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Home » Cover Story » Future-ready supply chains

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The COVID-19 pandemic has several lessons for India Pharma Inc as it embraces new strategies and technologies to rebuild and fortify its supply chain



By Lakshmipriya Nair

On Apr 26, 2021

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The COVID-19 pandemic underscored the need for a radical overhaul in supply chain management, especially in the life sciences sector. Faced with challenges unprecedented in scale and scope, the sector had to reassess its approaches and strategies to contain and mitigate the impact of the pandemic on its global supply chain.

Over a year after the onset of the coronavirus pandemic, as the world starts to plan for recovery, it is time to revisit the lessons learnt about supply chain reliability and risk and take stock of the measures being undertaken by the pharma industry to build supply chain resilience.

Especially so, since it is becoming evident that disruptions are likely to increase in regularity and scale, caused by varying factors including emerging pathogens, geopolitical events, climate changes and public health disasters.

The supply chain of the future will be defined majorly by the following characteristics:

Flexibility and agility

As closed borders, nationwide lockdowns triggered fears of drug shortages on a global scale, highlighting the dangers of over-reliance on few sources of supply, the pharma and healthcare sectors were forced to adapt and innovate to develop local capacity and secure local supply.

The importance of improving operating and supply chain models were also highlighted since increasing volatility across the world demands a supply chain that has the flexibility to tackle spontaneous or sudden challenges or opportunities. At the same, it also has to evolve continuously to stay relevant in an ever-changing landscape.

Thus, a key lesson for supply chain management was the need to create and implement agile strategies which will help in eliciting a rapid and effective response to changing market demands; have the capacity to tailor products and services delivered to customers, the ability to produce and distribute products cost-efficiently, curb manufacturing costs and boost competitiveness.

Interestingly, since the onset of the pandemic, there are also several instances in India's pharma sector wherein companies began to repurpose their capacity to start manufacturing products that are in high demand. For instance, India became one of the key global suppliers of sanitisers, PPE kits and hydroxychloroquine, once touted as a game-changer drug against COVID-19.

As Sudarshan Jain, Secretary-General, Indian Pharmaceutical Alliance reminds, “The COVID-19 pandemic has put the pharma industry on a transformational journey. As a trusted global healthcare partner, India has shown tremendous reliability to ensure a continuous supply of quality medicines, including those essential for the treatment of COVID-19. No drug shortages were reported domestically, and Indian pharma companies were able to meet global demand as well.”

This business agility will be crucial to success but to make such turnarounds easily possible companies should take concrete steps to improve their capacities and capabilities.

As Rishabh Bindlish, MD, India Life Sciences and Global Generics Lead, Accenture advocates, “In crises such as the COVID-19 pandemic combined with macroeconomic and regulatory risks, supply chain planning and execution of operations need to be tightly integrated to drive business value. Building resilience with robust scenario-based planning and execution capability will be vital for business continuity and growth.”

Customer centricity

In the present day, customers have to be at the centre of every business strategy. This is true in the case of supply chain transformations as well. The COVID-19 pandemic has underscored the importance of a responsive and adaptable supply chain for the life sciences sector with different endpoints of delivery and information sharing, to ensure that drugs and daily necessities reach those who need them at the right time. And, this would be possible only by comprehending the changing expectations of customers.

A report from Accenture titled, ‘*A license for growth: customer-centric supply chains*’ informs, Supply chains have traditionally been seen as drivers of efficiencies and scale, providing competitive cost advantage. In recent years, though, the role of supply chains has evolved beyond efficiency to growth.”

It adds, “In the aftermath of COVID-19, we expect customers to continue to demand an experience in which supply chains respond with a higher purpose.”

Bindlish elaborates, “Given the current challenges, customer-centricity of business is no longer an option but a necessity. This becomes even more critical for the supply chain as it plays an important role in connecting customers and the operations team. A customer-centric supply chain is a key to unlocking differentiated service offerings that drive revenue growth, improve EBITDA performance, and meet unique customer needs.”

“A customer-centric supply chain helps pharma companies innovate better by using data as an insight generation engine to design new products and services around the customers’ needs. It enables companies to connect with external parties for real-time, end-to-end visibility and integrated planning and execution. It can further optimize day-to-day operations using analytics, performance monitoring and continuous innovation. This approach enables a service-oriented operating model that leverages a hybrid workforce for improved customer experience. Additionally, it helps configure the supply chain into an asset-light ecosystem that delivers customer experience in unique microsegments,” he adds stating that intelligent, customer-centric supply chains powered by digital can help pharma companies create efficient, resilient, and profitable operating models.

End-to-end visibility

Even before the pandemic, the importance of this aspect was understood and acknowledged. But, the pandemic has reemphasised its criticality to deal with complexities and challenges in supply chain management. It has proven that visibility and transparency across the supply chain are pivotal to decision making, be it for inventory planning, selecting the right partners, deciding the delivery points, or optimal logistical processes. It is important for cost control and customer satisfaction too. Be it inadequate inventory management, communication gaps, or slip-ups and holdups – most of the issues can be traced back to a lack of visibility. Thus, it is essential for all other supply chain functions.

This was one of the key topics under discussion when the world was preparing for the COVID-19 vaccination drive too. Even now, many of the hurdles in this massive endeavour stem from a lack of adequate traceability.

As Ashutosh Mayank and Prajakt Raut-Managing Partners at Supply Chain Labs, Lumis Partners explain, “Pharma and medical equipment supply chain, warehousing and logistics were always a specialised field with specific requirements, including regulatory compliances. However, the distribution and administration of COVID-19 vaccines have complexities of a different level – think of it as the complexity and scale of holding elections across the country. Given that multiple doses of the vaccine are required adds to the additional trace and track of not just the products but the persons receiving it as well.”

Luckily, we are witnessing a lot of activity on this front. As Jain elucidates, “COVID-19 accelerated innovation in the pharma industry. Facilitating remote monitoring to enable operational continuity became an important aspect for a resilient supply chain. Digitisation and data traceability helped in supply chain risk monitoring and management by receiving real-time updates while ensuring the correct conditions for delivery. The pandemic also presented the need for greater collaboration among all part of the supply chain management. This helped in ensuring better efficiency in responsiveness while monitoring developments in real-time.”

Mayank and Raut update, “The changing environment will create a favourable and enabling environment for more innovators to enter the field. Not just in pharma and life sciences, adjacent opportunities to build efficiencies in the entire supply chain – from distributed procurement, manufacturing, warehousing, logistics and reverse logistics – corporations and governments are looking at innovations and technologies to build efficiencies, transparency and visibility in the entire supply chain.”

Startups like StaTwig and its solution, VaccineLedger is a case in point. Siddharth Chakravarthy, CEO, StaTwig informs that VaccineLedger is an open-source blockchain network that has been internationally recognised by UNICEF and Gavi as innovative and critical.

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manufacturing plants and other touchpoints. As the data is stored on a blockchain ledger it provides tamperproof records of all vaccines.

He also states that pharma and other industries will learn a lot about traceability and security of products in the supply chain through COVID-19 vaccine distribution.

Thus investment, innovation in supply chain solutions and technologies to provide end-to-end traceability will continue to grow.

To cite an example, JB Chowhan, Founder & Chairman, Vardhman Health Specialities informs that the VHS Group has already started investing in digital technologies, platforms, tie-up with manufacturers and with other stakeholders of the pharma supply chain, over the last two years. He further explains that the Group's venture, VHS LogiTech focuses on connecting customers or patients to manufacturers in an end-to-end traceable manner using its patent-pending technologies on IoT and Blockchain to ensure safety, compliance requirements and maintain the integrity of pharma products since this would help to keep the not-of-standard quality and spurious drugs at bay.

Most of the other providers are also making significant investments in improving their traceability and visibility across the supply chain. Changing behavioural patterns of consumers, regulations and policies etc are also fueling this development.

Security

Supply chain processes must be compliant with regulatory requirements and must ensure the safety, efficacy, integrity and quality of the products. Moreover, appropriate security measures to reduce the potential for theft, loss, tampering, etc must also be taken as the market landscape continues to evolve. To enable this, the industry is relying more and more on technology to make this possible. But, this gives rise to data breaches and threats. There are reports that presently, 40 per cent of cyber attacks occur indirectly through the supply chain. In this scenario, security and protection, of both the products and the data collected at various points, is one of the key parameters while creating future-ready supply chains.

As a result, pharma stakeholders need to deploy proactive supply chain security solutions aided by technology such as cloud-based services, location sensors and real-time intelligent monitoring.

Chowhan advises that since the pharma supply chain is complex, sensitive and has a wide impact, measures should be taken at all levels, i.e. pharma manufacturing, storage and distribution. The sector needs to follow GMP standards, assure compliance, enable traceability and yet ensure security from potential risks with the help of best in class technologies.

Data mapping is an example. Rajit Bhattacharya, CEO, Data Sutram, explains, “Data mapping can simplify distribution efforts by optimising resource management. Detailed data of facilities and resources across an area can help in designing an effective model of approach. Regarding the case of the vaccine cold chain, the amalgamation of IoT and geographic information system (GIS) can mean a big deal as they can be instrumental in preventing losses. This is to say that vaccines are fragile products and degrade very quickly, meaning that they should be kept within a prescribed temperature range to preserve their potency.”

Thus, while the industry is already taking strides towards supply chain transformations; security is an area that needs careful planning and strategy. It should also engage with partners and peers to share best practices and new ideas as well as learn from other industries that effectively manage supply chain security.

Prepping for the future

Our stakeholders feel that certain concrete steps taken today can be key to mitigating the risks in our pharma supply chain and making it future-ready. They laud the government’s move to make India’ Aatma Nirbhar in API/KSMs with the help of the measures like bulk drug parks and the PLI scheme. For instance, Jain states, “The Indian pharmaceutical industry needed to secure its supply of APIs and KSMs in the wake of the coronavirus. The Government of India recognised the need to revive the domestic API manufacturing industry and announced an API policy incentivising the domestic production of APIs/KSMs in March 2020. Recently, the government also announced a PLI 2.0 Scheme to further

strengthen the supply chain and become self-reliant. The core focus of creating scale and long-term survivability of the industry was developed through constant engagements between industry stakeholders and the governments.”

The experts also recommend other steps that can be taken to make our supply chains more resilient to disruptions and disasters. Some of them are as follows:

Improve cold chain

Chowhan recommends, “The global pharma supply chain management is expected to grow double fold in the coming years. Therefore the cold chain logistics market must look at innovations and investments to research cold supply chain management in India. Some of these areas would be the setting up of super speciality pharma warehousing and distribution, last-mile connectivity, digital platforms of Internet of Things, blockchain, secured data management, and annual quality audits. In addition, the other focused areas include 24×7 patient service focus, easy payment methods and online ordering facility, NPI (Name patient Import) of research molecules and excellent customer relation management (CRM) with multi-speciality hospitals across India.”

