

# Technological Innovation Turn Up the Volume on Supply Chain Solutions

By John Jeter

The supply chain can't afford to be "Comfortably Numb," otherwise companies will find themselves against "The Wall,"



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**-- Shana Riggs, WPL.**

losing "Money." That's why C-suiters have "High Hopes" that logisticians will be "Fearless" in adapting technology—before they become "Marooned."

What's with all these Pink Floyd titles?

Chris Chase, Marketing Manager at the Port of Los Angeles, recounts a situation last September when a

shipment from Europe, carrying some 350 artifacts from the iconic band, seemed to have vanished to "The Dark Side of the Moon." Packed in two or three shipping containers, the cargo was bound for LA's Vogue Multicultural Museum's "The Pink Floyd Exhibition: Their Mortal Remains," set to open in a few days.

The containers got lost amid some 60,000 others across 12 terminals. Needle-haystack? "It's probably more similar to looking for a specific needle in a stack of needles," he says.

Enter the PortOptimizer, which pinpointed their location in seconds. The cargo arrived at the museum on "Time."

The portal, developed alongside Wabtec, a rail technology company, launched last July. Among its skill sets, the platform can also forecast cargo volumes up to six months out.

Just as the port's high-tech solution includes the word, "optimizer," a big buzzword these days among logistics in other sectors. So let's take a look.

## 3PLs

Kuehne+Nagel CIO Martin Kolbe recalls a foggy day in late November 2020 when the company was called to establish—from scratch—a

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vaccine distribution center in Germany.

In a few days, the global 4PL's IT personnel set up hardware, full connectivity, an online shop and a support hotline—a process Kolbe says normally takes months.

Meanwhile, Kuehne+Nagel's Innovation Centers continue to work on artificial intelligence, machine learning and data science, while its myKN platform's logistics-

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**-- Muru Murugappan, BNSF.**

management tools include quoting, pricing and tracking, among others. Another platform, Information Broker, integrates Kuehne+Nagel's operational systems with clients and service partners.

Kolbe says the company nowadays processes some 6 terabytes of data annually—if printed in Word docs, the pages would cover the Tokyo metro area nearly four times.

"We believe that data runs through the vein of logistics," he says, adding, "When it comes to defragmenting the supply chain, information and technology are key."

Shana Riggs takes a slightly different spin on technology. The Wen-Parker Logistics Vice President of Operations says TMSFirst, its visibility platform implemented this quarter, manages and tracks all shipments and centralizes claims, reporting and pricing through a user-friendly dashboard.

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"This is to allow the team to concentrate efforts on our customers and their shipments," she says, adding: "The pandemic has taught many companies to focus on staff happiness and engagement. Staff engagement also means giving them the

innovation overall, Agility's CEO of Shipa Freight & iContainers Carlos Font says: "The logistics and supply chain industry is one of the oldest industries, but it has largely seen a slow change in the way technology is developed and advanced. At the start of the pandemic, technology infrastructure for SMEs and SMBs was sparse."

Now he sees accelerating evolution and increasing deployment of technology "for goods on the move, irrespective of whether they are on a ship or



on a last-mile bike."

## Rail

Railways are on track to deliver ever more technology.

9 >>

## Robot Makes Room for Inventory—and Advancements

The gizmo looks something like a Roomba.

But UPS's new Geek+ RoboShuttle RS-5 tote, now deployed in Singapore, vacuums up savings. The machine's "double-dip capacity" moves inventory so efficiently it can free up to 50% of warehouse space, according to Sebastian Chan, President, UPS Supply Chain Solutions in Asia Pacific.

Brian Carrier, UPS Supply Chain Solutions, VP of Global Technology and Innovation, notes the company invests \$1 billion a year in technology. And, ultimately, he says the robots will be deployed worldwide.

He says, "We are embracing the digital revolution and future-proofing supply chains not just within Asia, but globally." -- John Jeter



UPS's new Geek+ RoboShuttle RS-5 tote picks through inventory in Singapore. (UPS photo.)





**>> 8** At BNSF, Murugappan, CIO and Vice President-Technology



process automation, AI, open-data platforms and APIs can help bridge those gaps."

Trains roll. The trick is to

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**-- Ivan Ladan, Marine Digital GmbH.**

optimize their efficiency and safety.

Says Paolo Perticaroli, President & CEO of OptRail, "In rapidly evolving scenarios, optimization is a powerful tool that can allow transport companies to adapt and react to critical situations. It finds the best possible solutions given existing conditions and constraints."

The Italian company partnered with Union Pacific to implement OptRail's Advanced Movement Planner. Launched last November,

Services, lists a veritable alphabet of initiatives: the RailPASS mobile application and Automated Gate Systems technology at BNSF's South Seattle Intermodal Facility; an API suite communicating real-time shipment data; and

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the AMP is part of the railroad's new CADX system, which provides real-time information for hundreds of trains moving across UP's 23-state network over 23,000 miles of track.

