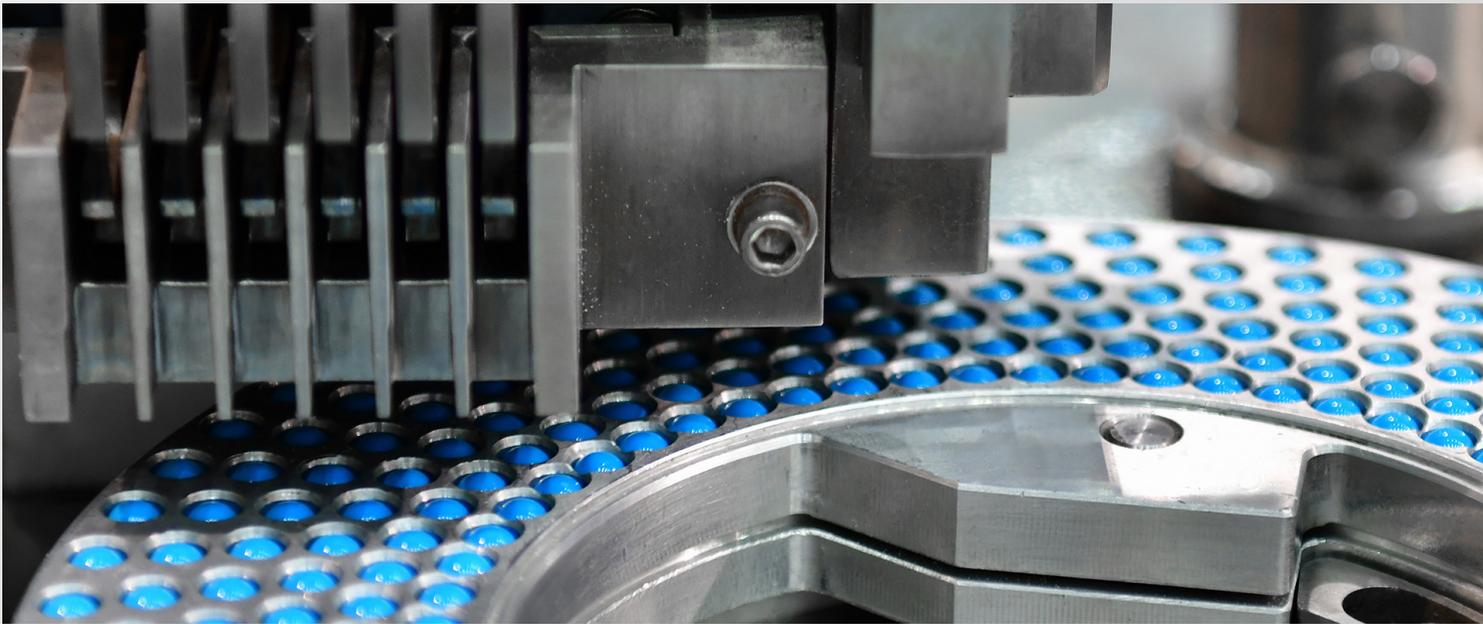


Mitigating Pharmaceutical Supply Chain Risk With Real-time Information

How To Maintain Supply Chain Agility and Resilience

The pharmaceutical industry is critically dependent on two things:

- A globally dispersed and complex supply chain
- The integrity of both R&D and manufacturing activities, as represented by the data that measures both, in order to maintain a licence to operate



These dependencies make it particularly important and challenging to manage supply chain risk. This is especially true when there are so many parties involved in the end-to-end product manufacturing and distribution—including academics, industrial scientists, healthcare providers and patients. All are engaged in joint efforts early in the drug lifecycle, and all are needed to produce innovative products and provide proof of their efficacy and safety.

The ability to ensure your products, and their life-changing potential, is critically dependent on a robust supply chain. The typical pharmaceutical supply chain is complex, with multiple-steps, parties and geographies. The risks that can arise may take many forms, but those of primary concern are: economic, political and geographic disruptions as well as cyber attacks.

Economic and political disruption

Financial or market instability in suppliers—especially where there is a concentration of risk due to small numbers of specialist suppliers in certain types of supply chains—can be a disruptive factor in the supply chain. Pharmaceutical supply chains in some parts of the world have also experienced a growth in political disruption, where national pressures or sentiments give rise to government or regulatory action that seeks to restrict supply. In these instances, politicians and regulators are pressured by their constituencies to focus their efforts locally, and hence try to re-direct supply of components or finished products to their home market.

Geographic disruption

Localised events such as extreme weather, civil strife, workforce disputes, travel disruption are all geographic risk factors. Such disruptions limit global production and efficient shipment of goods that are critical to your continued manufacturing and distribution.

Timely knowledge of geographic, economic, political or cyber disruption ensures you stay ahead of events that could affect your supply chain. With all eyes on further COVID-19 vaccine deployment, the urgency of that need increases. Real-time information is key. It allows you to be more effective—especially where the supply chain partners are not under your direct control—and according to a Gartner survey on supply chain disruption, real-time visibility capabilities help companies manage their supply chain challenges. The pharmaceutical sector's reliance on global supply chains requires access to these and other critical informational tools to assess both current and future risks.

