

INDUSTRY PULSE

Navigating the New Era of Pharmaceutical
Supply Chain Management

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HOW PHARMA LEADERS ARE ADDRESSING DATA, SHORTAGES, AND LOGISTICS CHALLENGES IN AN EVOLVING LANDSCAPE

Supply chain resilience has become a critical concern in the pharmaceutical industry as companies face a new wave of challenges, from drug shortages to stringent traceability regulations. With one in seven supply chain disruptions tied to shortages, and new laws increasing demands for transparency, pharma leaders are exploring ways to secure efficient and compliant logistics. In an industry where reliable access to medicines is paramount, innovative strategies in data management and adaptable freight solutions are essential for success.

In this trends report, we'll look at the key factors driving transformation in pharmaceutical supply chains. Through insights on data-driven traceability requirements, the role of customized logistics solutions, and strategies to tackle shortages, this report provides a roadmap for building more robust and responsive supply chains.

By engaging with these critical supply chain shifts, pharmaceutical leaders can help protect access to essential medicines and strengthen the industry's ability to adapt to a complex, rapidly changing market.

01. STREAMLINING HEALTHCARE SUPPLY CHAINS THROUGH DIGITAL TRANSFORMATION

Forbes | Kate Vitasek, Senior Contributor

Both today, as well as in the future, the key to streamlining healthcare supply chains could very well be found in digital transformation.

Hospitals justly allocate R&D budgets to clinical research, new treatments and direct patient care. But all too often, this causes supply chain modernization to fall by the wayside. As a result, the healthcare supply chain has preserved the tech infrastructure and outdated manual processes of the 1990's — contributing to hugely inflated expenses, treatment errors and frequent shortages.

Supply chain inefficiencies impact healthcare costs, quality of care and access to treatment. In fact, 93% of healthcare provider executives said they faced some type of product shortage in 2023.

Quite often, these issues stem from poorly managed partnerships that fail to address changing circumstances and needs. Fortunately, emerging technologies and stronger collaborative partnerships in logistics offer innovative ways to modernize supply management and benefit both healthcare providers and patients at every stage of the process.



REDUCING RELIANCE ON SINGLE SUPPLIERS

Most hospitals purchase supplies from one or two major sources. This single-source dependency leaves many vulnerable to shortages when production falls behind or demand spikes. In contrast with this, diversified supplier networks help buyers substitute the weak links of their supply chain and reroute orders to bypass shortages before they turn into backorders.

By connecting to multiple sources, healthcare buyers promote healthy competition between suppliers, which helps lower prices on essential supplies. The benefits of diversified supply networks can be further strengthened by collaboration. One form of supply chain collaboration is using the pooled power of Group Purchasing Organizations (GPOs), which help multiple healthcare providers purchase supplies in large volumes to access new suppliers and further lower costs.

Historically, adding suppliers added complexity to billing, ordering and tracking processes. But AI procurement solutions bring together diverse specialty suppliers into a single screen, where shopping, tracking and ordering is easier than Amazon. For those with more “controlled” purchasing processes, solutions can be configured in minutes, mirroring existing workflows for multi-department teams and personalized suppliers.

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SLASHING REVENUE LOSSES FROM BACKORDERS

Backorders create significant challenges within clinical settings, as nurses or techs scramble to locate supplies on site or replace missing items. For patients, the lack of supplies can make a life-saving surgery impossible, forcing either cancellation or rescheduling.

Costs accumulate as the inability to locate high-value items leads to panic purchasing. Since it is fruitless to place more orders with a supplier who has caused delays and does not have stock available, buyers often attempt to quickly establish relations with new suppliers. However, this rush can lead to poor price negotiations (and higher prices), as well as redundant orders for out-of-stock supplies.

Digital inventory platforms can relieve these pains by providing visibility into delivery dates for outstanding purchase orders and

proactively recommending alternative suppliers. By analyzing back-up suppliers' performance, replacement orders can be redirected to the most promising sources. Similarly, surgical operations can be prioritized according to patient risk and available supply or rescheduled based on the expected arrival dates for the back-ordered item.