Embrace digital

Bindlish asserts, “A digital supply chain can help pharma companies with scenario modelling to simulate and prepare for supply disruptions or volatile demand opportunities, evaluating their operational and financial impact. Advanced machine learning-based forecasting solutions can help pharma companies take a significant step jump in their forecast accuracy performance, including forecasting for new business, and certain tender opportunities as well.”

He elaborates, “Digital enables real-time tracking of key parameters such as material receipts, plant dispatches including their performance against plan, and in-transit shipments. Improved supply chain responsiveness and agility helps pharma supply chain networks to respond better to external changes, in terms of demand priority or supply of input materials, by integrating planning and scheduling capabilities. With dynamic fulfilment, digital technology can help the logistics management team to centrally manage load planning, dock scheduling and load execution for improved operational efficiency.”

Continuous innovation is key

Jain asserts, “The (pharma) industry needs a robust coordinated and collaborative approach to strengthen the supply chain. On the lines of Good Distribution Practices, the supply chain operating model should support seamless communication across suppliers, manufacturers, distributors, and customers. Innovation plays a key role in ensuring a stable supply chain in such unprecedented and dynamic situations.”

He adds, “Companies need to continuously adapt to the emerging technologies to maintain competitiveness in the global supply chain. With digitisation and the internet of things (IoT), communicating with stakeholders in the supply chain operations will become easier. It will also enable industry players to facilitate supply chain monitoring and get real-time visibility on all operations. Continuous innovation will empower the pharma industry to have more control over the supply operations to ensure smooth and swift supply chain management.”

Sustainability is important too

The Accenture report reveals, “People around the globe are more conscious about the products they are consuming—where they are sourced, how they are made and how they are recycled. They are increasingly looking for companies that share their environmental, ethical and social values. Buying and sourcing ethically, recycling, and reducing environmental footprints have now become an integral part of a company’s brand value. It is not surprising, then, that the masters in our survey have identified creating sustainable supply chains as their top priority.”

One such example from India could be Laxai Life Sciences, a company involved in drug discovery, CDMO services, API development, API manufacturing and formulation development. It is investing in environmentally conscious technologies like AI-powered drug discovery, green chemistry and continuous flow chemistry.

Ram Upadhayaya, CEO of Laxai Life Sciences informs that his company, recognizing the need for easily available sources of raw material to produce sustainable products opted for backward integration as a strategy to control and de-risk their supply chain.

New strategies for new realities

'Let chaos reign, then rein in chaos.' This is a quote by Andrew Grove, the erstwhile CEO of Intel. He believed that a certain amount of chaos spurred people to think outside of their normal patterns, experiment and innovate. The coronavirus pandemic has proved this true. As chaos reigned and the world was catapulted to a state of disarray, governments, societies, organisations were forced to redraw their approaches to survive and thrive. We are witnessing the rise of new solutions, strategies, visions that are transforming the life sciences supply chain, a metamorphosis that is more suited to the new realities.

Leveraging digital technologies in supply chain

GlobalData's Disruptor Database reveals companies across industries are leveraging digital technologies in the supply chain to create new disruptive product offerings, services and business models. These examples can help the pharma industry to leverage the power and potential of these technologies too

AI: Leveraging AI, companies can optimise supply and demand gap, automate decision making, channel warehouse requisites, identify target consumers, and bring greater visibility on order-to-delivery supply time. For instance, Arizona's DigiTech company Blue Yonder launched an AI-powered end-to-end digital fulfilment platform 'Luminate Planning Portfolio' for manufacturers and retailers. The automated supply chain solution allows companies to fully manage their supply chain with streamlined planning, visibility, and improvisation.

Big Data: Chicago-based freight tracking logistics startup Fourkites has tapped predictive analytics to provide predictive capacity management solutions for logistics companies. It can automatically predict the availability of private fleet trucks and match these trucks in accordance with shipping demand. The use of supply chain analytics across industries is increasingly becoming key to improve operational effectiveness by enabling data-driven decisions across levels.

Blockchain

Blockchain provides an open, tamper-proof, distributed record of transactions and, in turn, increases the accuracy and efficiency of supply chain systems. Shanghai-based blockchain developer VeChain launched a food safety solution ' ToolChain' to improve end-to-end transparency in food supply chains. This Blockchain-as-a-Service (BaaS) platform enhances supply chain food traceability amidst the raising food safety concerns following the COVID-19 outbreak.

Digital twins: Digital twins allow the digital representation of a company's actual supply chain, which can be leveraged to streamline and manage the supply chains and business strategies. Germany-based global logistics company DHL created a digital twin warehouse, which receives real-time data from the physical warehouse and continually tracks performance to identify optimal storage solutions.

Robotics: Robots in supply chains play a vital role in a broad range of applications beyond the basic transfer of objects. For instance, Singapore-based designer and manufacturer of warehouse robots, GreyOrange, has introduced a robot sortation system to enable retail, FMCG, and e-commerce companies to manage distribution networks.

Source: GlobalData

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Digital twins: Digital twins allow the digital representation of a company's actual supply chain, which can be leveraged to streamline and manage the supply chains and business strategies. Germany-based global logistics company DHL created a digital twin warehouse, which receives real-time data from the physical warehouse and continually tracks performance to identify optimal storage solutions.

Robotics: Robots in supply chains play a vital role in a broad range of applications beyond the basic transfer of objects. For instance, Singapore-based designer and manufacturer of warehouse robots, GreyOrange, has introduced a robot sortation system to enable retail, FMCG, and e-commerce companies to manage distribution networks.

Source: GlobalData

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Home » Cover Story » Future-ready supply chains

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By Lakshmipriya Nair

On Apr 26, 2021

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The COVID-19 pandemic underscored the need for a radical overhaul in supply chain management, especially in the life sciences sector. Faced with challenges unprecedented in scale and scope, the sector had to reassess its approaches and strategies to contain and mitigate the impact of the pandemic on its global supply chain.

Over a year after the onset of the coronavirus pandemic, as the world starts to plan for recovery, it is time to revisit the lessons learnt about supply chain reliability and risk and take stock of the measures being undertaken by the pharma industry to build supply chain resilience.

Especially so, since it is becoming evident that disruptions are likely to increase in regularity and scale, caused by varying factors including emerging pathogens, geopolitical events, climate changes and public health disasters.

The supply chain of the future will be defined majorly by the following characteristics:

Flexibility and agility

As closed borders, nationwide lockdowns triggered fears of drug shortages on a global scale, highlighting the dangers of over-reliance on few sources of supply, the pharma and healthcare sectors were forced to adapt and innovate to develop local capacity and secure local supply.

The importance of improving operating and supply chain models were also highlighted since increasing volatility across the world demands a supply chain that has the flexibility to tackle spontaneous or sudden challenges or opportunities. At the same, it also has to evolve continuously to stay relevant in an ever-changing landscape.

Thus, a key lesson for supply chain management was the need to create and implement agile strategies which will help in eliciting a rapid and effective response to changing market demands; have the capacity to tailor products and services delivered to customers, the ability to produce and distribute products cost-efficiently, curb manufacturing costs and boost competitiveness.

Interestingly, since the onset of the pandemic, there are also several instances in India's pharma sector wherein companies began to repurpose their capacity to start manufacturing products that are in high demand. For instance, India became one of the key global suppliers of sanitisers, PPE kits and hydroxychloroquine, once touted as a game-changer drug against COVID-19.

As Sudarshan Jain, Secretary-General, Indian Pharmaceutical Alliance reminds, “The COVID-19 pandemic has put the pharma industry on a transformational journey. As a trusted global healthcare partner, India has shown tremendous reliability to ensure a continuous supply of quality medicines, including those essential for the treatment of COVID-19. No drug shortages were reported domestically, and Indian pharma companies were able to meet global demand as well.”

This business agility will be crucial to success but to make such turnarounds easily possible companies should take concrete steps to improve their capacities and capabilities.

As Rishabh Bindlish, MD, India Life Sciences and Global Generics Lead, Accenture advocates, “In crises such as the COVID-19 pandemic combined with macroeconomic and regulatory risks, supply chain planning and execution of operations need to be tightly integrated to drive business value. Building resilience with robust scenario-based planning and execution capability will be vital for business continuity and growth.”

Customer centricity

In the present day, customers have to be at the centre of every business strategy. This is true in the case of supply chain transformations as well. The COVID-19 pandemic has underscored the importance of a responsive and adaptable supply chain for the life sciences sector with different endpoints of delivery and information sharing, to ensure that drugs and daily necessities reach those who need them at the right time. And, this would be possible only by comprehending the changing expectations of customers.

A report from Accenture titled, ‘*A license for growth: customer-centric supply chains*’ informs, Supply chains have traditionally been seen as drivers of efficiencies and scale, providing competitive cost advantage. In recent years, though, the role of supply chains has evolved beyond efficiency to growth.”

It adds, “In the aftermath of COVID-19, we expect customers to continue to demand an experience in which supply chains respond with a higher purpose.”

Bindlish elaborates, “Given the current challenges, customer-centricity of business is no longer an option but a necessity. This becomes even more critical for the supply chain as it plays an important role in connecting customers and the operations team. A customer-centric supply chain is a key to unlocking differentiated service offerings that drive revenue growth, improve EBITDA performance, and meet unique customer needs.”

“A customer-centric supply chain helps pharma companies innovate better by using data as an insight generation engine to design new products and services around the customers’ needs. It enables companies to connect with external parties for real-time, end-to-end visibility and integrated planning and execution. It can further optimize day-to-day operations using analytics, performance monitoring and continuous innovation. This approach enables a service-oriented operating model that leverages a hybrid workforce for improved customer experience. Additionally, it helps configure the supply chain into an asset-light ecosystem that delivers customer experience in unique microsegments,” he adds stating that intelligent, customer-centric supply chains powered by digital can help pharma companies create efficient, resilient, and profitable operating models.

End-to-end visibility

Even before the pandemic, the importance of this aspect was understood and acknowledged. But, the pandemic has reemphasised its criticality to deal with complexities and challenges in supply chain management. It has proven that visibility and transparency across the supply chain are pivotal to decision making, be it for inventory planning, selecting the right partners, deciding the delivery points, or optimal logistical processes. It is important for cost control and customer satisfaction too. Be it inadequate inventory management, communication gaps, or slip-ups and holdups – most of the issues can be traced back to a lack of visibility. Thus, it is essential for all other supply chain functions.

This was one of the key topics under discussion when the world was preparing for the COVID-19 vaccination drive too. Even now, many of the hurdles in this massive endeavour stem from a lack of adequate traceability.

As Ashutosh Mayank and Prajakt Raut-Managing Partners at Supply Chain Labs, Lumis Partners explain, “Pharma and medical equipment supply chain, warehousing and logistics were always a specialised field with specific requirements, including regulatory compliances. However, the distribution and administration of COVID-19 vaccines have complexities of a different level – think of it as the complexity and scale of holding elections across the country. Given that multiple doses of the vaccine are required adds to the additional trace and track of not just the products but the persons receiving it as well.”