OptRail's co-founder and scientific advisor, Carlo Mannino, says its decade-long research into the mathematics underlying train routing and scheduling resulted in a dispatching tool that is the first of its kind on such a scale.

expanding Positive Train Control infrastructure, among others.

"The biggest challenge to visibility is how many entities are involved in the life cycle of a shipment," he says. "The shipment handoff points are where bottlenecks can occur. Continued technology investments that enable safe and transparent operations using physical and business-

Gary Baker, Union Pacific's General Director-Tech, hails OptRail's innovation that heightens railroads' role as "one piece of the puzzle in the middle of the supply chain between ocean carriers and shippers who control the critical first mile-last mile."

#### Air

Lufthansa Cargo's Chief Digital

Officer, Boris Hueske, likens one of the carrier's platforms to a taxi driver who speaks neither your language nor

the one at your destination airport—and when the cabbie tries to help you check in, problems ensue. Now, of course, airports provide self-help kiosks—and Lufthansa Cargo's PreCheck works the same way, with all shipment data transmitted and checked before the cargo arrives, he says.

While also noting the airline's quick pivot to "freighters"—passenger jets used as cargo planes to ease COVID's crush, he adds: "Reacting quickly to any developments is nothing new for the logistics industry. We are working on making the interfaces between all parties faster and more transparent."

And alongside other air-cargo execs, he also applauds the International Air Transport Association's globalized data-standardization initiative: ONE Record.

Henk Mulder, the association's Head of Digital Cargo, says that while

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technology is crucial, the pandemic has pushed other issues to the forefront, namely labor problems; quarantines; capacity; increasing volumes of "low-value cargo," as PPEs, traditionally shipped by sea; and booming e-commerce, among others.

"The challenges currently facing the global supply

chain are not primarily around technology, per se," he says. "There is no magic-bullet technology solution to address all of these issues."

At the same time, though, Matthieu Casey mentions a situation that saved a life when a specialized blood product needed to be shipped from Madrid to Calgary. Air Canada Cargo—where Casey is Senior Director, Cargo Global Sales and Revenue Optimization—leveraged its automated reporting system, which tracks shipments that also include the likes of cord blood, viable human organs and human remains.

"Through automated reports, active alerts and proactive communication, we were able to carry this global blood match to support a



#### Maritime

Canadian in need," he says.

Ivan Ladan, CEO at Marine Digital GmbH, lists its multiple real-time initiatives: machine-learning algorithms; AI-based navigation; satellite connectivity; fuel consumption and emission



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reduction; open ocean cargo tracking, risk assessment; and voyage sustainability, among others.

Then, summing up the tech landscape, he says, "Technologies were here many years before, but there was no such high motivation to innovate. The pandemic shook that strongly. The ability to implement such technology within several years worldwide is vital nowadays."



## Thinking Outside the Box: Flattening the Container

Driving from Florida to Villanova University in Pennsylvania to visit his daughter, George Kochanowski couldn't help but notice sprawling acres of shipping containers in ports along I-95.

"He realized that if you were to have an opportunity to fold them and bundle them and move them, there would be opportunities to save costs," says Richard Danderline, CFO of Staxxon Folding Containers, which he co-founded with Kochanowski, the CEO and CTO.

While most tech innovations involve software, Staxxon's is hardware: a 20-foot folding container, which the Convention for Safe Containers recently certified.

Five folded boxes occupy the same footprint of a single container, thus the impact on the entire supply chain would be five-fold: space savings in terminals and warehouses; one truck driver and one

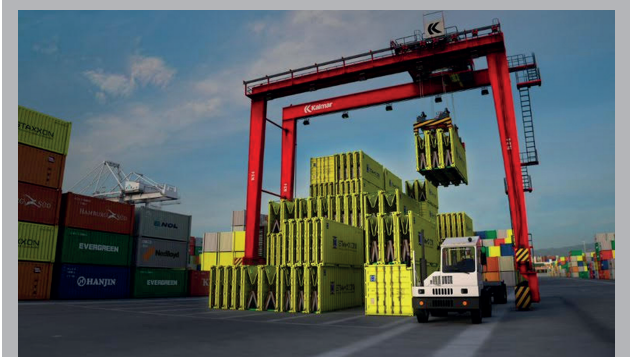
chassis for five boxes versus one; and on and on.

"It also creates additional capacity on the ship without having to modify this ship in any way, and that's an opportunity to increase the velocity of moving the containers where they need to be," Danderline says.

Staxxon's website provides a calculator comparing an ISO standard dry 20-foot container with Staxxon's. Say you purchase 1,000 Staxxon containers, available in bundles of five. After plugging in several variables and adding up operational and maintenance costs and terminal fees, the results show total fleet savings of nearly \$183 million over the containers' 10-year lifespan.

"The empty container is a pure expense, right?" Danderline says. "It makes perfect sense if I can increase my margin by a factor of five."

-- John Jeter



Five 20-foot folded Staxxon containers occupy the same footprint as a single ISO standard dry 20-foot shipping container. (Staxxon photo)