As Luka Yancopoulous, CEO of Grapevine, a tech provider that uses automatic tracking to redirect clinical supply backorders to sources with available stock, explained, "When healthcare facilities can compare an item's pricing and availability status between all of their suppliers, they can reduce their own expenses and ensure that critical supplies are available when patients need them. Technology helps healthcare facilities take a proactive rather than reactive approach to maintaining stock, which enables them to deliver a higher quality of care to their patients."

ENTERING THE AGE OF EFFORTLESS INVENTORY

Surprisingly, medical inventorying often still takes place by hand, with ordered quantities recorded on paper forms or spreadsheets and staff left to their own devices to perform periodic cycle counts of remaining stock.

With this system, records often aren't updated promptly, leading to uncertainty regarding actual stock levels. While forgotten supplies expire, clinicians waste hours searching for supplies that are long gone. Costs grow as the inability to locate high-value items leads to more replacement purchases.

In fact, it's estimated that the total annual cost of waste in the American healthcare system ranges from \$760 billion to \$935 billion. If effective interventions could cut this waste by 25%, it would likely save more than \$200 billion per year. Two budding fields in health tech promise to do exactly that — warehouse vision-sensing and patient appointment baselining.

Warehouse vision-sensing is made possible through tools such as ceiling-mounted cameras and smart shelf sensors that give decision makers real-time visibility into every item in storage.

These systems automatically report depleted supplies and trigger re-orders without the need for human intervention. Real-time insights into inventory levels across locations prevents order delays, inventory waste and other unnecessary costs.

Patient appointment baselining offers a lower-cost alternative for smaller healthcare specialists, tracking supply usage based on different appointment types. This promising field aims to predict burn rates of supplies based on clinical use and patient schedules, offering real-time insights into inventory levels and automatically restocking supplies as needed.

Such digital solutions in healthcare would provide supply chain leaders real-time visibility into questions like which patients received medication doses or implants from a particular shipment, the current inventory level for specimen collection kits, the location of a delayed order of stents or the expiration status of operating room supplies across facilities.

GETTING LEADERSHIP BUY-IN FOR BIG CHANGES

Transitioning from outdated infrastructure requires a full-scale digital transformation. While incremental improvements might provide temporary relief, only comprehensive automation can deliver long term efficiency, cost control and resilience.

To truly evolve hospital supply chain operations, healthcare facilities must become more adept at using integrated platforms that cover the full source-to-pay lifecycle by providing complete data connectivity, advanced analytics and modular configurability across purchasing, inventory and logistics activities.

Executives must commit to reimagining supply chain operations as strategic drivers of care excellence. By using technology to create more resilient and diversified supply chains, hospitals can elevate future patient outcomes as well as their own fiscal health and crisis resilience.

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02.

PHARMACEUTICAL SUPPLY CHAINS RAISE DATA CONCERNS AS TRACEABILITY LAW NEARS FINAL STEP

BioPharma Dive | Deborah Abrams Kaplan

A decade-long regulatory deadline is looming for the pharmaceutical supply chain to electronically share drug data from end to end, or risk healthcare ecosystem instability.

If a pharmaceutical manufacturer can't provide unit-level serialized products to its distributors, no one along the supply chain can legally move it to the next step. If the distributor is unable to provide the pharmacy with electronic tracing data, the pharmacy can't legally receive the product or dispense it to the patient.

The new rules come as a result of the final implementation stage of the Drug Supply Chain Security Act, or DSCSA, which aims to boost drug traceability and improve patient safety. Companies have been preparing to comply with the law's various milestones for some time, as it was enacted nearly a decade ago.

But as the final compliance step approaches, association surveys and public meetings alike show stakeholders fear technical or practical unreadiness could throw a wrench into the drug supply chain.



INDUSTRY VOICES RAISE CONCERNS OVER READINESS

A supply chain is only as strong as its weakest link, and pharmaceutical drugs depend on many companies along the way to ensure medicines reach patients.

Manufacturers, repackagers, wholesale distributors, third-party logistics providers and drug dispensers like hospital and retail pharmacies must all comply with new requirements under the DSCSA. While many companies say they are fully prepared, Elizabeth Gallenagh, general counsel and head of supply chain integrity at the Healthcare Distribution Alliance, said there are still gaps along the chain.

