time, McLean had to establish the shipping company Sea-Land – the name also indicated the intermodal thinking behind containers connecting land and sea – in order to use and develop his new way of transportation. The capacity of container vessels has

¹ <http://www.worldshipping.org/about-the-industry/global-trade/trade-statistics>

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since changed from the original 58 in 1956 to the latest highly specialized Triple-X vessels of Maersk Line that can carry 18.000 TEUs².

By 2011, despite its importance for global development and change, the 50-year old container shipping industry has not changed much. For an industry that enables global competition, shipping itself has ironically become a rather closed industry, with only a handful of major players and frequent accusations of cartelization. With few competitive pressures from outside, the industry seems locked in its way of doing business and shipping companies appear insular and inward-looking.

One problem in this industry is the practice of overbooking: Shipping companies overbook their vessels by as much as 180% (like airlines do) to make sure that vessels are sufficiently utilized even if some customers do not show up with cargo on time. If more than 100% of the cargo eventually does turn up, some containers will have to be left behind causing delays for the customers and extra handling costs. In response many customers therefore, as a safeguard, book more capacity than they actually need – only to cancel that extra capacity in the last minute. This in turn increases the shipping companies' incentive to overbook even more: a vicious circle.

Overall, customers are less than satisfied with the resulting service they receive, including late arrivals, wrong invoices, long booking times, few e-booking options, in-transparent pricing, complexity of the handling processes, complicated transit documentation that could run into thousands of pages – to name the most annoying items.

In addition, shipping lines serving the Asia-Europe routes are notoriously unreliable: 44% of all containers are late; 11% are more than two days late – and even as much as 8% are more than eight days late. And delays cost money; many products lose value if they arrive delayed. One of Maersk's global retail customers indicated that his products lose 25% of their retail value if delayed for one week. With an average cargo value of EUR 30,000 this translates into a cost of one week delay of EUR 7,500. Some products may suffer even more loss of value if delayed or customers may suffer more indirectly by not being able to fulfill their promises to end customers. As such the damage may also be long term in terms of reduced brand value and loss of credibility between trading partners.

The Manifesto

On 07 June 2011, Maersk Line publishes a manifesto, challenging the way Maersk Line and the whole industry thinks about container shipping. In a speech by CEO Eivind Kolding, the key elements of the manifesto are outlined³:

² For more information see: http://www.worldshipping.org/pdf/container_ship_revolution.pdf

³ Cf. Maersk Line press release.

- Getting cargo on time: As an industry we only deliver one out of two containers on time. Name a supplier to your business that only delivers half the time, but is still able to count on your loyalty as a customer.
- Making it easier: Shipping is a complex business, but do customers have to know?
- Doing it with environmental excellence: The industry's total emissions comprise between three and four percent of global emissions – higher than the nation of Germany. But shipping is the most environmental friendly transportation means. As such, there is potential for both a positive story already now and a contribution tomorrow.

The Daily Maersk Concept

Following the manifesto, Maersk Line launches a new offering called “Daily Maersk” on 12 September 2011. With Daily Maersk, Maersk Line offers its customers “total reliability”, i.e. Maersk Line promises to deliver containers at a precisely specified date at destination. “We set out to design a service that takes the stress out of our customers’ lives, to change shipping from the weakest to the strongest link in the supply chain. After all, shipping is only around two percent of our customers’ total cost. And yet our unreliability has until now forced them to shape their production plans and inventory around it”, says CEO Eivind Kolding at the launch. “The lack of on-time delivery costs our customers large sums of money because it makes shipping more of an art than a science. Companies have to make up for an unreliable supply chain, they are forced to build a buffer in their supply chains and lose income when goods are not on time.”

The Daily Maersk concept is based on approximately 100 in-depth customer interviews and many months of careful preparation, development, and testing. Daily Maersk was not a sudden insight or epiphany of a single individual – it came about as the topic and importance of reliability gradually gained attention among Maersk Line employees at many different levels of the organization. The topic had been discussed throughout the company for several years, but until now no one had been able to find good answers. However, the time was ripe for fundamental change. The project gained top-level support and a task force was established.

