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# The Supply Chain: Risks and Opportunities

COVID-19 caused shockwaves throughout the global supply chain of every industry. For the pharmaceutical industry, the pandemic highlighted the fragility of the supply chain and the importance of being able to adjust to demand in a changed environment.

The COVID-19 pandemic has demonstrated that companies need flexibility in their supply chain to ensure production is closer to their end markets or in countries that are at lower risk of disruption.

But even before the pandemic, concerns had been raised about the pharmaceutical supply chain, particularly in light of the growing number of specialist therapies that need different manufacturing and distribution processes to more traditional pharmaceuticals.

## Know Your Supply Chain

During the Reuters Events Supply Chain USA Virtual conference, held in October, a panel of experts discussed the importance of proactive risk management in the wake of shocks such as the pandemic and natural disasters. Among the key takeaways were that risk mitigation meant having deep, real-time insights into your supply chain, knowing what is happening within every node of the ecosystem, having a flexible transport network, and having some agility, whether in terms of extra capacity or inventory.

One of the panelists, Bill Falstich, VP, global supply chain - sterile injectable hospital business, Pfizer, attributed the company's ability to manage capacity during the pandemic to the work it had done to strengthen the supply chain before COVID-19 hit.

According to McKinsey research, optimal supply chain strategies depend on a host of organizational mechanisms working alongside structural setups. Among these are: the quality of coordination and harmonization; a cross-functional performance system; and professional support for employees.

In a separate McKinsey paper, analysts note that companies have become more focused on operational resilience and agility, including workforce agility, as well as greater transparency through the use of digital and analytics tools.

Human capacity and flexibility are key for Pfizer. During the Reuters Events conference, Mr. Falstich noted the importance of being able to move people across the organization where they are most needed and to ensure they have access to data in order to make actionable decisions. Having logistics hubs also provides flexibility with decision-making, allowing people to work remotely, which has been critical during the pandemic.

### Six Markers of Great Supply Chain Teams

- End-to-end coordination, integrating roles and planning processes
- Harmonized processes with strict standards and segment-specific differentiation as needed
- Consistent performance management system and metrics across geographies and business units
- Social cohesion, meaning team co-location or periodic team events, knowledge sharing, and relative initiatives
- Career mobility with fluid roles and assignments, cross-functional job rotations, and mentorship programs
- Internal capability development programs

Source: How great supply-chain organizations work, McKinsey, mckinsey.com

## Addressing Risk in the Supply Chain

During the Reuters discussion, speakers addressed what is needed to ensure resilience to disruption and to mitigate risk.

Important steps include mapping out and assessing the value chain – suppliers, plants, warehouses, and transport — and identifying and cataloging potential risk along the chain. The next step, experts say, would be to build out a supply chain management framework that scores those risks against three dimensions: the impact on the organization if the risk materializes, what is likelihood of risk, and how prepared is the organization to tackle that risk.

Those potential risks also need to be monitored, potentially by having a cross-functional risk board that meets regularly in order to assess preparedness and to identify any new risks.

Working across different functions is also key to risk mitigation. For example, the supply chain should connect regularly with medical to understand what medicines may be in greatest demand, with regulatory groups to engage with governments, and with the commercial team.

Industry experts emphasize the importance of a distributed global services model for diffusing risk, combined with automation of routine tasks.

According to Mr. Falstich, having a global network of suppliers has advantages, providing redundant capacity across sites. As such, when COVID-19 hit, Pfizer was able to implement continuity plans to deal with supply.

## The Supply Chain of Tomorrow

Big changes in the pharmaceutical portfolio with more gene therapies, biologics, and tissue re-engineering means more complex manufacturing and distribution processes.

In a report on the future of the pharmaceutical supply chain, PwC outlines four possible options for companies:

1. Specialist medicines companies delegate manufacturing and distribution to contractors;
2. Specialist companies build service-oriented supply chains;
3. Mass market medicines companies become low-cost providers; and

4. Mass market medicines companies build supply chains to service internal and external customers.

There is also an opportunity for companies to turn the current crisis into an opportunity to improve the way they work. One recommendation that came out of the Reuters discussion was to rethink how companies interact with partners. Logistics are key to enabling the supply chain and a progressive approach would be to think of this function as part of the business and turn to them for help and advice when needed. Moreover, the more dispersed the supply chain is, the more important it is to build strategic partnerships with logistics providers and treat them as an integral part of the business.

Working with businesses that are best-in-class when it comes to managing the supply chain — whether in the pharmaceutical or other industries — can help to ensure smoother operations. And experts recommend cooperating with competitors and recognize that the supply chain is not a competitive advantage but rather a core function that needs to operate smoothly across the industry.

Advanced technologies are also key to enabling smoother, more integrated supply chains and to uncovering potential problems. One such capability is the digital twin, which is a digital model of an object in the supply chain. According to experts in the area, the digital twin lends itself to shop floor automation and process analytics to ensure the manufacturing process definition accurately reflects the requirements defined during digital modeling. Indeed, many life-sciences companies have deployed the digital twin for shop floor automation and process analytics, and some manufacturers have implemented shop floor control and manufacturing execution systems.

Supply chain experts emphasize the importance of digitization in enabling greater insights and transparency that are key to driving transformation. Other digital technologies that are disrupting the supply chain include sensors such as radio-frequency identification (RFID) to monitor where the product is, blockchain technologies to tackle counterfeiting, autonomous robots to meet variable demand and just-in-time inventory processes, and even drones for last-mile delivery from the pharmacy to the patient's home. PV

## EXECUTIVE VIEWPOINTS

**Joanne Santomauro, Ph.D.**
CEO and Founder
Ancillare

### An Integrated CTASC

A fully integrated clinical trial ancillary supply chain (CTASC) relies on strategic partners, infrastructure, and information technologies that simplify communication and streamline exchanges of information among multiple parties. Supply chain organizations must embrace the need for secure information technology systems, quality and regulatory compliance, culture shifts, and continual process improvement. Patient-centric approaches with a focus on robust data also allow for better integration, providing sponsors and their partners clearer insights into their entire CTASC portfolio.

### AI and ML Driving Supply Chain Efficiency

CTASC innovators are developing technologies to drive the collection, organization, and interpretation of supply chain data, enabling the pharmaceutical industry to make more informed decisions at every stage of the trial life cycle. AI and machine learning are poised to become the main drivers of both efficiency and safety in CTASC management. Quality data — processed through secure, intelligent technologies — gives all parties the tools to innovate and optimize their supply chains.

**Joe DePinto**
Chief Commercial Officer
Vineti

### Keys to an Integrated Supply Chain

There are several keys to ensuring an integrated supply chain, including designing the supply chain and operational processes around the patient-centric nature of advanced therapies; understanding the important role each stakeholder group plays in the process and supporting their specific needs and their touchpoints with other stakeholders; ensuring transparency and communication across, and among, each group as dictated by the process; leveraging modern technology to connect and orchestrate the entire supply chain in real time, starting with the steps and activities that have the most impact on patient safety; and standardizing processes and data across the supply chain, ensuring that data is high quality and readily accessible — and actionable.

### Purpose-Built Digital Technologies

The increased complexity and patient specificity of these supply chains is requiring a paradigm shift from manual and legacy electronic systems to purpose-built digital technologies. New approaches not only handle today's current state, but are flexible and forward-looking. The sheer variety of treatment technologies, patients, and stakeholders makes it difficult to ensure compliance and control costs. Companies automating and integrating the end-to-end supply chain with solutions that can do both ensure a successful value chain.