

TECHNOLOGY

DATA MANAGEMENT (BIG DATA/IOT/BLOCKCHAIN)

INVENTORY PLANNING/ OPTIMIZATION

TRANSPORTATION MANAGEMENT

SUPPLY CHAIN VISIBILITY

HR &amp; LABOR MANAGEMENT

SC SECURITY &amp; RISK MGMT

# Where Tech Outpaces People in Supply Chains: Four Examples

October 24, 2021 Ken Koenemann, SCB Contributor

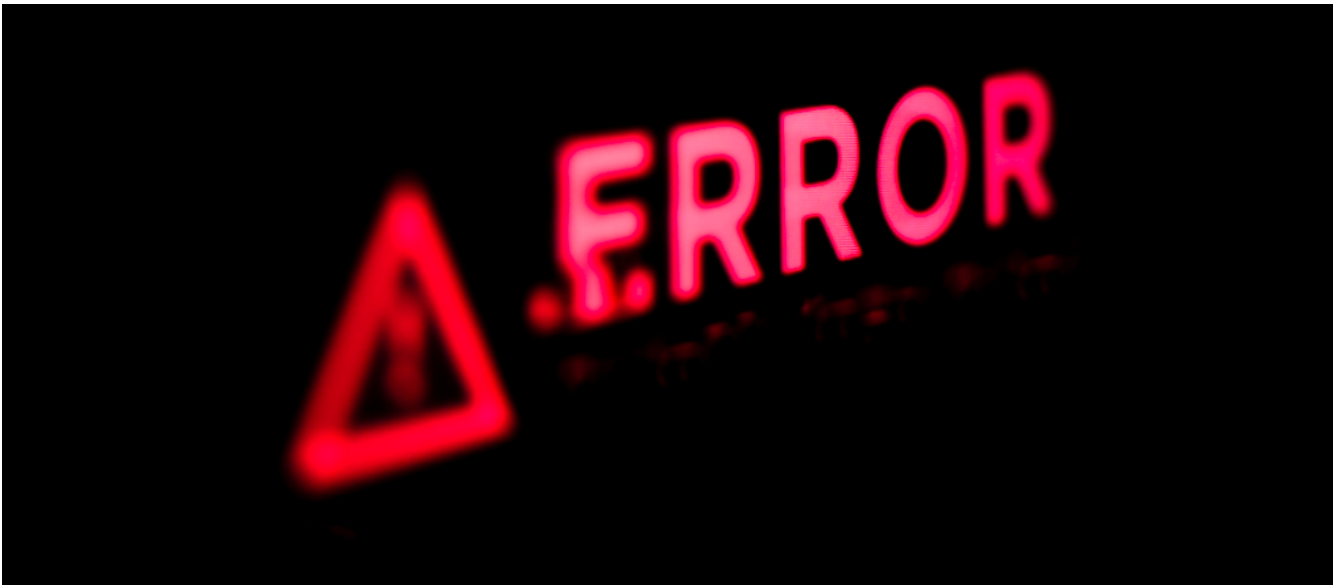


Photo: Getty Images.

Human error is perhaps one of the biggest risks in manufacturing. Despite all the planning, processes, contingencies, quality assurance and fail-safe implementations, all it takes is a single mistake by a single person to bring your entire operation — or supply chain — to a halt. Just ask the captain of the Ever Given; the slightest wrong maneuver can send ripple effects across the globe.

Of course, error is also inevitable. Humans are, by nature, not infallible. The very attributes that make us valuable employees — independent thought, adaptability, socialization — also make us vulnerable. We make errors in judgment when there is a slight change in our behavior or we don't get enough sleep, both of which can impact our accuracy and performance.

The problem is, even seemingly little errors can cause big problems. More than 80% of supply chain disruptions are the **result of human error**. While some may think machines are the answer — if we just automate the entire system, we eliminate the humans and the human error — that's not realistic or even advisable.

However, there are numerous ways technology can help mitigate some of the most common human errors in your supply chain.

**Automated data analysis.** A simple keystroke mistake is all it takes. Someone inputs the wrong information into a purchase order or production order, or they change parameters on lead time, minimum order quantity, cost or safety stock levels and it sends the system into a tailspin. Or perhaps an analyst pulls data out of the ERP or MRP and dumps it into Microsoft Excel to run some scenario planning or manipulates it somehow and the change somehow gets saved into the system. These errors can make their way up and down the supply chain — a change in lead time might prompt a customer to order more product, sending a bullwhip effect up the chain.

Automation can help solve this problem by reducing manual data manipulation and suggesting appropriate parameters. With production data that's gathered, integrated and analyzed within a closed-loop system, a digital manufacturing software platform can help reduce the need to manually enter key data points and link to your organization's strategic goals and KPIs to watch for and alert you to anomalies before they have a chance to make it off the shop floor. With advanced data analysis, digital planning systems can also report and provide recommendations on parameter settings based on insights derived from historical and real-time data. It lets you see how things are changing and gives you some options to make updates — but still puts the power to do so in the human operator's hands.

**Error alerts.** Human errors on the production floor can range from incorrect machine settings to misplaced or accidentally destroyed materials, skipped process steps or contamination. These mistakes can be extremely costly, resulting in lost business or product recalls that can be financially devastating, not to mention put end-users at risk.

There are three ways automation can help eliminate these avoidable production errors. First, IIoT and digital image-based tracking of materials can help make sure raw materials and finished goods are moved and stored accurately and appropriately. Second, digital standards of work technology can establish a baseline for accurate task completion, which can then be used to train staff, verify their work and alert them immediately if it's out of compliance. Finally, computer-aided visual inspection can help spot any out of compliance parts that make it through, so they can be removed from the line.

**Transportation planning.** With **ports jammed** around the world, an ongoing trucker shortage and the potential for weather-related issues as we head into winter, shipping logistics can be a nightmare. In many cases, they're both caused by humans and must be corrected by humans, who may not have all the information they need to make the right decisions.

Here's where supply chain control tower technology can help. By implementing a control tower solution, manufacturers can gain real-time insight into the shipping situation, as well as identify alternatives to mitigate major slowdowns in receiving raw materials and distributing finished goods. By giving you the data to see where problems are and perform what-if scenario planning, supply chain automation can help spot human errors in shipping before they cause problems and help you identify ways to minimize the damage.

Inventory management. Mitigating human errors with technology doesn't just avoid mistakes that can cause disruptions and headaches — it can also save millions of dollars. In one instance, a large food packaging manufacturer was looking for ways to automate its production planning and inventory allotment. By analyzing its current system using manual settings and spreadsheets, the company found a multitude of errors, and its implied service level was in the 60s. After implementing a manufacturing analytics and optimization platform to analyze thousands of SKUs across six distribution centers and over 60 facilities, the company was able to improve its service level up to 95% and reduce its inventory by half, moving tens of millions of dollars' worth of inventory that was otherwise just sitting idle.

With so much uncertainty in the industry, between labor shortage, transportation challenges and fluctuating demand and supply, manufacturers must gain control over their supply chain wherever possible. With many failure points related to human error, it's essential to reduce those risks now more than ever.

Implementing technology that leverages analytics and automation to mitigate some of the most common errors is the best way to survive and gain a competitive advantage in a dynamic, fast-changing environment.



**Ken Koenemann** is vice president of technology and supply chain practices for **TBM Consulting Group**, which includes **Dploy Solutions**.