

A robotic hand, colored black and yellow, is shown in a close-up, holding a clear plastic pill bottle with a white cap. The bottle is filled with various colored pills (yellow, orange, and white). The background is a blurred industrial setting with blue and white elements, suggesting a pharmaceutical manufacturing plant.

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Ever since COVID-19 emerged in December 2019, life has changed in the most unexpected way. Social distancing has become a standard protocol and work from home is the new normal. Alongside, the world economy has plummeted with millions of small and medium-sized businesses having closed down, putting almost 50% of the global workforce at risk of losing jobs.¹

In a recent survey by HFS, 80% of 600 Global 2000 companies said that the COVID-19 crisis is bigger than the financial crisis of 2007-08. But while most industries have been struggling with the impact of the pandemic and the sluggish economy, there is one industry that has had to quickly adapt itself to control the situation, for itself and the world—the pharma industry.

The pharma industry is experiencing a radical shift that has no precedence. From functioning in a siloed environment to having to collaborate, the industry has become highly efficient and hyper-connected to meet immediate needs. Collaboration has become critical across every level. More than 100 countries have already joined or expressed an interest in joining the Solidarity Trial, an international initiative by WHO, to find an effective treatment for COVID-19.¹

The pandemic has also forced the industry to move beyond its traditional methods of operating. For example, as confidence over the Chinese supply chain significantly weakened in the last two quarters, manufacturers started examining alternative Active Pharma Ingredients (APIs) sources outside China. This, in turn, made the decentralization of API manufacturing, the emergence of regional and local hubs, and new regulatory guidelines for drugs highly possible.



Profit with a Purpose: The End Goal in a Time of Uncertainty

Now, as the indigenous production of APIs gains ground, the industry is under pressure to change its work culture, R&D facilities and, most importantly, the supply chain. For years, pharma and MedTech supply chains have struggled to ensure transparency, but to little avail. Before the COVID-19 outbreak, drug manufacturers across the globe had limited clarity over the exact source of their APIs. That led to a massive disruption in the supply of drugs when thousands of API units were closed down in China. The impact pushed the industry not only to improve transparency in the supply chain but also to take measures to build resilience for similar unforeseen market disruptions in the future.

Besides disrupting the market, COVID-19 has also attracted new competition. For

instance, anticipating a surge in demand for ventilators, the US government roped in manufacturers from several private sectors including automobile and aircraft makers such as GM, Ford and Tesla, to produce ventilators³ Manufacturers of antiviral drug vaccines and other critical medical supplies have also seen growing competition from new players. This competitive dynamic may impact drug pricing in the long run, put the focus back on patients, and improve the quality of medicine and treatments.

The global health and economic crisis has also put to test the industry's commitment to serving humanity going beyond profit maximization. It is time for decision-makers and bigger players to proactively embrace a 'profit with a purpose' approach. The crisis

has made it clear that companies that show authentic leadership in their response will command the industry in the coming decade.

There is a possibility that healthcare costs can take a plunge in 2021 as the job loss is likely to take a toll on consumers' spending habits, on healthcare treatments or prescription drugs. There have been reports of prescription medicine being shared among family members. These factors can lead to a surge in demand for generic low-cost drugs. To address these challenges, pharma and Medtech companies will have to reevaluate their go-to-market strategy and make life-saving drugs and therapies accessible to all.



Collaboration and Partnership: The New Normal

As of June 2020, the economic impact of the pandemic stands close to \$9 trillion and the crisis is not over yet. In several countries like Brazil, COVID-19 cases are still rising exponentially. To mitigate the impact of this public health crisis, the life sciences industry is depending on collaborative efforts. In April 2020, in an unprecedented move, pharma giants Sanofi and GSK signed a letter of intent to develop an adjuvanted vaccine together for COVID-19.⁴

The R&D sector is also seeing a surge in partnerships. Pharma companies, biotech firms, researchers, public health institutes, academia, NGOs and other key stakeholders have started sharing data, knowledge and ideas. The need to accelerate the development and production of COVID-19 vaccines has given rise to several public-private partnerships. The National Institute of Health (NIH) has brought leading biopharma firms, FDA and other government agencies together to design a coordinated research response strategy.⁵ Pfizer and BioNTech have also teamed up to develop and distribute a potential mRNA-based coronavirus vaccine.⁶ Pfizer along with Novartis is sharing proprietary compound libraries to strengthen the response against the pandemic.⁷

The industry is also witnessing a rise in novel cross-sectoral partnerships. Take the EXSCALATE4CoV or E4C project supported by the European Commission as an example. E4C is a collaboration between government bodies, tech companies and researchers in Europe that aims to expedite the identification of active compounds in humans by leveraging advance computing and data science capabilities.⁸

COVID-19 and the Burgeoning Need for a Resilient Supply Chain

The effectiveness of these concerted efforts greatly depends on the stability of the pharma supply chain. Previously, pharma and MedTech companies implemented various track and trace visibility solutions to manage supply chain risk and disruption. But the current situation demands more than that. Transparency and visibility are no longer optional but a must for companies to

survive the current global crisis and maintain business continuity.

With lockdowns expected to become the Standard Operating Procedure (SOP) in case of a pandemic or any similar threat in the future, supply chain resilience becomes key to prevent future disruption. Companies are using data analytics to identify, predict and prevent disruption with much greater speed and precision.

Blockchain has shown potential in tracking and tracing products right from creation to sale in various industries. For instance, the FDA is already exploring blockchain to enhance traceability in the food supply chain.⁹ Blockchain, coupled with advanced analytical tools, can help the food industry effectively cope with sudden setbacks and counter food security issues.