Gallenagh said part of the issue with industry readiness is that many companies are treating compliance deadlines as a prompt for action, but data problems could result from a lack of prior testing.

“In their mind the compliance date is their trigger,” Gallenagh said. “This is the flaw in the law. The last push has been written as flipping the switch, but you can’t flip the switch and have it work seamlessly.”

Collaboration, technical issues lead list of DSCSA challenges

Percent of manufacturers and distributors who answered: From your perspective, what are the key challenges for meeting the DSCSA’s 2023 requirements?

Gallenagh said she has heard reports that less than half of manufacturers are ready to share data with distributors as well as concerns from dispensers about whether they can provide products to patients if they don’t have the right data once the DSCSA is enacted.

Gurdeep Sidhu, manager of QA global policy at Canadian generics manufacturer Apotex, said there are also challenges with the downstream connectivity.

“Not all the partners are on board with the requirements,” Sidhu said in a [December public meeting](#) on implementation challenges, hosted by the Food and Drug Administration. “We want to make sure that there are some exceptions outlined, and how do we handle them.”

If any link along the supply chain is not able to receive and transmit the tracing information electronically, the drug cannot move to its next step.

WHAT IF COMPANIES CAN'T SHARE DATA?

If any link along the supply chain is not able to receive and transmit the tracing information electronically, the drug cannot move to its next step.

“Technically distributors can’t receive or sell product downstream if they haven’t receive the appropriate data from the manufacturer,” Gallenagh said. “If you don’t receive something, you can’t send something.”

The Healthcare Distribution Alliance is concerned about a product stoppage and is requesting a “stabilization” period from the FDA to allow the product to flow and continue moving toward the unit level traceability goal. It could involve narrow exemptions and some delays for specific requirements.

The FDA also received feedback from other stakeholders on their level of readiness and implementation challenges at the FDA’s public meeting in December.

The regulator said in an email to Supply Chain Dive that it plans to finalize several draft guidelines by November, including the standards for data exchange. The FDA also said it heard concerns from stakeholders about small entity compliance, including small dispensers with 25 or fewer employees, and will continue investigating whether alternative methods for compliance are needed.

“FDA will be conducting a small dispenser assessment that will examine necessary software and hardware’s accessibility, cost to obtain, install, and maintain, and integration into business practices,” the spokesperson said, noting the study will inform potential alternate compliance methods. “Continued outreach is needed because stakeholders felt there is still a lack of understanding of the complexities and needs to meet DSCSA requirements, particularly small entities.”

The FDA agency announced the process for stakeholders to request a waiver, exception or exemption from the act’s requirements. It has already exempted some COVID-19 products.

As for compliance, Gallenagh said enforcement of the DSCSA may be relegated to different actors, such as the FDA for manufacturers and state authorities for pharmacies. But if there is strict interpretation and enforcement of every aspect of the law by the end of November, there will be product shortages.

“The wiser person says there’s no way they can let that happen,” Gallenagh said. “It’s safe to say, everything will not be perfect.”

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FDA

03.

WHY CUSTOMIZED FREIGHT SHIPPING SOLUTIONS ARE ESSENTIAL FOR GROWING BUSINESSES

TechBullion | Abdul Basit

In today's business environment, it is imperative for growing companies to refine their processes to stay at the forefront constantly. A critical factor that directly influences a company's effectiveness and customer satisfaction is its approach to shipping goods.

While many businesses opt for traditional shipping methods, personalized freight shipping solutions can be a game changer, offering benefits in terms of cost efficiency, adaptability, and dependability. This piece delves into the importance of tailored freight shipping solutions for expanding businesses and how they can foster growth.



INCREASED ADAPTABILITY ALIGNED WITH BUSINESS REQUIREMENTS

One advantage of freight shipping solutions lies in the adaptability they provide to businesses. Unlike alternatives, customized solutions empower companies to oversee their shipping operations from start to finish. This level of flexibility enables businesses to harmonize their freight needs with changing demands, ultimately enhancing overall efficiency.

