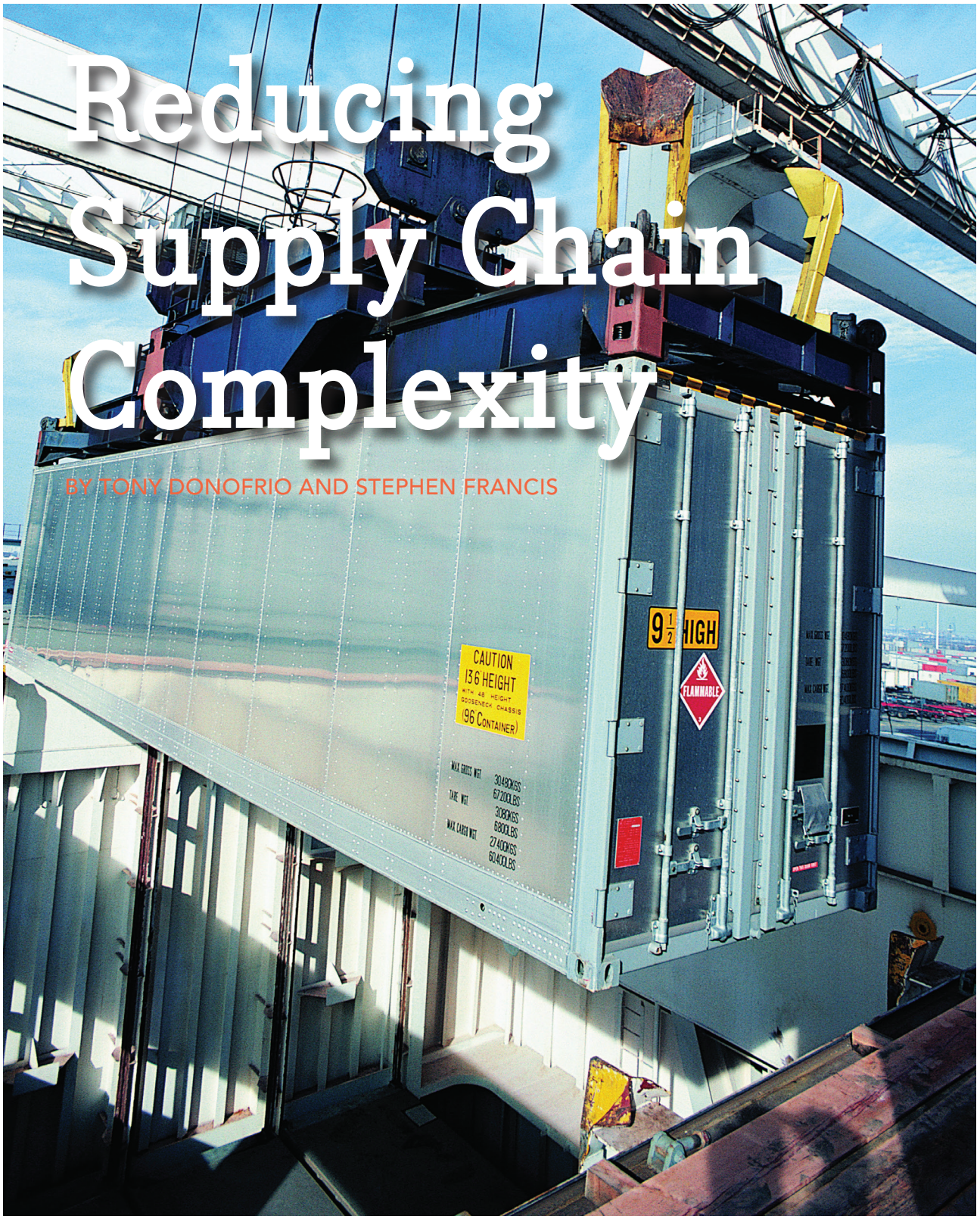
MANUFACTURER'S REPRESENTATIVES

Reducing Supply Chain Complexity

BY TONY DONOFRIO AND STEPHEN FRANCIS



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Supply chain is complex. Like most enterprises, yours is probably moving material across time zones, jurisdictions, suppliers and vendors. You must meet time and cost commitments, or are trying to get to JIT. You're dealing with bullwhip effects, where a minor blunder in Jakarta creates serious delays in Khartoum and furious end users in St. Louis.