The same approach, if adopted in the pharma supply chain, can help companies foresee an unexpected surge in demand, which can help in identifying the source of disruption. A Bahrain-based provider of supply chain track-and-trace platforms has already announced the launch of a smart logistics warehouse powered by blockchain and artificial intelligence (AI) for tracing food and pharma products.¹⁰

Understanding the Future of Pharma in a Post-COVID World

Now, as the world prepares for an exit strategy, the need to reinvigorate drug developments, boost the R&D ecosystem and reduce operational costs is being felt strongly across the pharma industry. The very people that the pharma industry aims to serve are under attack. This jeopardizes clinical trials. To secure the future of trials, sponsors have to embrace a patient-centric approach. For years, patient-centricity has remained a goal in the life sciences industry. But it is yet to be adopted widely. Sponsors equated patient-centricity to either greater use of technology or reduced protocol assessments. But COVID-19 has changed that scenario. Sponsors must find a way to attract and engage with patients, and obtain inputs from them to better understand their needs and concerns.

FDA guidance over the safety of patients has also left clinical trial sponsors scrambling for help to protect their patients during trial

activities. They need the right technology and solutions that will make clinical trials faster, better and more efficient. In the race to find vaccines, drug repurposing has emerged as the fastest route to deliver drugs to the market. Researchers are working on building a central repository of information about drugs being repurposed to speed up the process of getting drugs-to-market and helping pharma companies make informed decisions.

As the affordability of premium drugs shrinks rapidly across the world, drug manufacturers are under pressure to produce effective, affordable treatments in smaller production cycles. Additionally, changing patient behavior and new competitors are forcing companies to scrutinize the true value of care, provide accurate product information, and implement solutions to react swiftly to market demand.

The Changing Dynamics of Enterprises: From Mechanisms to Organisms

COVID-19 has fundamentally changed the way the world looks at enterprises and business operations. So far, enterprises have focused on creating a strong mechanism capable of executing complex functions efficiently. Speed, reliability and value-creation have been the driving factors. But is that enough to survive a crisis? Perhaps not.

The pandemic demands enterprises to go beyond the economic value-creation and start acting as living organisms that can react to any stimuli and respond to sudden changes in the market. The need is not to survive but to evolve and stay relevant by building resilience.

For pharma enterprises, that means building a live supply chain, implementing the right technologies to predict market needs, prevent stock-outs of life-saving drugs, and ensure clinical trials even amidst a crisis or lockdown. It also means maximizing the visibility and flexibility of supply chain and finding alternative approaches for drugs. A live pharma enterprise should also stay alert and receptive to new technologies. That is only possible in a hyperconnected ecosystem which requires a massive adoption of digital technologies.



The Role of Digital: An Enabler and a Value-creation Lever

Companies like Science 37 or Verily Life Sciences are coming up with technologies that can help people run clinical trials virtually and more efficiently. With technologies like this, the risks of in-person clinical trials will no longer exist. So, even if there is a lockdown tomorrow in India or China or the US companies will be better equipped to protect ongoing trials from delays or disruptions. By establishing a new ecosystem in which providers, physicians, pharma companies and patients are connected through technology, clinical trials. The HFS survey shows that the Global 2000 enterprises are particularly keen about exploring possibilities with five key technologies that might be the next big value-creation levers in the pharma industry.

- **Cybersecurity:** Cybersecurity is already witnessing a high demand as the pharma industry switches to work-from-home and virtual clinical trials. Network and operations must be secured to prevent any data breach making cybersecurity a CEO mandate.
- **Cloud migration:** Cloud is the next frontier in the drive for digitalization. The debate of on-premise vs. cloud has quickly devolved as organizations are left with no other choice but to migrate to cloud. Moreover, pharma companies can significantly benefit from the cost-effectiveness, reliability and scalability of cloud.
- **AAA Trifecta:** Looking at the present scenario, it is clear that automation, analytics and AI will see a significant uptick in the next three to six months. Google has already deployed AI and computer vision to screen mammograms and identify breast cancer at earlier stages.¹¹ Moreover, AI and ML will also become the prerequisite for a live enterprise and a live supply chain. The future will require organizations to react in real-time. And pharma has to evolve rapidly and leverage emerging technological capabilities to reach that stage.

In the coming years, the ability to map data and create actionable insights will be paramount. The industry must find answers to some of the pressing questions such as how to make trials more efficient? How to react better to a patient's needs? How to solve the unique challenges faced by the providers and the physicians? These questions can be answered only in a paradigm where AI, ML, data and insights are much more pervasively used.

- **Telehealth and Telemedicine:** It is proven that telemedicine and telehealth are going to be the new normal. The ability to quickly connect with a physician using the same video chat that people have been using for years is revolutionary. Doctors can now prescribe medicine online that can be further bought from an online store. The market is changing faster than ever and pharma companies must find solutions to seize this moment without any further delay. There is also a big increase in healthcare costs which telehealth and telemedicine services can effectively reduce.

But it is highly unlikely that these new healthcare services will gain widespread use. The present situation will lead to a new hybrid model of healthcare in which primary care will be provided through telehealth services while hospitals and clinics will become the center for emergency care.

On the path to recovery, businesses are seeing that the outbreak has heightened the importance of agility and resilience for the global pharma industry. The intense focus on patient-centricity and risk management is likely to continue. Geographical diversification of the supply chain will become a key objective for drug manufacturers to balance cost vs. risks. Digital and analytical tools will see greater adoption and bring transparency and agility in the system and process. And with that, pharma enterprises will move a step closer to become more resilient and prepared to counter similar challenges that might unfold in the coming years.





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