Luckily, we are witnessing a lot of activity on this front. As Jain elucidates, “COVID-19 accelerated innovation in the pharma industry. Facilitating remote monitoring to enable operational continuity became an important aspect for a resilient supply chain. Digitisation and data traceability helped in supply chain risk monitoring and management by receiving real-time updates while ensuring the correct conditions for delivery. The pandemic also presented the need for greater collaboration among all part of the supply chain management. This helped in ensuring better efficiency in responsiveness while monitoring developments in real-time.”

Mayank and Raut update, “The changing environment will create a favourable and enabling environment for more innovators to enter the field. Not just in pharma and life sciences, adjacent opportunities to build efficiencies in the entire supply chain – from distributed procurement, manufacturing, warehousing, logistics and reverse logistics – corporations and governments are looking at innovations and technologies to build efficiencies, transparency and visibility in the entire supply chain.”

Startups like StaTwig and its solution, VaccineLedger is a case in point. Siddharth Chakravarthy, CEO, StaTwig informs that VaccineLedger is an open-source blockchain network that has been internationally recognised by UNICEF and Gavi as innovative and critical.

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He also states that pharma and other industries will learn a lot about traceability and security of products in the supply chain through COVID-19 vaccine distribution.

Thus investment, innovation in supply chain solutions and technologies to provide end-to-end traceability will continue to grow.

To cite an example, JB Chowhan, Founder & Chairman, Vardhman Health Specialities informs that the VHS Group has already started investing in digital technologies, platforms, tie-up with manufacturers and with other stakeholders of the pharma supply chain, over the last two years. He further explains that the Group's venture, VHS LogiTech focuses on connecting customers or patients to manufacturers in an end-to-end traceable manner using its patent-pending technologies on IoT and Blockchain to ensure safety, compliance requirements and maintain the integrity of pharma products since this would help to keep the not-of-standard quality and spurious drugs at bay.

Most of the other providers are also making significant investments in improving their traceability and visibility across the supply chain. Changing behavioural patterns of consumers, regulations and policies etc are also fueling this development.

Security

Supply chain processes must be compliant with regulatory requirements and must ensure the safety, efficacy, integrity and quality of the products. Moreover, appropriate security measures to reduce the potential for theft, loss, tampering, etc must also be taken as the market landscape continues to evolve. To enable this, the industry is relying more and more on technology to make this possible. But, this gives rise to data breaches and threats. There are reports that presently, 40 per cent of cyber attacks occur indirectly through the supply chain. In this scenario, security and protection, of both the products and the data collected at various points, is one of the key parameters while creating future-ready supply chains.

As a result, pharma stakeholders need to deploy proactive supply chain security solutions aided by technology such as cloud-based services, location sensors and real-time intelligent monitoring.

Chowhan advises that since the pharma supply chain is complex, sensitive and has a wide impact, measures should be taken at all levels, i.e. pharma manufacturing, storage and distribution. The sector needs to follow GMP standards, assure compliance, enable traceability and yet ensure security from potential risks with the help of best in class technologies.

Data mapping is an example. Rajit Bhattacharya, CEO, Data Sutram, explains, “Data mapping can simplify distribution efforts by optimising resource management. Detailed data of facilities and resources across an area can help in designing an effective model of approach. Regarding the case of the vaccine cold chain, the amalgamation of IoT and geographic information system (GIS) can mean a big deal as they can be instrumental in preventing losses. This is to say that vaccines are fragile products and degrade very quickly, meaning that they should be kept within a prescribed temperature range to preserve their potency.”

Thus, while the industry is already taking strides towards supply chain transformations; security is an area that needs careful planning and strategy. It should also engage with partners and peers to share best practices and new ideas as well as learn from other industries that effectively manage supply chain security.

Prepping for the future

Our stakeholders feel that certain concrete steps taken today can be key to mitigating the risks in our pharma supply chain and making it future-ready. They laud the government’s move to make India’ Aatma Nirbhar in API/KSMs with the help of the measures like bulk drug parks and the PLI scheme. For instance, Jain states, “The Indian pharmaceutical industry needed to secure its supply of APIs and KSMs in the wake of the coronavirus. The Government of India recognised the need to revive the domestic API manufacturing industry and announced an API policy incentivising the domestic production of APIs/KSMs in March 2020. Recently, the government also announced a PLI 2.0 Scheme to further

strengthen the supply chain and become self-reliant. The core focus of creating scale and long-term survivability of the industry was developed through constant engagements between industry stakeholders and the governments.”

The experts also recommend other steps that can be taken to make our supply chains more resilient to disruptions and disasters. Some of them are as follows:

Improve cold chain

Chowhan recommends, “The global pharma supply chain management is expected to grow double fold in the coming years. Therefore the cold chain logistics market must look at innovations and investments to research cold supply chain management in India. Some of these areas would be the setting up of super speciality pharma warehousing and distribution, last-mile connectivity, digital platforms of Internet of Things, blockchain, secured data management, and annual quality audits. In addition, the other focused areas include 24×7 patient service focus, easy payment methods and online ordering facility, NPI (Name patient Import) of research molecules and excellent customer relation management (CRM) with multi-speciality hospitals across India.”

Embrace digital

Bindlish asserts, “A digital supply chain can help pharma companies with scenario modelling to simulate and prepare for supply disruptions or volatile demand opportunities, evaluating their operational and financial impact. Advanced machine learning-based forecasting solutions can help pharma companies take a significant step jump in their forecast accuracy performance, including forecasting for new business, and certain tender opportunities as well.”

He elaborates, “Digital enables real-time tracking of key parameters such as material receipts, plant dispatches including their performance against plan, and in-transit shipments. Improved supply chain responsiveness and agility helps pharma supply chain networks to respond better to external changes, in terms of demand priority or supply of input materials, by integrating planning and scheduling capabilities. With dynamic fulfilment, digital technology can help the logistics management team to centrally manage load planning, dock scheduling and load execution for improved operational efficiency.”

Continuous innovation is key

Jain asserts, “The (pharma) industry needs a robust coordinated and collaborative approach to strengthen the supply chain. On the lines of Good Distribution Practices, the supply chain operating model should support seamless communication across suppliers, manufacturers, distributors, and customers. Innovation plays a key role in ensuring a stable supply chain in such unprecedented and dynamic situations.”

He adds, “Companies need to continuously adapt to the emerging technologies to maintain competitiveness in the global supply chain. With digitisation and the internet of things (IoT), communicating with stakeholders in the supply chain operations will become easier. It will also enable industry players to facilitate supply chain monitoring and get real-time visibility on all operations. Continuous innovation will empower the pharma industry to have more control over the supply operations to ensure smooth and swift supply chain management.”

Sustainability is important too

The Accenture report reveals, “People around the globe are more conscious about the products they are consuming—where they are sourced, how they are made and how they are recycled. They are increasingly looking for companies that share their environmental, ethical and social values. Buying and sourcing ethically, recycling, and reducing environmental footprints have now become an integral part of a company’s brand value. It is not surprising, then, that the masters in our survey have identified creating sustainable supply chains as their top priority.”

One such example from India could be Laxai Life Sciences, a company involved in drug discovery, CDMO services, API development, API manufacturing and formulation development. It is investing in environmentally conscious technologies like AI-powered drug discovery, green chemistry and continuous flow chemistry.

Ram Upadhayaya, CEO of Laxai Life Sciences informs that his company, recognizing the need for easily available sources of raw material to produce sustainable products opted for backward integration as a strategy to control and de-risk their supply chain.

New strategies for new realities

'Let chaos reign, then rein in chaos.' This is a quote by Andrew Grove, the erstwhile CEO of Intel. He believed that a certain amount of chaos spurred people to think outside of their normal patterns, experiment and innovate. The coronavirus pandemic has proved this true. As chaos reigned and the world was catapulted to a state of disarray, governments, societies, organisations were forced to redraw their approaches to survive and thrive. We are witnessing the rise of new solutions, strategies, visions that are transforming the life sciences supply chain, a metamorphosis that is more suited to the new realities.

Leveraging digital technologies in supply chain

GlobalData's Disruptor Database reveals companies across industries are leveraging digital technologies in the supply chain to create new disruptive product offerings, services and business models. These examples can help the pharma industry to leverage the power and potential of these technologies too

AI: Leveraging AI, companies can optimise supply and demand gap, automate decision making, channel warehouse requisites, identify target consumers, and bring greater visibility on order-to-delivery supply time. For instance, Arizona's DigiTech company Blue Yonder launched an AI-powered end-to-end digital fulfilment platform 'Luminate Planning Portfolio' for manufacturers and retailers. The automated supply chain solution allows companies to fully manage their supply chain with streamlined planning, visibility, and improvisation.

Big Data: Chicago-based freight tracking logistics startup Fourkites has tapped predictive analytics to provide predictive capacity management solutions for logistics companies. It can automatically predict the availability of private fleet trucks and match these trucks in accordance with shipping demand. The use of supply chain analytics across industries is increasingly becoming key to improve operational effectiveness by enabling data-driven decisions across levels.

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Home » Cover Story » Future-ready supply chains

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AI: Leveraging AI, companies can optimise supply and demand gap, automate decision making, channel warehouse requisites, identify target consumers, and bring greater visibility on order-to-delivery supply time. For instance, Arizona's DigiTech company Blue Yonder launched an AI-powered end-to-end digital fulfilment platform 'Luminate Planning Portfolio' for manufacturers and retailers. The automated supply chain solution allows companies to fully manage their supply chain with streamlined planning, visibility, and improvisation.

Big Data: Chicago-based freight tracking logistics startup Fourkites has tapped predictive analytics to provide predictive capacity management solutions for logistics companies. It can automatically predict the availability of private fleet trucks and match these trucks in accordance with shipping demand. The use of supply chain analytics across industries is increasingly becoming key to improve operational effectiveness by enabling data-driven decisions across levels.

Blockchain

Blockchain provides an open, tamper-proof, distributed record of transactions and, in turn, increases the accuracy and efficiency of supply chain systems. Shanghai-based blockchain developer VeChain launched a food safety solution ' ToolChain' to improve end-to-end transparency in food supply chains. This Blockchain-as-a-Service (BaaS) platform enhances supply chain food traceability amidst the raising food safety concerns following the COVID-19 outbreak.

Digital twins: Digital twins allow the digital representation of a company's actual supply chain, which can be leveraged to streamline and manage the supply chains and business strategies. Germany-based global logistics company DHL created a digital twin warehouse, which receives real-time data from the physical warehouse and continually tracks performance to identify optimal storage solutions.

Robotics: Robots in supply chains play a vital role in a broad range of applications beyond the basic transfer of objects. For instance, Singapore-based designer and manufacturer of warehouse robots, GreyOrange, has introduced a robot sortation system to enable retail, FMCG, and e-commerce companies to manage distribution networks.

