



# IMAGINE YOU ARE CONTAINER

## A GLOBAL JOURNEY



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Imagine you are a container. Choose the size. Choose the colour you want (and remember this because I will come back to it later). You are a container and your journey begins in Asia, let us say Shanghai, you are filled with toys and your destination is Europe. This article will follow your journey to the consumer. On your way we will identify three key challenges.

### THE JOURNEY

The trip to Northern Europe will take approximately a month and you will see a lot of things in the meantime. Things that are there to enable the passage of the mega-ship you are sailing on, such as the Suez Canal, recently widened for a cost of US\$8 billion. As you approach land, you start to see much more of these things. Things that can also be called "infrastructure adaptation costs". You see:

- Rivers and access channels that need to be wider and deeper so not only small ships can pass
- Turning basins that need to be larger
- Bridges that need to be higher

- Tugboats that need to be stronger
- Quays that need to be longer and stronger
- Cranes that need to be higher and longer

### CHALLENGE 1: COSTS

Mega-ships come with huge associated costs on the land side, but there is an imbalance: OECD calculations show that the net benefits of mega-ships have started to become smaller than the net costs. A substantial share of these costs are covered by the public sector, but the benefits are for private actors (shipping lines). There is no public interest in increasing the size of ships, as bigger ships do not bring more trade.

Your ships has arrived safely in port. A mega-ship will typically load and unload 5,000-6,000 containers per port, and herelies the second challenge.

### CHALLENGE 2: PEAKS

Peaks start at the the quay side. OECD research has found that the average time a mega-ship spent in port in 2014

was one day and five hours. Cranes have become quicker, but distances have also become longer as ships became bigger. Therefore the productivity of cranes has remained more or less stable. So the room to manoeuvre is in the number of cranes. Predictably, this has gone up as ships have grown bigger, and for mega-ships, utilising six cranes has become almost standard, yet the deployment of eight or nine cranes is no exception. Nine cranes means nine gangs with workers. So it is a peak not only for equipment but also for labour. A peak means very intensive use for a certain moment, but no use at downtimes because mega-ships bring more at once, but visit less often.

Shipping lines would like to see this go even faster and some ideas have been suggested for this. One idea is to place cranes at both ends of a ship, such was the idea in Amsterdam. Alternatively, one could use completely different cranes, such as the Fast Net Cranes as conceived by APMT. But such innovations have not been widely applied. There is the question of who pays and who gets the

benefits (often not the same actors) so the question remains as to who gets a return on investment.

A bigger problem yet is peak-effects in the yard. Most terminals have a certain capacity to store containers, and the yard can be quickly saturated. The arrival of a mega-ship is associated with an increase of terminal saturation of around 25% to 50%.

To solve this, there are basically two solutions: stock more, or get containers out of the yard as quickly as possible. Stock more means that terminals use the yard as a buffer for the peaks created by mega-ships. This can be done by stacking higher. Instead of stacking you – the container- two high, we will stack you six or seven high. This will mean higher equipment costs and the need for more sophisticated planning. More storage can also be found by increasing the yard area, with just one problem; most ports are in cities and urban land is scarce.

Therefore, in many cases, the yard cannot be the buffer to accommodate mega-ship peaks. What is needed is more labour flexibility. Most terminals are flexible and able to work a ship 24 hours a day, yet the whole transport chain is as inflexible as its most inflexible link.

Containers generally stay several days in the yard, because other actors do not feel the urgency of the peak. Customs and other inspectorates often work only daytime hours and truckers often only pick up boxes in the day. It is the same story at weekends. If there is not going to be more flexibility in working and opening hours, mega-ship peaks will continue to cascade into urban congestion, which is harmful to both citizens and supply chains. This congestion will easily evaporate the emission reductions that can be achieved by building larger and more energy efficient ships.