The backbone of Daily Maersk is 70 vessels operating between six ports in Asia (Ningbo, Shanghai, Yantian, Tanjung Pelepas, Jakarta and Laem Chabang) and three ports in Europe (Felixstowe, Rotterdam and Bremerhaven) which has been described as a giant ocean conveyor belt for the world's busiest shipping lane. Regardless of which of the six Asian ports the cargo is delivered to, the transportation time – the number of days from cut-off day at origin to cargo availability at destination – is fixed, i.e. the day of cargo availability is announced. Maersk Line promises that cargo will be available for pick-up by that agreed date. To underline that Maersk Line firmly believes in Daily Maersk, the promise is backed up with monetary compensation (compensation if delayed 1-3 days: 100USD, if delayed 4 days or more: 300USD), should customers’ containers not arrive on time. This promise is a first in the shipping industry. Daily Maersk also allows customers to deliver their cargo anytime, thereby avoiding cut-off

days and thus increasing flexibility. The following table compares the old, traditional and the new offering.

Without Daily Maersk	With Daily Maersk
Cut-off once every week	Cut-off every day
Transit time, counting from vessels' departure to arrival at destination	Transportation time, counting from cut-off to cargo availability
Approximately every second container arriving on time	Every container arriving on time
No compensation if container arrives late	If cargo availability is delayed by 1-3 days, Maersk Line will pay USD 100 per container. If delayed by four days or more, Maersk Line will pay back USD 300 per container

On October 24th 2011 the world's largest container shipping company Maersk Line ships the first containers using the newly launched "Daily Maersk" concept. The containers arrive as planned on November 19th.

Results

During the first year an accuracy of 98% was achieved. By allowing more time for transportation, Maersk Line adds a lot of flexibility to their operations that allows them to make better use of their vessels and to "slow steam". Slow steaming means that the container vessels sail at a speed significantly below their maximum which in turn translates to considerably lower fuel consumption. Daily Maersk is expected to reduce CO2 emissions by 13 % per container moved compared to the industry average on the Asia-North Europe route.

Based on a study developed together with the Cranfield University, the cost of capital savings realized as a result of buffer/safety stock reduction range between 100 and 400 USD per FTE. The range depends on a number of factors, mostly the customers current carrier mix and cargo value.

There is a multitude of added benefits, such as:

- reduced need for warehousing
- better staff utilization (both blue and white collar)
- opening opportunities to shift portion of cargo from air freight to sea freight
- increased customer (buyer) satisfaction
- reduction in obsolescence costs
- efficiency gains for vendors and production planning - by being able to produce and deliver to the ports according to their needs, rather than shipping lines schedules

Outlook

In an industry notorious for its lack of precision and poor delivery accuracy, Maersk Line pioneers a new approach to shipping: instead of the traditional focus on short transportation times, Daily Maersk focuses on reliable, yet longer transportation times. Maersk Line believes that Daily Maersk is a challenge for their competitors and difficult to imitate for a number of reasons: First of all it requires a certain amount of vessels to be able to provide daily cut offs, and secondly the planning, monitoring and operation of the vessels and cargo are enormously challenging not least in terms of IT systems. Keeping track of every piece of cargo and making sure it arrives on time at the correct location is no easy task as also the poor accuracy of the industry shows. Maersk Line has spent a lot of resources on optimizing their IT systems providing them with a competitive advantage.

Even if some competitors should decide to pool their vessels to achieve critical mass, the integration of different IT systems will be a daunting task.

Further Reading

For information about Maersk Line: <http://www.maerskline.com>

For information about Daily Maersk: <http://www.maerskline.com/en-us/shipping-services/daily-maersk>

For information about the shipping industry: <http://www.shippingwatch.com> & http://en.wikipedia.org/wiki/Container_shipping

For information on world shipping: <http://www.worldshipping.org>