Tailored freight shipping solutions enable expanding businesses to configure their transportation methods based on factors like delivery schedules, product specifications, geographical coverage, and customer preferences. Through partnerships with logistics experts specializing in crafting bespoke transportation strategies, companies can swiftly adjust to market shifts and outpace rivals.

TAILORED SOLUTIONS FOR ENHANCED COST SAVINGS

One benefit of freight shipping is the improved cost efficiency it brings. Unlike shipping options with fixed prices and services, customized solutions offer flexibility that caters to each business's needs.

Through tailor-made services, expanding companies can effectively manage costs and maintain service excellence. They can negotiate pricing agreements tailored to their shipment volumes or leverage economies of scale when feasible. By customizing transportation processes based on budgets and priorities, unnecessary expenses can be eliminated altogether.

EMBRACING CUTTING EDGE TECHNOLOGIES

The advent of the technology-dominated age has revolutionized industries, including logistics and supply chain management. Customized freight providers embrace these advancements by integrating state-of-the-art technologies to streamline operations and improve efficiency.

By utilizing tools like real-time tracking systems, data analytics, and predictive modeling, personalized freight solutions deliver benefits such as enhanced visibility, accuracy, and control. With access to innovations, growing businesses can stay ahead by making informed decisions based on data insights, optimizing resource allocation, reducing transit times, and proactively addressing potential challenges.

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ENHANCED CUSTOMER SATISFACTION THROUGH TAILORED SERVICES

In today's business landscape, where customer satisfaction is key, providing personalized service is crucial for ensuring customer loyalty. Tailored freight shipping services enable emerging businesses to offer shipping experiences that cater to the needs of their customers. For instance, companies can provide packaging options and implement specialized handling protocols for delicate or hazardous goods. By taking into account their customers' expectations and specific shipping demands, businesses can position themselves as partners who are dedicated to meeting their clients' unique requirements.

ADAPTABLE SOLUTIONS FOR BUSINESS GROWTH

As businesses aim to expand their reach into global markets or regions, they face hurdles that necessitate flexible and scalable freight shipping solutions. Customized freight services offer scalability by providing routing choices based on real-time demand and market conditions. By identifying transportation routes tailored to the particular dynamics and limitations of each market through collaborative partnerships with logistics experts, enterprises can mitigate disruptions during expansion processes.

COLLABORATIVE EFFORTS FOR TAILOR-MADE SOLUTIONS

Collaboration between growing businesses and their logistics partners is essential for optimizing freight shipping solutions. By fostering a working relationship, companies can exchange insights and data that empower logistics providers to develop personalized solutions that align with specific business needs.

Companies can share their aims, hopes, and unique considerations, like eco-friendliness or meeting regulations, in a team effort. This transparent conversation assists transportation partners in creating travel plans that match the company's beliefs and goals.

CONCLUSION

As expanding businesses aim for development in today's market, adopting tailored cargo shipping solutions becomes crucial. Utilizing technology for better visibility, refining operations to boost effectiveness, implementing cost-efficient tactics that align with business priorities, and providing personalized services that cater to individual customer requirements becomes imperative. Teaming up with transportation and logistics providers specializing in customized solutions and mastering the intricacies of supply chain management becomes an objective that leads to transformative growth and a valuable competitive edge.

04. UNLOCKING EFFICIENCY AND FLEXIBILITY WITH WERNER'S MULTI- MODAL SOLUTIONS

Werner®

In today's competitive supply chain landscape, flexibility, cost-effectiveness and reliability aren't just nice to have—they're critical to staying ahead. Werner® delivers a powerful, multi-modal suite of solutions designed to push your business strategy to the next level. Whether shippers need to optimize costs, ramp up efficiency or meet the highest service standards, we have the tools to make it happen.