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Home » Cover Story » Future-ready supply chains

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By Lakshmipriya Nair

On Apr 26, 2021

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The COVID-19 pandemic underscored the need for a radical overhaul in supply chain management, especially in the life sciences sector. Faced with challenges unprecedented in scale and scope, the sector had to reassess its approaches and strategies to contain and mitigate the impact of the pandemic on its global supply chain.

Over a year after the onset of the coronavirus pandemic, as the world starts to plan for recovery, it is time to revisit the lessons learnt about supply chain reliability and risk and take stock of the measures being undertaken by the pharma industry to build supply chain resilience.

Especially so, since it is becoming evident that disruptions are likely to increase in regularity and scale, caused by varying factors including emerging pathogens, geopolitical events, climate changes and public health disasters.

The supply chain of the future will be defined majorly by the following characteristics:

Flexibility and agility

As closed borders, nationwide lockdowns triggered fears of drug shortages on a global scale, highlighting the dangers of over-reliance on few sources of supply, the pharma and healthcare sectors were forced to adapt and innovate to develop local capacity and secure local supply.

The importance of improving operating and supply chain models were also highlighted since increasing volatility across the world demands a supply chain that has the flexibility to tackle spontaneous or sudden challenges or opportunities. At the same, it also has to evolve continuously to stay relevant in an ever-changing landscape.

Thus, a key lesson for supply chain management was the need to create and implement agile strategies which will help in eliciting a rapid and effective response to changing market demands; have the capacity to tailor products and services delivered to customers, the ability to produce and distribute products cost-efficiently, curb manufacturing costs and boost competitiveness.

Interestingly, since the onset of the pandemic, there are also several instances in India's pharma sector wherein companies began to repurpose their capacity to start manufacturing products that are in high demand. For instance, India became one of the key global suppliers of sanitisers, PPE kits and hydroxychloroquine, once touted as a game-changer drug against COVID-19.

As Sudarshan Jain, Secretary-General, Indian Pharmaceutical Alliance reminds, “The COVID-19 pandemic has put the pharma industry on a transformational journey. As a trusted global healthcare partner, India has shown tremendous reliability to ensure a continuous supply of quality medicines, including those essential for the treatment of COVID-19. No drug shortages were reported domestically, and Indian pharma companies were able to meet global demand as well.”

This business agility will be crucial to success but to make such turnarounds easily possible companies should take concrete steps to improve their capacities and capabilities.

As Rishabh Bindlish, MD, India Life Sciences and Global Generics Lead, Accenture advocates, “In crises such as the COVID-19 pandemic combined with macroeconomic and regulatory risks, supply chain planning and execution of operations need to be tightly integrated to drive business value. Building resilience with robust scenario-based planning and execution capability will be vital for business continuity and growth.”

Customer centricity

In the present day, customers have to be at the centre of every business strategy. This is true in the case of supply chain transformations as well. The COVID-19 pandemic has underscored the importance of a responsive and adaptable supply chain for the life sciences sector with different endpoints of delivery and information sharing, to ensure that drugs and daily necessities reach those who need them at the right time. And, this would be possible only by comprehending the changing expectations of customers.

A report from Accenture titled, ‘*A license for growth: customer-centric supply chains*’ informs, Supply chains have traditionally been seen as drivers of efficiencies and scale, providing competitive cost advantage. In recent years, though, the role of supply chains has evolved beyond efficiency to growth.”

It adds, “In the aftermath of COVID-19, we expect customers to continue to demand an experience in which supply chains respond with a higher purpose.”

Bindlish elaborates, “Given the current challenges, customer-centricity of business is no longer an option but a necessity. This becomes even more critical for the supply chain as it plays an important role in connecting customers and the operations team. A customer-centric supply chain is a key to unlocking differentiated service offerings that drive revenue growth, improve EBITDA performance, and meet unique customer needs.”

“A customer-centric supply chain helps pharma companies innovate better by using data as an insight generation engine to design new products and services around the customers’ needs. It enables companies to connect with external parties for real-time, end-to-end visibility and integrated planning and execution. It can further optimize day-to-day operations using analytics, performance monitoring and continuous innovation. This approach enables a service-oriented operating model that leverages a hybrid workforce for improved customer experience. Additionally, it helps configure the supply chain into an asset-light ecosystem that delivers customer experience in unique microsegments,” he adds stating that intelligent, customer-centric supply chains powered by digital can help pharma companies create efficient, resilient, and profitable operating models.

End-to-end visibility

Even before the pandemic, the importance of this aspect was understood and acknowledged. But, the pandemic has reemphasised its criticality to deal with complexities and challenges in supply chain management. It has proven that visibility and transparency across the supply chain are pivotal to decision making, be it for inventory planning, selecting the right partners, deciding the delivery points, or optimal logistical processes. It is important for cost control and customer satisfaction too. Be it inadequate inventory management, communication gaps, or slip-ups and holdups – most of the issues can be traced back to a lack of visibility. Thus, it is essential for all other supply chain functions.

This was one of the key topics under discussion when the world was preparing for the COVID-19 vaccination drive too. Even now, many of the hurdles in this massive endeavour stem from a lack of adequate traceability.

As Ashutosh Mayank and Prajakt Raut-Managing Partners at Supply Chain Labs, Lumis Partners explain, “Pharma and medical equipment supply chain, warehousing and logistics were always a specialised field with specific requirements, including regulatory compliances. However, the distribution and administration of COVID-19 vaccines have complexities of a different level – think of it as the complexity and scale of holding elections across the country. Given that multiple doses of the vaccine are required adds to the additional trace and track of not just the products but the persons receiving it as well.”

Luckily, we are witnessing a lot of activity on this front. As Jain elucidates, “COVID-19 accelerated innovation in the pharma industry. Facilitating remote monitoring to enable operational continuity became an important aspect for a resilient supply chain. Digitisation and data traceability helped in supply chain risk monitoring and management by receiving real-time updates while ensuring the correct conditions for delivery. The pandemic also presented the need for greater collaboration among all part of the supply chain management. This helped in ensuring better efficiency in responsiveness while monitoring developments in real-time.”

Mayank and Raut update, “The changing environment will create a favourable and enabling environment for more innovators to enter the field. Not just in pharma and life sciences, adjacent opportunities to build efficiencies in the entire supply chain – from distributed procurement, manufacturing, warehousing, logistics and reverse logistics – corporations and governments are looking at innovations and technologies to build efficiencies, transparency and visibility in the entire supply chain.”

Startups like StaTwig and its solution, VaccineLedger is a case in point. Siddharth Chakravarthy, CEO, StaTwig informs that VaccineLedger is an open-source blockchain network that has been internationally recognised by UNICEF and Gavi as innovative and critical.

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He also states that pharma and other industries will learn a lot about traceability and security of products in the supply chain through COVID-19 vaccine distribution.

Thus investment, innovation in supply chain solutions and technologies to provide end-to-end traceability will continue to grow.

To cite an example, JB Chowhan, Founder & Chairman, Vardhman Health Specialities informs that the VHS Group has already started investing in digital technologies, platforms, tie-up with manufacturers and with other stakeholders of the pharma supply chain, over the last two years. He further explains that the Group's venture, VHS LogiTech focuses on connecting customers or patients to manufacturers in an end-to-end traceable manner using its patent-pending technologies on IoT and Blockchain to ensure safety, compliance requirements and maintain the integrity of pharma products since this would help to keep the not-of-standard quality and spurious drugs at bay.

Most of the other providers are also making significant investments in improving their traceability and visibility across the supply chain. Changing behavioural patterns of consumers, regulations and policies etc are also fueling this development.

Security

Supply chain processes must be compliant with regulatory requirements and must ensure the safety, efficacy, integrity and quality of the products. Moreover, appropriate security measures to reduce the potential for theft, loss, tampering, etc must also be taken as the market landscape continues to evolve. To enable this, the industry is relying more and more on technology to make this possible. But, this gives rise to data breaches and threats. There are reports that presently, 40 per cent of cyber attacks occur indirectly through the supply chain. In this scenario, security and protection, of both the products and the data collected at various points, is one of the key parameters while creating future-ready supply chains.

As a result, pharma stakeholders need to deploy proactive supply chain security solutions aided by technology such as cloud-based services, location sensors and real-time intelligent monitoring.

Chowhan advises that since the pharma supply chain is complex, sensitive and has a wide impact, measures should be taken at all levels, i.e. pharma manufacturing, storage and distribution. The sector needs to follow GMP standards, assure compliance, enable traceability and yet ensure security from potential risks with the help of best in class technologies.

Data mapping is an example. Rajit Bhattacharya, CEO, Data Sutram, explains, “Data mapping can simplify distribution efforts by optimising resource management. Detailed data of facilities and resources across an area can help in designing an effective model of approach. Regarding the case of the vaccine cold chain, the amalgamation of IoT and geographic information system (GIS) can mean a big deal as they can be instrumental in preventing losses. This is to say that vaccines are fragile products and degrade very quickly, meaning that they should be kept within a prescribed temperature range to preserve their potency.”

Thus, while the industry is already taking strides towards supply chain transformations; security is an area that needs careful planning and strategy. It should also engage with partners and peers to share best practices and new ideas as well as learn from other industries that effectively manage supply chain security.

Prepping for the future

Our stakeholders feel that certain concrete steps taken today can be key to mitigating the risks in our pharma supply chain and making it future-ready. They laud the government’s move to make India’ Aatma Nirbhar in API/KSMs with the help of the measures like bulk drug parks and the PLI scheme. For instance, Jain states, “The Indian pharmaceutical industry needed to secure its supply of APIs and KSMs in the wake of the coronavirus. The Government of India recognised the need to revive the domestic API manufacturing industry and announced an API policy incentivising the domestic production of APIs/KSMs in March 2020. Recently, the government also announced a PLI 2.0 Scheme to further

strengthen the supply chain and become self-reliant. The core focus of creating scale and long-term survivability of the industry was developed through constant engagements between industry stakeholders and the governments.”

The experts also recommend other steps that can be taken to make our supply chains more resilient to disruptions and disasters. Some of them are as follows:

Improve cold chain

Chowhan recommends, “The global pharma supply chain management is expected to grow double fold in the coming years. Therefore the cold chain logistics market must look at innovations and investments to research cold supply chain management in India. Some of these areas would be the setting up of super speciality pharma warehousing and distribution, last-mile connectivity, digital platforms of Internet of Things, blockchain, secured data management, and annual quality audits. In addition, the other focused areas include 24×7 patient service focus, easy payment methods and online ordering facility, NPI (Name patient Import) of research molecules and excellent customer relation management (CRM) with multi-speciality hospitals across India.”

Embrace digital

Bindlish asserts, “A digital supply chain can help pharma companies with scenario modelling to simulate and prepare for supply disruptions or volatile demand opportunities, evaluating their operational and financial impact. Advanced machine learning-based forecasting solutions can help pharma companies take a significant step jump in their forecast accuracy performance, including forecasting for new business, and certain tender opportunities as well.”

