



# THINKING OUTSIDE **THE BOX**

Nobody wants to transport empty containers, which means that with the current trade imbalances containers are piling up in some harbours. One company thinks it may have found a solution, reports **Jason Zasky**.

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**I**MPROVEMENTS IN EFFICIENCY tend to be hard-won in the liner shipping industry – the service of transporting goods by means of high capacity, oceangoing vessels like the *Emma Maersk*. To be sure, ocean carriers are always looking for ways to make operations

more efficient, efforts that have included: using low-friction paint to reduce hull drag, utilising ‘smart’ shipping containers that feature RFID technology, and building ever-larger ships, including the 20 ‘Triple-E’ behemoths recently ordered by Maersk.

But Staxxon, a startup based in the US, is taking what might be loosely described as an ‘inside the box’ approach to addressing the inefficiencies involved in moving empty intermodal containers. The company’s patented technology – utilised in steel containers that fold from left to right like an accordion – is elegant in its simplicity. Better yet, Staxxon containers require no significant changes to supply chain relationships, and are designed to honour existing workflow and safety standards. While hurdles remain on the path to commercial acceptance, Staxxon seems well on its way to succeeding where others have failed, in the process helping shipping companies improve their sustainability scorecards.

According to Tom Stitt, Staxxon’s corporate development director, the company’s founder was inspired to begin working on a new container design while driving one of his daughters to college. “George Kochanowski kept seeing piles of containers along the roadway and thought there had to be a better way to deal with them than stacking them high,” says Stitt.

Kochanowski, who Stitt describes as a “serial inventor,” went on to design a folding container made from most of the same components that go into today’s mass-produced containers. “There is some ‘secret sauce,’ but we’ve been pretty careful to use components that are readily available,” emphasises Stitt, recognising that shipping companies would hesitate to incorporate new technology that requires changes to current equipment and procedures.

Meanwhile, those same companies remain loath to transport empty containers, which consume space on ships



Above and below right: Staxxon containers are foldable, which means empty ones have a smaller footprint and leave more space for full containers.

(not to mention rail cars and trucks) that might otherwise be occupied by laden containers. That's because the cost to transport a container filled with goods is roughly the same as the cost to transport an empty one. "If we can fold and nest five into the same space as one, then we make more slots available for revenue-generating containers," notes Stitt, thereby creating "positive" space without having to build new ships.

**IN ADDITION** to reducing operational costs, Staxxon containers also have the potential to reduce the size of a shipper's carbon footprint. The reduced number of moves, lifts or "touches" of empty containers "means that the cranes at the terminal do not demand as much electricity, and there are fewer truck moves through the terminal gate," offers Stitt.

But before Staxxon can license its technology to container fleet owners (who would commission the construction of new units), the company's products must be CSC certified by the International Convention for Safe Containers, a development that Stitt regards as "imminent". The CSC tests are designed to

ensure that the containers can withstand certain forces, and include a stacking test (to establish how much weight you can put on top), and a test that demonstrates that the containers are weather-tight.

Practically speaking, Staxxon also needs to prove to shippers that its containers are durable, and that the economics of licensing its technology are sound. "The ocean carriers are a pretty conservative bunch and have seen a lot of attempts at new technology," begins Stitt. "They want

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to see things like: How do our containers hold up in terms of maintenance and repair versus standard containers? And they want to see how our technology works versus methods they currently use to reduce repositioning of containers."

Staxxon also faces the challenge of clearing up a popular misconception concerning the weight of folded and nested containers. "The assumption is that if you have five containers together they are going to be too heavy," says Paul McCrorey, a mechanical engineer and marketing & communications consultant who has produced animations that illustrate the value proposition of Staxxon's solution. "But five folded Staxxon containers are approximately the same weight as a standard laden container," he continues, before noting that Staxxon's

boxes are stronger than other collapsible containers, in part owing to the vertically-folding design.

Ocean carriers may also like the idea of using Staxxon's folded and nested containers to protect laden containers from the elements. "Some have theorised that having a set of five folded containers placed in the outer ring of vessel cells above the deck would be a benefit in terms of protecting cargo from wave action," explained Kochanowski in an interview with John Doble's Container Shipping Canada blog.

**AT THE** moment, Staxxon is planning tests at select shipping terminals, "to prove to everyone that you can lift them and pile stuff on them and push them around," says Stitt. Then the company will pursue intensive non-commercial trials (that is, no cargo inside) on trade lanes where the ships and equipment have a reputation for

being subpar, and where the elements are particularly harsh. "Basically we plan to beat on them as much as we can, collect the evidence and share it with prospective customers," he says.

The number of prospective customers is sizeable. According to the World Shipping Council, there are upwards of 18 million standard containers currently in use. "Our business model assumes that five to 10 per cent of those containers travel on routes where there is a high imbalance of empties, so that's where we'd like to be in seven or eight years," explains Stitt.

It's worth noting that others have tried – and failed – to get carriers to utilise folding containers, though previous efforts typically involved containers that collapsed from ceiling to ground or had large sections that had to be removed before folding. "They had the fundamental problem of what we call widows and orphans," says Stitt. In other

words, they required a precise number of units together in order to be able to move them again. "We don't have to wait until we have five folded and nested containers," he elaborates.

Meanwhile, Staxxon also faces competition from a number of other startups, including Holland Container Innovations (Delft), CargoShell (Rotterdam) and Foltainer (Brisbane), all of whom have developed their own collapsible or composite container designs. According to Stitt, Staxxon and its brethren all face the challenge of surviving long enough to prove the value of their product in the marketplace. "It's two or three years before you know if you've got a viable design and a viable market," he concludes, emphasising that shipping containers aren't like, say, social media, where changes can be implemented quickly. "It's very difficult to pivot when you're dealing with tons of steel." ■

The containers stacked on the outside are particularly vulnerable to high seas and storms. Folded Staxxon containers could provide a strong barrier to protect paying cargo.