Cyber attacks

Cyber attacks on supply chains, in both R&D and manufacturing, are occurring with increasing frequency and causing large-scale disruption. For example, ransomware attacks can impact the availability, accuracy and reliability of data on the safety and efficacy of your products. Recent examples of security vulnerabilities (e.g. Solarwinds, Microsoft Exchange) mean that pharma companies need to protect their own operations, but at the same time be aware of—and where possible have partial control of those same vulnerabilities that may be present in the supply chain of their R&D and other partners such as healthcare providers in trials. Early knowledge of such vulnerabilities, and in particular of their exploitability, is critical. To achieve this requires a wide scope of intelligence monitoring and lightning-quick response to risk events.



How Real Time Insights Can Help Maintain Your Supply Chain

Leading pharmaceutical businesses are now beginning to look at using the sophisticated artificial intelligence (AI) techniques employed in drug development to enhance their capabilities in other key data analysis areas, such as supply chain risk. Some believe that using these capabilities to scour the mountains of publicly available data on events, social behaviours and 24x7 news media—including social media posts, government data, information sensors and the dark web—could help them better understand risk in their supply chains and help them to make better and more informed risk management decisions.

Such real-time intelligence, gathered from AI-enabled analysis of commercial and social media, may allow you to begin to take action before formal channels confirm the threats, and enable you to move fast to protect your data integrity and your reputation. It therefore comes as no surprise that, according to Gartner, through 2024, 50% of supply chain organizations will invest in applications that support AI and advanced analytics capabilities.



Dataminr Pulse: Early Detection and Being the First to Know

Mitigating and even preventing the risks the pharmaceutical sector is currently experiencing is dependent on organizations being able to gather appropriate information at crucial moments and make decisions quickly.

Dataminr provides a common, clear, and early line of sight into emerging risks so that organizations can act confidently in the face of events that will negatively impact their supply chain. Our pioneering AI platform detects, classifies, and delivers relevant signals on a wide range of high-impact events, including accidents, natural disasters, geopolitical incidents, cyber and physical threats, all of which can impact the movement of your goods.

Dataminr Pulse detects, distills and alerts from more than 180,000 publicly available sources to provide the first — and sometimes only — glimpse of potential threats and opportunities for enterprises, giving organizations a unique and valuable source of data with which to make decisions. This alerting comes from a wide range of sources, from international news sources to sensors to chatter. Dataminr Pulse process billions of public data inputs per day in more than 100 languages and in multiple formats (text, image, video, streaming machine data from sensors, and multi-modal combinations of these formats). This diversity of global and local data ensures the alerts you receive are as relevant and specific as possible.

We support pharma businesses by providing real-time alerts on the topics that matter most to them such as: cargo theft; transportation disruption; energy disruption; upstream disruption; cargo planes; cargo ships; ports; natural disasters; severe weather; new cyber threats; incidents at supply-chain partners and more.

Cyber Attack Targets European Medicines Agency

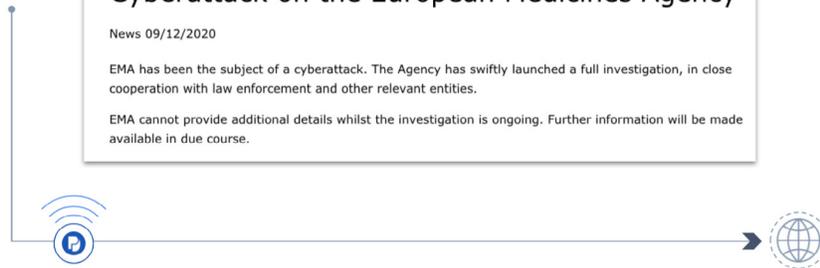
The cyber attack on the European Medicines Agency is a great illustration of how unforeseen events can have a knock-on effect on supply chains. Dataminr Pulse helps customers identify threat patterns from an array of sources, including the deep and dark web enabling them to get those early warnings and put alternative plans in place.

Cyberattack on the European Medicines Agency

News 09/12/2020

EMA has been the subject of a cyberattack. The Agency has swiftly launched a full investigation, in close cooperation with law enforcement and other relevant entities.

EMA cannot provide additional details whilst the investigation is ongoing. Further information will be made available in due course.



Nov 20

European Medicines Agency hosting login portal has Freak CVE-2015-0204, Logjam CVE-2015-4000 in OpenSSL and TLS protocol that enable brute force decryption and downgrade attacks

Dec 9

European Medicines Agency targeted in cyberattack, full investigation launched

Dec 9

BioNTech says documents relating to regulatory submission for Pfizer-BioNTech COVID-19 coronavirus vaccine compromised in cyberattack on European Medicines Agency

Dec 14

Moderna's COVID-19 coronavirus vaccine documents accessed in European Medicines Agency cyberattack

Sources: Shodan

Real-time alerting allows you to operate efficiently and honor commitments to your customers, all whilst staying on top of supply chain threats.

Why not get in touch to see how we can help? One of our advisors would be happy to demo our platform.

info@dataminr.com | dataminr.com/pharma-resources