He elaborates, “Digital enables real-time tracking of key parameters such as material receipts, plant dispatches including their performance against plan, and in-transit shipments. Improved supply chain responsiveness and agility helps pharma supply chain networks to respond better to external changes, in terms of demand priority or supply of input materials, by integrating planning and scheduling capabilities. With dynamic fulfilment, digital technology can help the logistics management team to centrally manage load planning, dock scheduling and load execution for improved operational efficiency.”

Continuous innovation is key

Jain asserts, “The (pharma) industry needs a robust coordinated and collaborative approach to strengthen the supply chain. On the lines of Good Distribution Practices, the supply chain operating model should support seamless communication across suppliers, manufacturers, distributors, and customers. Innovation plays a key role in ensuring a stable supply chain in such unprecedented and dynamic situations.”

He adds, “Companies need to continuously adapt to the emerging technologies to maintain competitiveness in the global supply chain. With digitisation and the internet of things (IoT), communicating with stakeholders in the supply chain operations will become easier. It will also enable industry players to facilitate supply chain monitoring and get real-time visibility on all operations. Continuous innovation will empower the pharma industry to have more control over the supply operations to ensure smooth and swift supply chain management.”

Sustainability is important too

The Accenture report reveals, “People around the globe are more conscious about the products they are consuming—where they are sourced, how they are made and how they are recycled. They are increasingly looking for companies that share their environmental, ethical and social values. Buying and sourcing ethically, recycling, and reducing environmental footprints have now become an integral part of a company’s brand value. It is not surprising, then, that the masters in our survey have identified creating sustainable supply chains as their top priority.”

One such example from India could be Laxai Life Sciences, a company involved in drug discovery, CDMO services, API development, API manufacturing and formulation development. It is investing in environmentally conscious technologies like AI-powered drug discovery, green chemistry and continuous flow chemistry.

Ram Upadhayaya, CEO of Laxai Life Sciences informs that his company, recognizing the need for easily available sources of raw material to produce sustainable products opted for backward integration as a strategy to control and de-risk their supply chain.

New strategies for new realities

'Let chaos reign, then rein in chaos.' This is a quote by Andrew Grove, the erstwhile CEO of Intel. He believed that a certain amount of chaos spurred people to think outside of their normal patterns, experiment and innovate. The coronavirus pandemic has proved this true. As chaos reigned and the world was catapulted to a state of disarray, governments, societies, organisations were forced to redraw their approaches to survive and thrive. We are witnessing the rise of new solutions, strategies, visions that are transforming the life sciences supply chain, a metamorphosis that is more suited to the new realities.

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Home » Cover Story » Future-ready supply chains

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Ram Upadhayaya, CEO of Laxai Life Sciences informs that his company, recognizing the need for easily available sources of raw material to produce sustainable products opted for backward integration as a strategy to control and de-risk their supply chain.

New strategies for new realities

'Let chaos reign, then rein in chaos.' This is a quote by Andrew Grove, the erstwhile CEO of Intel. He believed that a certain amount of chaos spurred people to think outside of their normal patterns, experiment and innovate. The coronavirus pandemic has proved this true. As chaos reigned and the world was catapulted to a state of disarray, governments, societies, organisations were forced to redraw their approaches to survive and thrive. We are witnessing the rise of new solutions, strategies, visions that are transforming the life sciences supply chain, a metamorphosis that is more suited to the new realities.

Leveraging digital technologies in supply chain

GlobalData's Disruptor Database reveals companies across industries are leveraging digital technologies in the supply chain to create new disruptive product offerings, services and business models. These examples can help the pharma industry to leverage the power and potential of these technologies too

AI: Leveraging AI, companies can optimise supply and demand gap, automate decision making, channel warehouse requisites, identify target consumers, and bring greater visibility on order-to-delivery supply time. For instance, Arizona's DigiTech company Blue Yonder launched an AI-powered end-to-end digital fulfilment platform 'Luminate Planning Portfolio' for manufacturers and retailers. The automated supply chain solution allows companies to fully manage their supply chain with streamlined planning, visibility, and improvisation.

Big Data: Chicago-based freight tracking logistics startup Fourkites has tapped predictive analytics to provide predictive capacity management solutions for logistics companies. It can automatically predict the availability of private fleet trucks and match these trucks in accordance with shipping demand. The use of supply chain analytics across industries is increasingly becoming key to improve operational effectiveness by enabling data-driven decisions across levels.

Blockchain

Blockchain provides an open, tamper-proof, distributed record of transactions and, in turn, increases the accuracy and efficiency of supply chain systems. Shanghai-based blockchain developer VeChain launched a food safety solution ' ToolChain' to improve end-to-end transparency in food supply chains. This Blockchain-as-a-Service (BaaS) platform enhances supply chain food traceability amidst the raising food safety concerns following the COVID-19 outbreak.

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Home » Cover Story » Future-ready supply chains

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The COVID-19 pandemic underscored the need for a radical overhaul in supply chain management, especially in the life sciences sector. Faced with challenges unprecedented in scale and scope, the sector had to reassess its approaches and strategies to contain and mitigate the impact of the pandemic on its global supply chain.

Over a year after the onset of the coronavirus pandemic, as the world starts to plan for recovery, it is time to revisit the lessons learnt about supply chain reliability and risk and take stock of the measures being undertaken by the pharma industry to build supply chain resilience.

Especially so, since it is becoming evident that disruptions are likely to increase in regularity and scale, caused by varying factors including emerging pathogens, geopolitical events, climate changes and public health disasters.

The supply chain of the future will be defined majorly by the following characteristics:

Flexibility and agility

As closed borders, nationwide lockdowns triggered fears of drug shortages on a global scale, highlighting the dangers of over-reliance on few sources of supply, the pharma and healthcare sectors were forced to adapt and innovate to develop local capacity and secure local supply.

The importance of improving operating and supply chain models were also highlighted since increasing volatility across the world demands a supply chain that has the flexibility to tackle spontaneous or sudden challenges or opportunities. At the same, it also has to evolve continuously to stay relevant in an ever-changing landscape.

Thus, a key lesson for supply chain management was the need to create and implement agile strategies which will help in eliciting a rapid and effective response to changing market demands; have the capacity to tailor products and services delivered to customers, the ability to produce and distribute products cost-efficiently, curb manufacturing costs and boost competitiveness.

Interestingly, since the onset of the pandemic, there are also several instances in India's pharma sector wherein companies began to repurpose their capacity to start manufacturing products that are in high demand. For instance, India became one of the key global suppliers of sanitisers, PPE kits and hydroxychloroquine, once touted as a game-changer drug against COVID-19.

As Sudarshan Jain, Secretary-General, Indian Pharmaceutical Alliance reminds, “The COVID-19 pandemic has put the pharma industry on a transformational journey. As a trusted global healthcare partner, India has shown tremendous reliability to ensure a continuous supply of quality medicines, including those essential for the treatment of COVID-19. No drug shortages were reported domestically, and Indian pharma companies were able to meet global demand as well.”

This business agility will be crucial to success but to make such turnarounds easily possible companies should take concrete steps to improve their capacities and capabilities.

As Rishabh Bindlish, MD, India Life Sciences and Global Generics Lead, Accenture advocates, “In crises such as the COVID-19 pandemic combined with macroeconomic and regulatory risks, supply chain planning and execution of operations need to be tightly integrated to drive business value. Building resilience with robust scenario-based planning and execution capability will be vital for business continuity and growth.”

Customer centricity

In the present day, customers have to be at the centre of every business strategy. This is true in the case of supply chain transformations as well. The COVID-19 pandemic has underscored the importance of a responsive and adaptable supply chain for the life sciences sector with different endpoints of delivery and information sharing, to ensure that drugs and daily necessities reach those who need them at the right time. And, this would be possible only by comprehending the changing expectations of customers.

A report from Accenture titled, ‘*A license for growth: customer-centric supply chains*’ informs, Supply chains have traditionally been seen as drivers of efficiencies and scale, providing competitive cost advantage. In recent years, though, the role of supply chains has evolved beyond efficiency to growth.”

It adds, “In the aftermath of COVID-19, we expect customers to continue to demand an experience in which supply chains respond with a higher purpose.”

Bindlish elaborates, “Given the current challenges, customer-centricity of business is no longer an option but a necessity. This becomes even more critical for the supply chain as it plays an important role in connecting customers and the operations team. A customer-centric supply chain is a key to unlocking differentiated service offerings that drive revenue growth, improve EBITDA performance, and meet unique customer needs.”

“A customer-centric supply chain helps pharma companies innovate better by using data as an insight generation engine to design new products and services around the customers’ needs. It enables companies to connect with external parties for real-time, end-to-end visibility and integrated planning and execution. It can further optimize day-to-day operations using analytics, performance monitoring and continuous innovation. This approach enables a service-oriented operating model that leverages a hybrid workforce for improved customer experience. Additionally, it helps configure the supply chain into an asset-light ecosystem that delivers customer experience in unique microsegments,” he adds stating that intelligent, customer-centric supply chains powered by digital can help pharma companies create efficient, resilient, and profitable operating models.

End-to-end visibility

Even before the pandemic, the importance of this aspect was understood and acknowledged. But, the pandemic has reemphasised its criticality to deal with complexities and challenges in supply chain management. It has proven that visibility and transparency across the supply chain are pivotal to decision making, be it for inventory planning, selecting the right partners, deciding the delivery points, or optimal logistical processes. It is important for cost control and customer satisfaction too. Be it inadequate inventory management, communication gaps, or slip-ups and holdups – most of the issues can be traced back to a lack of visibility. Thus, it is essential for all other supply chain functions.

This was one of the key topics under discussion when the world was preparing for the COVID-19 vaccination drive too. Even now, many of the hurdles in this massive endeavour stem from a lack of adequate traceability.

As Ashutosh Mayank and Prajakt Raut-Managing Partners at Supply Chain Labs, Lumis Partners explain, “Pharma and medical equipment supply chain, warehousing and logistics were always a specialised field with specific requirements, including regulatory compliances. However, the distribution and administration of COVID-19 vaccines have complexities of a different level – think of it as the complexity and scale of holding elections across the country. Given that multiple doses of the vaccine are required adds to the additional trace and track of not just the products but the persons receiving it as well.”

Luckily, we are witnessing a lot of activity on this front. As Jain elucidates, “COVID-19 accelerated innovation in the pharma industry. Facilitating remote monitoring to enable operational continuity became an important aspect for a resilient supply chain. Digitisation and data traceability helped in supply chain risk monitoring and management by receiving real-time updates while ensuring the correct conditions for delivery. The pandemic also presented the need for greater collaboration among all part of the supply chain management. This helped in ensuring better efficiency in responsiveness while monitoring developments in real-time.”