In medium-sized ports, mega-ship peaks could help to create more critical mass to organise hinterland transport by rail. However, there is a problem: the mess is much bigger if a mega-ship is delayed. The train has its schedule and might leave the port empty if the ship is late. This happens worryingly often. Barges and feeder ships are also highly dependent on ocean going vessels, and the bigger the ship, the bigger the mess operators are confronted with if a big ship is delayed. The same story applies for freight forwarders, because they will have to change a lot more transport arrangements at the same time in case a mega-ship is delayed.

### CHALLENGE 3: INTERDEPENDENCE

Actors in the transport chain are dependent on each other, so there is a need for cooperation. Mega-ships

cannot be used if ports are not adjusted accordingly. Terminal productivity depends on where individual containers are put in a ship; the stowage planning of shipping lines. Urban congestion depends on how ports plan the flow of trucks at the port gate. Therefore there is a pressing need for cooperation.

Do you remember which colour you picked for your container: was it light blue? It might as well have been yellow. And you thought that light blue containers go on light blue ships? Well, you might be stuck on a black one. I am talking here – of course – about the alliances in container shipping.

Mega-ships have intensified the forms of cooperation between shipping lines, because mega-ships need to be filled. This has impacts on terminals, especially if shipping lines in one alliance have stakes in different terminals in a port that is called at, which leads to a lot of moves between terminals and thereby a loss of efficiency.

Another point which is even more important is the bargaining power that the alliances have acquired, and the asymmetry of the power balance with ports. Shipping lines have flexible assets that they can move instantly to other ports if they want. Ports have fixed assets with very long amortisation periods. So ports have reason to be scared about the market power of shipping lines. Paradoxically, recent policies in Europe have favoured the concentration of container shipping, but at the same time stimulated competition among ports. Close dialogue between silos is not enough, more cooperation between ports is also needed.

### CONCLUDING THE JOURNEY

You have been put on a truck, a train or a barge. The conclusion of your journey will be in a distribution center or a warehouse, where your content will be dispatched in smaller units to stores and consumers.

At this point, and by means of conclusion, I would like to ask you to imagine something else: you are no longer a container, but you are suddenly transformed into a human being. How would you – a human being- evaluate these marvels of modern times, these mega-containerships? You might be happy about the decrease of maritime transport costs that they brought about, even if it is small. You may also wonder if this justifies all the additional investments that you have to support as a taxpayer. As a citizen of a port-city you may suffer more traffic congestion and more air pollution peaks, as the peak of mega-ship cargo cascades through the system. You might

be concerned about your working times if you happen to work in the logistics sector, and if you are working in the ports sector you might be worried that the pressure that mega-ships put on productivity will lead to more automated terminals. As a voter, you would expect policy-makers to take these criteria into account when evaluating the public interest served with ever larger ships.

### SUMMARY

Mega-ships should contribute to create a more efficient logistics chain. As we reflect on this, we should keep in mind why we want an efficient logistics chain. I think the answer is in essence: because we want better lives for people. Mega-ships should not only lower maritime transport costs, but also take account of the multitude of human objectives and aspirations described above – because if they do not, their costs easily exceed their benefits.

*Note: This article is an adaptation of a speech delivered at the stakeholders conference of Feport, 1 December 2015 in Brussels, Belgium.*

### ABOUT THE AUTHOR

Olaf Merk is Administrator, Ports and Shipping, at the International Transport Forum (ITF) at the OECD. He has extensive experience in directing studies into ports, port-cities and port regulation and governance. He is the author of a number of OECD books, most notably 'The Impact of Mega-Ships' and 'The Competitiveness of Global Port-Cities'. He is a Lecturer at the Institute for Political Science in Paris. Prior to his role at the OECD, he worked for the Netherlands Ministry of Finance. He holds a Master's Degree in Political Science from the University of Amsterdam.

### ABOUT THE ORGANISATION

The ITF at the OECD is an intergovernmental organisation with 57 member countries. It acts as a strategic think tank for Transport Policy and organises the Annual Summit of Ministers. The next summit will take place May 18-20, 2016 in Leipzig, Germany.

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