Bullwhip effects are a part of "closely coupled" systems without "cushioning:" when one element is out of place, the others follow suit in unpredictable, out-of-scale ways. Complexity as the result of a hidden waste is often the cause, and must be rooted out. We need simplicity, not only in chain design, but also in information and inventory management, and perhaps even pricing.

Why is this so important? Unfortunately, in a global supply chain, complex solutions can quickly and frequently degrade or fail from seemingly trivial delays and confusion. Also, the longer and more complex the chain, the less likely a participant is to understand the up- and downstream environment. Where is this thing going — and why? When participants don't understand their place in the chain, they can't make "on-the-fly" judgments to save closely coupled systems from crashing. Such supply chains are at special risk of long-lasting failure because of physical or political disruption including from natural disasters, long-term port strikes, revolutions, etc.

Complexity also comes with opportunity costs. Companies with long, closely coupled supply chains with many touch points struggle to scale the model — risks do not remain steady at amplified shipping levels, they increase (sometimes in a non-linear way). This can impact labor, vendor and customer relations at critical growth points. Even worse is the possible ensuing "fog of war," where good decisions are based on luck.

Clearly then, we must reduce unnecessary complexity and achieve simplicity where possible — but "simple" and "easy" are not always the same.

A CLOSER LOOK

Start with a birds-eye view. How many vendors and ports are you using? Travel with a product. Where do you change hands? Why? Does that hand-off add value the customer will pay for? When do you sit around?

If possible, visit touch points. Observe processes as workers perform them. Where do they get confused? Where does confusing IT or paperwork create snag-points? A prime culprit is reconciliation processes.

Look at your ERP honestly. Is it really being used? We find a widespread use of workarounds — the front-line lacks training, time and incentives to engage with the ERP suite; instead, they use spreadsheets and enter data later. Rather than blaming participants, consider that behavior follows incentives. Ask yourself: Is this ERP too complex? How can we make it a powerful tool for the user?

We should also consider recent research about fatigue in people's decision-making abilities over time. The more decisions you ask of them, the poorer the decision quality is by the end of the day. Complexity demands more decisions be made at the tactical level.

As we move to a more tactical view, we come to the question of optimization. We advocate balancing it with flexibility, perhaps through buffers. These can be established with simple kanban techniques, using cards until the ERP can catch up; such techniques mitigate the aforementioned bullwhip effect. Also consider a demand-based model, which offers simplicity and can be rebalanced over time to eliminate stock-outs and reduce inventory. This might take an uncomfortable level of transparency with vendors.

Besides chain design, inventory and information flows, looking at pricing can also work wonders for simplifying the supply chain. If this seems backwards, bear in mind the impact of supply chain costs on margins. Even more importantly, just as simplification in inventory and information supports your decision-making, a simplified pricing model can make it more likely your customers decide on you.

The proliferation of cheap sensors and the big data they provide, coupled with exciting new technologies like machine learning, promise optimization levels not currently possible in supply chains. That said, the history of algorithm-based trading in the financial markets should give us pause – 100-year events tend to occur about every seven or eight years. Several times, trading models with excellent track records could not operate in extraordinary market conditions: they turned on their owners and destroyed more wealth than they created. As we embrace algorithmic optimization, we shouldn't forget that people are still very involved in supply chains — people who, just like you and I, thrive on the clarity only simplicity can bring. ❑

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Published by Phoenix Media Corporation Tel: 312.676.1101 Fax: 312.676.1280