Mayank and Raut update, “The changing environment will create a favourable and enabling environment for more innovators to enter the field. Not just in pharma and life sciences, adjacent opportunities to build efficiencies in the entire supply chain – from distributed procurement, manufacturing, warehousing, logistics and reverse logistics – corporations and governments are looking at innovations and technologies to build efficiencies, transparency and visibility in the entire supply chain.”

Startups like StaTwig and its solution, VaccineLedger is a case in point. Siddharth Chakravarthy, CEO, StaTwig informs that VaccineLedger is an open-source blockchain network that has been internationally recognised by UNICEF and Gavi as innovative and critical.

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He also states that pharma and other industries will learn a lot about traceability and security of products in the supply chain through COVID-19 vaccine distribution.

Thus investment, innovation in supply chain solutions and technologies to provide end-to-end traceability will continue to grow.

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Most of the other providers are also making significant investments in improving their traceability and visibility across the supply chain. Changing behavioural patterns of consumers, regulations and policies etc are also fueling this development.

Security

Supply chain processes must be compliant with regulatory requirements and must ensure the safety, efficacy, integrity and quality of the products. Moreover, appropriate security measures to reduce the potential for theft, loss, tampering, etc must also be taken as the market landscape continues to evolve. To enable this, the industry is relying more and more on technology to make this possible. But, this gives rise to data breaches and threats. There are reports that presently, 40 per cent of cyber attacks occur indirectly through the supply chain. In this scenario, security and protection, of both the products and the data collected at various points, is one of the key parameters while creating future-ready supply chains.

As a result, pharma stakeholders need to deploy proactive supply chain security solutions aided by technology such as cloud-based services, location sensors and real-time intelligent monitoring.

Chowhan advises that since the pharma supply chain is complex, sensitive and has a wide impact, measures should be taken at all levels, i.e. pharma manufacturing, storage and distribution. The sector needs to follow GMP standards, assure compliance, enable traceability and yet ensure security from potential risks with the help of best in class technologies.

Data mapping is an example. Rajit Bhattacharya, CEO, Data Sutram, explains, “Data mapping can simplify distribution efforts by optimising resource management. Detailed data of facilities and resources across an area can help in designing an effective model of approach. Regarding the case of the vaccine cold chain, the amalgamation of IoT and geographic information system (GIS) can mean a big deal as they can be instrumental in preventing losses. This is to say that vaccines are fragile products and degrade very quickly, meaning that they should be kept within a prescribed temperature range to preserve their potency.”

Thus, while the industry is already taking strides towards supply chain transformations; security is an area that needs careful planning and strategy. It should also engage with partners and peers to share best practices and new ideas as well as learn from other industries that effectively manage supply chain security.

Prepping for the future

Our stakeholders feel that certain concrete steps taken today can be key to mitigating the risks in our pharma supply chain and making it future-ready. They laud the government’s move to make India’ Aatma Nirbhar in API/KSMs with the help of the measures like bulk drug parks and the PLI scheme. For instance, Jain states, “The Indian pharmaceutical industry needed to secure its supply of APIs and KSMs in the wake of the coronavirus. The Government of India recognised the need to revive the domestic API manufacturing industry and announced an API policy incentivising the domestic production of APIs/KSMs in March 2020. Recently, the government also announced a PLI 2.0 Scheme to further

strengthen the supply chain and become self-reliant. The core focus of creating scale and long-term survivability of the industry was developed through constant engagements between industry stakeholders and the governments.”

The experts also recommend other steps that can be taken to make our supply chains more resilient to disruptions and disasters. Some of them are as follows:

Improve cold chain

Chowhan recommends, “The global pharma supply chain management is expected to grow double fold in the coming years. Therefore the cold chain logistics market must look at innovations and investments to research cold supply chain management in India. Some of these areas would be the setting up of super speciality pharma warehousing and distribution, last-mile connectivity, digital platforms of Internet of Things, blockchain, secured data management, and annual quality audits. In addition, the other focused areas include 24×7 patient service focus, easy payment methods and online ordering facility, NPI (Name patient Import) of research molecules and excellent customer relation management (CRM) with multi-speciality hospitals across India.”

Embrace digital

Bindlish asserts, “A digital supply chain can help pharma companies with scenario modelling to simulate and prepare for supply disruptions or volatile demand opportunities, evaluating their operational and financial impact. Advanced machine learning-based forecasting solutions can help pharma companies take a significant step jump in their forecast accuracy performance, including forecasting for new business, and certain tender opportunities as well.”

He elaborates, “Digital enables real-time tracking of key parameters such as material receipts, plant dispatches including their performance against plan, and in-transit shipments. Improved supply chain responsiveness and agility helps pharma supply chain networks to respond better to external changes, in terms of demand priority or supply of input materials, by integrating planning and scheduling capabilities. With dynamic fulfilment, digital technology can help the logistics management team to centrally manage load planning, dock scheduling and load execution for improved operational efficiency.”

Continuous innovation is key

Jain asserts, “The (pharma) industry needs a robust coordinated and collaborative approach to strengthen the supply chain. On the lines of Good Distribution Practices, the supply chain operating model should support seamless communication across suppliers, manufacturers, distributors, and customers. Innovation plays a key role in ensuring a stable supply chain in such unprecedented and dynamic situations.”

He adds, “Companies need to continuously adapt to the emerging technologies to maintain competitiveness in the global supply chain. With digitisation and the internet of things (IoT), communicating with stakeholders in the supply chain operations will become easier. It will also enable industry players to facilitate supply chain monitoring and get real-time visibility on all operations. Continuous innovation will empower the pharma industry to have more control over the supply operations to ensure smooth and swift supply chain management.”

Sustainability is important too

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Home » Cover Story » Future-ready supply chains

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Jain asserts, “The (pharma) industry needs a robust coordinated and collaborative approach to strengthen the supply chain. On the lines of Good Distribution Practices, the supply chain operating model should support seamless communication across suppliers, manufacturers, distributors, and customers. Innovation plays a key role in ensuring a stable supply chain in such unprecedented and dynamic situations.”

He adds, “Companies need to continuously adapt to the emerging technologies to maintain competitiveness in the global supply chain. With digitisation and the internet of things (IoT), communicating with stakeholders in the supply chain operations will become easier. It will also enable industry players to facilitate supply chain monitoring and get real-time visibility on all operations. Continuous innovation will empower the pharma industry to have more control over the supply operations to ensure smooth and swift supply chain management.”

Sustainability is important too

The Accenture report reveals, “People around the globe are more conscious about the products they are consuming—where they are sourced, how they are made and how they are recycled. They are increasingly looking for companies that share their environmental, ethical and social values. Buying and sourcing ethically, recycling, and reducing environmental footprints have now become an integral part of a company’s brand value. It is not surprising, then, that the masters in our survey have identified creating sustainable supply chains as their top priority.”

One such example from India could be Laxai Life Sciences, a company involved in drug discovery, CDMO services, API development, API manufacturing and formulation development. It is investing in environmentally conscious technologies like AI-powered drug discovery, green chemistry and continuous flow chemistry.

Ram Upadhyaya, CEO of Laxai Life Sciences informs that his company, recognizing the need for easily available sources of raw material to produce sustainable products opted for backward integration as a strategy to control and de-risk their supply chain.

New strategies for new realities

'Let chaos reign, then rein in chaos.' This is a quote by Andrew Grove, the erstwhile CEO of Intel. He believed that a certain amount of chaos spurred people to think outside of their normal patterns, experiment and innovate. The coronavirus pandemic has proved this true. As chaos reigned and the world was catapulted to a state of disarray, governments, societies, organisations were forced to redraw their approaches to survive and thrive. We are witnessing the rise of new solutions, strategies, visions that are transforming the life sciences supply chain, a metamorphosis that is more suited to the new realities.

Leveraging digital technologies in supply chain

GlobalData's Disruptor Database reveals companies across industries are leveraging digital technologies in the supply chain to create new disruptive product offerings, services and business models. These examples can help the pharma industry to leverage the power and potential of these technologies too

AI: Leveraging AI, companies can optimise supply and demand gap, automate decision making, channel warehouse requisites, identify target consumers, and bring greater visibility on order-to-delivery supply time. For instance, Arizona's DigiTech company Blue Yonder launched an AI-powered end-to-end digital fulfilment platform 'Luminate Planning Portfolio' for manufacturers and retailers. The automated supply chain solution allows companies to fully manage their supply chain with streamlined planning, visibility, and improvisation.

Big Data: Chicago-based freight tracking logistics startup Fourkites has tapped predictive analytics to provide predictive capacity management solutions for logistics companies. It can automatically predict the availability of private fleet trucks and match these trucks in accordance with shipping demand. The use of supply chain analytics across industries is increasingly becoming key to improve operational effectiveness by enabling data-driven decisions across levels.

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Blockchain provides an open, tamper-proof, distributed record of transactions and, in turn, increases the accuracy and efficiency of supply chain systems. Shanghai-based blockchain developer VeChain launched a food safety solution ' ToolChain' to improve end-to-end transparency in food supply chains. This Blockchain-as-a-Service (BaaS) platform enhances supply chain food traceability amidst the raising food safety concerns following the COVID-19 outbreak.

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Home » Cover Story » Future-ready supply chains

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By Lakshmipriya Nair

On Apr 26, 2021

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The COVID-19 pandemic underscored the need for a radical overhaul in supply chain management, especially in the life sciences sector. Faced with challenges unprecedented in scale and scope, the sector had to reassess its approaches and strategies to contain and mitigate the impact of the pandemic on its global supply chain.

Over a year after the onset of the coronavirus pandemic, as the world starts to plan for recovery, it is time to revisit the lessons learnt about supply chain reliability and risk and take stock of the measures being undertaken by the pharma industry to build supply chain resilience.

Especially so, since it is becoming evident that disruptions are likely to increase in regularity and scale, caused by varying factors including emerging pathogens, geopolitical events, climate changes and public health disasters.

The supply chain of the future will be defined majorly by the following characteristics:

Flexibility and agility

As closed borders, nationwide lockdowns triggered fears of drug shortages on a global scale, highlighting the dangers of over-reliance on few sources of supply, the pharma and healthcare sectors were forced to adapt and innovate to develop local capacity and secure local supply.

The importance of improving operating and supply chain models were also highlighted since increasing volatility across the world demands a supply chain that has the flexibility to tackle spontaneous or sudden challenges or opportunities. At the same, it also has to evolve continuously to stay relevant in an ever-changing landscape.

Thus, a key lesson for supply chain management was the need to create and implement agile strategies which will help in eliciting a rapid and effective response to changing market demands; have the capacity to tailor products and services delivered to customers, the ability to produce and distribute products cost-efficiently, curb manufacturing costs and boost competitiveness.

Interestingly, since the onset of the pandemic, there are also several instances in India's pharma sector wherein companies began to repurpose their capacity to start manufacturing products that are in high demand. For instance, India became one of the key global suppliers of sanitisers, PPE kits and hydroxychloroquine, once touted as a game-changer drug against COVID-19.