From intermodal and cross-border transport to final mile and premium services, our solutions are built for businesses demanding precision, flexibility and speed. We don't just meet expectations—we exceed them. Here's how Werner's suite of services is engineered to give you a strategic edge:



DEDICATED PRIVATE FLEET: CUSTOMIZED SOLUTIONS FOR UNMATCHED CONTROL

When consistency and control are non-negotiable, Dedicated Private Fleet services give shippers the power to stay ahead. Werner handles everything from fleet management to coordinating drivers and ensuring freight arrives on time—so organizations can stay focused on growing their business. As an extension of a company's internal team, Werner's cutting-edge tracking and real-time reporting tools give its customers full visibility into their shipments, allowing them to stay one step ahead and keep their supply chain running seamlessly.

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The transportation and logistics leader's nationwide network—boasting more than 400 trucks, nearly 30 Werner locations and 180 additional network locations—ensures it can handle anything, from full truckload to intricate residential deliveries.

FINAL MILE: PRECISION DELIVERY THAT EXCEEDS EXPECTATIONS

Werner's Final Mile solutions are designed to deliver the ultimate customer experience, ensuring goods arrive at their final destination with absolute precision. Whether it's residential deliveries, retail shipments or specialized locations, Werner brings unmatched expertise to complex, last-leg logistics. The transportation and logistics leader's nationwide network—boasting more than 400 trucks, nearly 30 Werner locations and 180 additional network locations—ensures it can handle anything, from full truckload to intricate residential deliveries.

From the moment product leaves the manufacturing floor to the instant it arrives at your customer's doorstep, Werner provides a seamless, end-to-end solution that keeps brands looking flawless.

INTERMODAL: A SMARTER, MORE SUSTAINABLE SOLUTION

For businesses looking to make a smarter, more sustainable choice, Werner's Intermodal services offer the perfect solution. By combining the power of truck and rail transport, we maximize fuel efficiency, minimize emissions and guarantee timely deliveries. With strong partnerships with top-tier rail providers and access to a vast national network, we provide flexible scheduling and reliable long-haul solutions that meet your financial and environmental objectives—without compromise.

MEXICO: CROSS-BORDER LOGISTICS SIMPLIFIED

With more than 25 years of experience in cross-border transportation, Werner is the leader in simplifying the complexities of shipping to and from Mexico. The company streamlines customs, paperwork and transit requirements, ensuring goods move seamlessly across international borders. As the top carrier for cross-border freight between the U.S. and Mexico, Werner transports more goods than any other provider, contributing nearly \$400M in annual revenue. The organization's approach ensures efficiency, reliability and cost-effectiveness across borders, making them the go-to partner for cross-border logistics.

PREMIUM SERVICES: SPEED AND PRECISION WHEN EVERY SECOND COUNTS

When time is critical, Werner's Premium Services provide expedited solutions that meet the most demanding schedules. Whether it's team driving, dedicated hot-shot services or guaranteed deliveries, premium offerings ensure critical shipments take priority and arrive on time, every time. With 70 years of expertise in handling complex freight challenges, Werner designed its Premium Services to mitigate risks and deliver your shipments with the utmost precision and care—ensuring no deadlines are ever missed.

WHY CHOOSE WERNER'S MULTI-MODAL SOLUTIONS?

Werner's multi-modal solutions aren't just about transportation—they're about strategic advantage. With Dedicated Private Fleets, Final Mile, Intermodal, Cross-Border and Premium Services, the company provides the flexibility to meet any supply chain challenge head-on. Its fleet features everything from standard dry vans to specialized solutions like hot shots and heavy haul. When you choose Werner, shippers gain a powerhouse that's committed to delivering unmatched value, sustainability and tailored solutions that grow with their customers.



Werner Enterprises, Inc. (Nasdaq: WERN) delivers superior truckload transportation and logistics services to customers across the United States, Mexico and Canada. With 2023 revenues of \$3.3 billion, an industry-leading modern truck and trailer fleet, over 13,000 talented associates and our innovative Werner EDGE® technology, we are an essential solutions provider for customers who value the integrity of their supply chain and require safe and exceptional on-time service. Werner provides Dedicated and One-Way Truckload services as well as Logistics services that include truckload brokerage, freight management, intermodal and final mile. As an industry leader, Werner is deeply committed to promoting sustainability and supporting diversity, equity and inclusion. For more information, visit [werner.com](https://www.werner.com).