

Pricing on turbulences: salty and salient facts that advocate dynamic pricing in the maritime industry

Over the last 5 years, the maritime industry has embarked on a deep and visible digitization journey. Our customers need for transparency, efficiency, agility and customization have triggered a wave of transformation. Digital platforms (startups, carriers, freight forwarders) are surfacing like mussels on a ship's hull. They aim – with a relative success up to now - at providing a new customer experience, starting with an “Expedia-like” booking journey. Starting with a price.

But shipping is not flying. The main difference between a banana and a human being, when they travel, is that in the vast majority of the cases, the banana never comes back. It is consumed at destination. These unbalanced banana-flows, between Ecuador and Denmark, say, induce massive variations in asset utilization, as the vessels and the containers will have to come back – for the next banana cargos.

The purpose of our presentation is to explain how dynamic pricing will unavoidably emerge from container logistics digitization.

We will first draw a few facets of maritime transactions, processes and operations. Imagine that you are not a banana, and that in the middle of your flight you discover that your destination airport will be “omitted” by your aircraft, due to turbulence and congestion in Paris-Charles de Gaulle. Port omission is one example out of many that shows how misleading the “Airline metaphor” can be when ocean freight operations are concerned.

Second, we will advocate the need for a new generation of pricing systems. The pricing engines will have to articulate both a capacity-centric view (as classic revenue management martingales do) together with a customer-sensitive perspective (closer to e-commerce's capabilities). The latter will attempt to capture customer desires, with all their volatility, in a globalized BtoB industry. Australian beef kills can be suddenly delayed as producers who have received rain hold back cattle to add weight. This postponing of beef export volume (out of Australia), in the context of a fierce competition in Brazil or the US, will inevitably have consequences on prices. The “beef effect” is to be taken into account as tens of other commodities spikes or delays in the world, along the edges of a 500 000 port-to-port network.

This new generation of Dynamic Pricing products will give birth to interesting mathematical challenges, somewhere between forecasting, robust dynamic optimization and reinforcement learning. Adding a pinch of salt to the revenue management menu.