As Sudarshan Jain, Secretary-General, Indian Pharmaceutical Alliance reminds, “The COVID-19 pandemic has put the pharma industry on a transformational journey. As a trusted global healthcare partner, India has shown tremendous reliability to ensure a continuous supply of quality medicines, including those essential for the treatment of COVID-19. No drug shortages were reported domestically, and Indian pharma companies were able to meet global demand as well.”

This business agility will be crucial to success but to make such turnarounds easily possible companies should take concrete steps to improve their capacities and capabilities.

As Rishabh Bindlish, MD, India Life Sciences and Global Generics Lead, Accenture advocates, “In crises such as the COVID-19 pandemic combined with macroeconomic and regulatory risks, supply chain planning and execution of operations need to be tightly integrated to drive business value. Building resilience with robust scenario-based planning and execution capability will be vital for business continuity and growth.”

Customer centricity

In the present day, customers have to be at the centre of every business strategy. This is true in the case of supply chain transformations as well. The COVID-19 pandemic has underscored the importance of a responsive and adaptable supply chain for the life sciences sector with different endpoints of delivery and information sharing, to ensure that drugs and daily necessities reach those who need them at the right time. And, this would be possible only by comprehending the changing expectations of customers.

A report from Accenture titled, ‘*A license for growth: customer-centric supply chains*’ informs, Supply chains have traditionally been seen as drivers of efficiencies and scale, providing competitive cost advantage. In recent years, though, the role of supply chains has evolved beyond efficiency to growth.”

It adds, “In the aftermath of COVID-19, we expect customers to continue to demand an experience in which supply chains respond with a higher purpose.”

Bindlish elaborates, “Given the current challenges, customer-centricity of business is no longer an option but a necessity. This becomes even more critical for the supply chain as it plays an important role in connecting customers and the operations team. A customer-centric supply chain is a key to unlocking differentiated service offerings that drive revenue growth, improve EBITDA performance, and meet unique customer needs.”

“A customer-centric supply chain helps pharma companies innovate better by using data as an insight generation engine to design new products and services around the customers’ needs. It enables companies to connect with external parties for real-time, end-to-end visibility and integrated planning and execution. It can further optimize day-to-day operations using analytics, performance monitoring and continuous innovation. This approach enables a service-oriented operating model that leverages a hybrid workforce for improved customer experience. Additionally, it helps configure the supply chain into an asset-light ecosystem that delivers customer experience in unique microsegments,” he adds stating that intelligent, customer-centric supply chains powered by digital can help pharma companies create efficient, resilient, and profitable operating models.

End-to-end visibility

Even before the pandemic, the importance of this aspect was understood and acknowledged. But, the pandemic has reemphasised its criticality to deal with complexities and challenges in supply chain management. It has proven that visibility and transparency across the supply chain are pivotal to decision making, be it for inventory planning, selecting the right partners, deciding the delivery points, or optimal logistical processes. It is important for cost control and customer satisfaction too. Be it inadequate inventory management, communication gaps, or slip-ups and holdups – most of the issues can be traced back to a lack of visibility. Thus, it is essential for all other supply chain functions.

This was one of the key topics under discussion when the world was preparing for the COVID-19 vaccination drive too. Even now, many of the hurdles in this massive endeavour stem from a lack of adequate traceability.

As Ashutosh Mayank and Prajakt Raut-Managing Partners at Supply Chain Labs, Lumis Partners explain, “Pharma and medical equipment supply chain, warehousing and logistics were always a specialised field with specific requirements, including regulatory compliances. However, the distribution and administration of COVID-19 vaccines have complexities of a different level – think of it as the complexity and scale of holding elections across the country. Given that multiple doses of the vaccine are required adds to the additional trace and track of not just the products but the persons receiving it as well.”

Luckily, we are witnessing a lot of activity on this front. As Jain elucidates, “COVID-19 accelerated innovation in the pharma industry. Facilitating remote monitoring to enable operational continuity became an important aspect for a resilient supply chain. Digitisation and data traceability helped in supply chain risk monitoring and management by receiving real-time updates while ensuring the correct conditions for delivery. The pandemic also presented the need for greater collaboration among all part of the supply chain management. This helped in ensuring better efficiency in responsiveness while monitoring developments in real-time.”

Mayank and Raut update, “The changing environment will create a favourable and enabling environment for more innovators to enter the field. Not just in pharma and life sciences, adjacent opportunities to build efficiencies in the entire supply chain – from distributed procurement, manufacturing, warehousing, logistics and reverse logistics – corporations and governments are looking at innovations and technologies to build efficiencies, transparency and visibility in the entire supply chain.”

Startups like StaTwig and its solution, VaccineLedger is a case in point. Siddharth Chakravarthy, CEO, StaTwig informs that VaccineLedger is an open-source blockchain network that has been internationally recognised by UNICEF and Gavi as innovative and critical.

It ensures the safety and quality of the vaccines in the supply chains by tracking them from manufacturer to beneficiary using digital IDs. VaccineLedger is powered by the data that is collected at several stages in the supply chains such as warehouses, airports,

manufacturing plants and other touchpoints. As the data is stored on a blockchain ledger it provides tamperproof records of all vaccines.

He also states that pharma and other industries will learn a lot about traceability and security of products in the supply chain through COVID-19 vaccine distribution.

Thus investment, innovation in supply chain solutions and technologies to provide end-to-end traceability will continue to grow.

To cite an example, JB Chowhan, Founder & Chairman, Vardhman Health Specialities informs that the VHS Group has already started investing in digital technologies, platforms, tie-up with manufacturers and with other stakeholders of the pharma supply chain, over the last two years. He further explains that the Group's venture, VHS LogiTech focuses on connecting customers or patients to manufacturers in an end-to-end traceable manner using its patent-pending technologies on IoT and Blockchain to ensure safety, compliance requirements and maintain the integrity of pharma products since this would help to keep the not-of-standard quality and spurious drugs at bay.

Most of the other providers are also making significant investments in improving their traceability and visibility across the supply chain. Changing behavioural patterns of consumers, regulations and policies etc are also fueling this development.

Security

Supply chain processes must be compliant with regulatory requirements and must ensure the safety, efficacy, integrity and quality of the products. Moreover, appropriate security measures to reduce the potential for theft, loss, tampering, etc must also be taken as the market landscape continues to evolve. To enable this, the industry is relying more and more on technology to make this possible. But, this gives rise to data breaches and threats. There are reports that presently, 40 per cent of cyber attacks occur indirectly through the supply chain. In this scenario, security and protection, of both the products and the data collected at various points, is one of the key parameters while creating future-ready supply chains.

As a result, pharma stakeholders need to deploy proactive supply chain security solutions aided by technology such as cloud-based services, location sensors and real-time intelligent monitoring.

Chowhan advises that since the pharma supply chain is complex, sensitive and has a wide impact, measures should be taken at all levels, i.e. pharma manufacturing, storage and distribution. The sector needs to follow GMP standards, assure compliance, enable traceability and yet ensure security from potential risks with the help of best in class technologies.

Data mapping is an example. Rajit Bhattacharya, CEO, Data Sutram, explains, “Data mapping can simplify distribution efforts by optimising resource management. Detailed data of facilities and resources across an area can help in designing an effective model of approach. Regarding the case of the vaccine cold chain, the amalgamation of IoT and geographic information system (GIS) can mean a big deal as they can be instrumental in preventing losses. This is to say that vaccines are fragile products and degrade very quickly, meaning that they should be kept within a prescribed temperature range to preserve their potency.”

Thus, while the industry is already taking strides towards supply chain transformations; security is an area that needs careful planning and strategy. It should also engage with partners and peers to share best practices and new ideas as well as learn from other industries that effectively manage supply chain security.

Prepping for the future

Our stakeholders feel that certain concrete steps taken today can be key to mitigating the risks in our pharma supply chain and making it future-ready. They laud the government’s move to make India’ Aatma Nirbhar in API/KSMs with the help of the measures like bulk drug parks and the PLI scheme. For instance, Jain states, “The Indian pharmaceutical industry needed to secure its supply of APIs and KSMs in the wake of the coronavirus. The Government of India recognised the need to revive the domestic API manufacturing industry and announced an API policy incentivising the domestic production of APIs/KSMs in March 2020. Recently, the government also announced a PLI 2.0 Scheme to further

strengthen the supply chain and become self-reliant. The core focus of creating scale and long-term survivability of the industry was developed through constant engagements between industry stakeholders and the governments.”

The experts also recommend other steps that can be taken to make our supply chains more resilient to disruptions and disasters. Some of them are as follows:

Improve cold chain

Chowhan recommends, “The global pharma supply chain management is expected to grow double fold in the coming years. Therefore the cold chain logistics market must look at innovations and investments to research cold supply chain management in India. Some of these areas would be the setting up of super speciality pharma warehousing and distribution, last-mile connectivity, digital platforms of Internet of Things, blockchain, secured data management, and annual quality audits. In addition, the other focused areas include 24×7 patient service focus, easy payment methods and online ordering facility, NPI (Name patient Import) of research molecules and excellent customer relation management (CRM) with multi-speciality hospitals across India.”

Embrace digital

Bindlish asserts, “A digital supply chain can help pharma companies with scenario modelling to simulate and prepare for supply disruptions or volatile demand opportunities, evaluating their operational and financial impact. Advanced machine learning-based forecasting solutions can help pharma companies take a significant step jump in their forecast accuracy performance, including forecasting for new business, and certain tender opportunities as well.”

He elaborates, “Digital enables real-time tracking of key parameters such as material receipts, plant dispatches including their performance against plan, and in-transit shipments. Improved supply chain responsiveness and agility helps pharma supply chain networks to respond better to external changes, in terms of demand priority or supply of input materials, by integrating planning and scheduling capabilities. With dynamic fulfilment, digital technology can help the logistics management team to centrally manage load planning, dock scheduling and load execution for improved operational efficiency.”

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Home » Cover Story » Future-ready supply chains

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Bindlish asserts, “A digital supply chain can help pharma companies with scenario modelling to simulate and prepare for supply disruptions or volatile demand opportunities, evaluating their operational and financial impact. Advanced machine learning-based forecasting solutions can help pharma companies take a significant step jump in their forecast accuracy performance, including forecasting for new business, and certain tender opportunities as well.”

He elaborates, “Digital enables real-time tracking of key parameters such as material receipts, plant dispatches including their performance against plan, and in-transit shipments. Improved supply chain responsiveness and agility helps pharma supply chain networks to respond better to external changes, in terms of demand priority or supply of input materials, by integrating planning and scheduling capabilities. With dynamic fulfilment, digital technology can help the logistics management team to centrally manage load planning, dock scheduling and load execution for improved operational efficiency.”

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He adds, “Companies need to continuously adapt to the emerging technologies to maintain competitiveness in the global supply chain. With digitisation and the internet of things (IoT), communicating with stakeholders in the supply chain operations will become easier. It will also enable industry players to facilitate supply chain monitoring and get real-time visibility on all operations. Continuous innovation will empower the pharma industry to have more control over the supply operations to ensure smooth and swift supply chain management.”

Sustainability is important too

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One such example from India could be Laxai Life Sciences, a company involved in drug discovery, CDMO services, API development, API manufacturing and formulation development. It is investing in environmentally conscious technologies like AI-powered drug discovery, green chemistry and continuous flow chemistry.

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New strategies for new realities

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PHARMA

Home » Cover Story » Future-ready supply chains

Future-ready supply chains

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By Lakshmipriya Nair

On Apr 26, 2021

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The COVID-19 pandemic underscored the need for a radical overhaul in supply chain management, especially in the life sciences sector. Faced with challenges unprecedented in scale and scope, the sector had to reassess its approaches and strategies to contain and mitigate the impact of the pandemic on its global supply chain.

Over a year after the onset of the coronavirus pandemic, as the world starts to plan for recovery, it is time to revisit the lessons learnt about supply chain reliability and risk and take stock of the measures being undertaken by the pharma industry to build supply chain resilience.

Especially so, since it is becoming evident that disruptions are likely to increase in regularity and scale, caused by varying factors including emerging pathogens, geopolitical events, climate changes and public health disasters.

The supply chain of the future will be defined majorly by the following characteristics:

Flexibility and agility

As closed borders, nationwide lockdowns triggered fears of drug shortages on a global scale, highlighting the dangers of over-reliance on few sources of supply, the pharma and healthcare sectors were forced to adapt and innovate to develop local capacity and secure local supply.

The importance of improving operating and supply chain models were also highlighted since increasing volatility across the world demands a supply chain that has the flexibility to tackle spontaneous or sudden challenges or opportunities. At the same, it also has to evolve continuously to stay relevant in an ever-changing landscape.

Thus, a key lesson for supply chain management was the need to create and implement agile strategies which will help in eliciting a rapid and effective response to changing market demands; have the capacity to tailor products and services delivered to customers, the ability to produce and distribute products cost-efficiently, curb manufacturing costs and boost competitiveness.

Interestingly, since the onset of the pandemic, there are also several instances in India's pharma sector wherein companies began to repurpose their capacity to start manufacturing products that are in high demand. For instance, India became one of the key global suppliers of sanitisers, PPE kits and hydroxychloroquine, once touted as a game-changer drug against COVID-19.

As Sudarshan Jain, Secretary-General, Indian Pharmaceutical Alliance reminds, “The COVID-19 pandemic has put the pharma industry on a transformational journey. As a trusted global healthcare partner, India has shown tremendous reliability to ensure a continuous supply of quality medicines, including those essential for the treatment of COVID-19. No drug shortages were reported domestically, and Indian pharma companies were able to meet global demand as well.”

This business agility will be crucial to success but to make such turnarounds easily possible companies should take concrete steps to improve their capacities and capabilities.

As Rishabh Bindlish, MD, India Life Sciences and Global Generics Lead, Accenture advocates, “In crises such as the COVID-19 pandemic combined with macroeconomic and regulatory risks, supply chain planning and execution of operations need to be tightly integrated to drive business value. Building resilience with robust scenario-based planning and execution capability will be vital for business continuity and growth.”

Customer centricity

In the present day, customers have to be at the centre of every business strategy. This is true in the case of supply chain transformations as well. The COVID-19 pandemic has underscored the importance of a responsive and adaptable supply chain for the life sciences sector with different endpoints of delivery and information sharing, to ensure that drugs and daily necessities reach those who need them at the right time. And, this would be possible only by comprehending the changing expectations of customers.

A report from Accenture titled, ‘*A license for growth: customer-centric supply chains*’ informs, Supply chains have traditionally been seen as drivers of efficiencies and scale, providing competitive cost advantage. In recent years, though, the role of supply chains has evolved beyond efficiency to growth.”

It adds, “In the aftermath of COVID-19, we expect customers to continue to demand an experience in which supply chains respond with a higher purpose.”

Bindlish elaborates, “Given the current challenges, customer-centricity of business is no longer an option but a necessity. This becomes even more critical for the supply chain as it plays an important role in connecting customers and the operations team. A customer-centric supply chain is a key to unlocking differentiated service offerings that drive revenue growth, improve EBITDA performance, and meet unique customer needs.”

“A customer-centric supply chain helps pharma companies innovate better by using data as an insight generation engine to design new products and services around the customers’ needs. It enables companies to connect with external parties for real-time, end-to-end visibility and integrated planning and execution. It can further optimize day-to-day operations using analytics, performance monitoring and continuous innovation. This approach enables a service-oriented operating model that leverages a hybrid workforce for improved customer experience. Additionally, it helps configure the supply chain into an asset-light ecosystem that delivers customer experience in unique microsegments,” he adds stating that intelligent, customer-centric supply chains powered by digital can help pharma companies create efficient, resilient, and profitable operating models.

End-to-end visibility

Even before the pandemic, the importance of this aspect was understood and acknowledged. But, the pandemic has reemphasised its criticality to deal with complexities and challenges in supply chain management. It has proven that visibility and transparency across the supply chain are pivotal to decision making, be it for inventory planning, selecting the right partners, deciding the delivery points, or optimal logistical processes. It is important for cost control and customer satisfaction too. Be it inadequate inventory management, communication gaps, or slip-ups and holdups – most of the issues can be traced back to a lack of visibility. Thus, it is essential for all other supply chain functions.

This was one of the key topics under discussion when the world was preparing for the COVID-19 vaccination drive too. Even now, many of the hurdles in this massive endeavour stem from a lack of adequate traceability.

As Ashutosh Mayank and Prajakt Raut-Managing Partners at Supply Chain Labs, Lumis Partners explain, “Pharma and medical equipment supply chain, warehousing and logistics were always a specialised field with specific requirements, including regulatory compliances. However, the distribution and administration of COVID-19 vaccines have complexities of a different level – think of it as the complexity and scale of holding elections across the country. Given that multiple doses of the vaccine are required adds to the additional trace and track of not just the products but the persons receiving it as well.”

Luckily, we are witnessing a lot of activity on this front. As Jain elucidates, “COVID-19 accelerated innovation in the pharma industry. Facilitating remote monitoring to enable operational continuity became an important aspect for a resilient supply chain. Digitisation and data traceability helped in supply chain risk monitoring and management by receiving real-time updates while ensuring the correct conditions for delivery. The pandemic also presented the need for greater collaboration among all part of the supply chain management. This helped in ensuring better efficiency in responsiveness while monitoring developments in real-time.”

Mayank and Raut update, “The changing environment will create a favourable and enabling environment for more innovators to enter the field. Not just in pharma and life sciences, adjacent opportunities to build efficiencies in the entire supply chain – from distributed procurement, manufacturing, warehousing, logistics and reverse logistics – corporations and governments are looking at innovations and technologies to build efficiencies, transparency and visibility in the entire supply chain.”

Startups like StaTwig and its solution, VaccineLedger is a case in point. Siddharth Chakravarthy, CEO, StaTwig informs that VaccineLedger is an open-source blockchain network that has been internationally recognised by UNICEF and Gavi as innovative and critical.

It ensures the safety and quality of the vaccines in the supply chains by tracking them from manufacturer to beneficiary using digital IDs. VaccineLedger is powered by the data that is collected at several stages in the supply chains such as warehouses, airports,

manufacturing plants and other touchpoints. As the data is stored on a blockchain ledger it provides tamperproof records of all vaccines.

He also states that pharma and other industries will learn a lot about traceability and security of products in the supply chain through COVID-19 vaccine distribution.

Thus investment, innovation in supply chain solutions and technologies to provide end-to-end traceability will continue to grow.

To cite an example, JB Chowhan, Founder & Chairman, Vardhman Health Specialities informs that the VHS Group has already started investing in digital technologies, platforms, tie-up with manufacturers and with other stakeholders of the pharma supply chain, over the last two years. He further explains that the Group's venture, VHS LogiTech focuses on connecting customers or patients to manufacturers in an end-to-end traceable manner using its patent-pending technologies on IoT and Blockchain to ensure safety, compliance requirements and maintain the integrity of pharma products since this would help to keep the not-of-standard quality and spurious drugs at bay.

Most of the other providers are also making significant investments in improving their traceability and visibility across the supply chain. Changing behavioural patterns of consumers, regulations and policies etc are also fueling this development.

Security

Supply chain processes must be compliant with regulatory requirements and must ensure the safety, efficacy, integrity and quality of the products. Moreover, appropriate security measures to reduce the potential for theft, loss, tampering, etc must also be taken as the market landscape continues to evolve. To enable this, the industry is relying more and more on technology to make this possible. But, this gives rise to data breaches and threats. There are reports that presently, 40 per cent of cyber attacks occur indirectly through the supply chain. In this scenario, security and protection, of both the products and the data collected at various points, is one of the key parameters while creating future-ready supply chains.

As a result, pharma stakeholders need to deploy proactive supply chain security solutions aided by technology such as cloud-based services, location sensors and real-time intelligent monitoring.

Chowhan advises that since the pharma supply chain is complex, sensitive and has a wide impact, measures should be taken at all levels, i.e. pharma manufacturing, storage and distribution. The sector needs to follow GMP standards, assure compliance, enable traceability and yet ensure security from potential risks with the help of best in class technologies.

Data mapping is an example. Rajit Bhattacharya, CEO, Data Sutram, explains, “Data mapping can simplify distribution efforts by optimising resource management. Detailed data of facilities and resources across an area can help in designing an effective model of approach. Regarding the case of the vaccine cold chain, the amalgamation of IoT and geographic information system (GIS) can mean a big deal as they can be instrumental in preventing losses. This is to say that vaccines are fragile products and degrade very quickly, meaning that they should be kept within a prescribed temperature range to preserve their potency.”

Thus, while the industry is already taking strides towards supply chain transformations; security is an area that needs careful planning and strategy. It should also engage with partners and peers to share best practices and new ideas as well as learn from other industries that effectively manage supply chain security.

Prepping for the future

Our stakeholders feel that certain concrete steps taken today can be key to mitigating the risks in our pharma supply chain and making it future-ready. They laud the government’s move to make India’ Aatma Nirbhar in API/KSMs with the help of the measures like bulk drug parks and the PLI scheme. For instance, Jain states, “The Indian pharmaceutical industry needed to secure its supply of APIs and KSMs in the wake of the coronavirus. The Government of India recognised the need to revive the domestic API manufacturing industry and announced an API policy incentivising the domestic production of APIs/KSMs in March 2020. Recently, the government also announced a PLI 2.0 Scheme to further

strengthen the supply chain and become self-reliant. The core focus of creating scale and long-term survivability of the industry was developed through constant engagements between industry stakeholders and the governments.”

The experts also recommend other steps that can be taken to make our supply chains more resilient to disruptions and disasters. Some of them are as follows:

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