

Unprecedented: Innovation and the COVID-19 Response

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“Unprecedented” research project:

- Our team studied how COVID-19 vaccines and therapies were rapidly brought to society, examining the period through August 2021.
- Our sources were media reporting, reports, and relevant academic literature, interviews with a dozen senior executives.
- Our analysis focused on the role of IP in the COVID response, particularly patents and trade secrets.

Findings: Collaboration was essential for the COVID innovation response. There was significant technology and knowledge-sharing. IP was an enabler at all stages of the response.

Context for the project:

- Unusual situation, no "idle capacity"
- Difficult environment for innovators
- Novel products, distribution challenges
- Industry response, with government
- Unprecedented outcome

We studied the role of IP in relation to:

- Development of the relevant background technologies and know-how
- The crucial role of collaboration in developing COVID-19 solutions
- Investments, risk, and new approaches that were used to move COVID technologies to market
- Knowledge exchange among partners at all stages of development and commercialization - especially manufacturing

Our report describes an "industrial drama in three acts".

Act 1 Development of the background technologies and knowledge, relationships built

“Pfizer and BioNTech had already been working together to develop a vaccine using the mRNA platform. This is their core technology and the result of all the investments they have made over the years. IP protection gave them the assurance that they could share it without losing all their investments from over the years.”

IP enabled the creation of the background technologies used to develop COVID solutions.

Act 2 Set agreements with partners, shift resources, product innovation, develop processes, source inputs, secure regulatory approval, assess and expand manufacturing infrastructure

“No one party can do everything. No one entity has all the tech to bring to bear to solve a problem like COVID. It has taken a tremendous amount of collaboration. And IP has really facilitated collaboration. It allowed parties to share information freely, knowing there are frameworks to protect that information.”

IP enabled the partnerships and significant investments that were required to bring new COVID technologies to society.

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We had planned to make a synthetic cholesterol before COVID hit. Then we accelerated that and were able to launch nine months in advance. The condensed timeline required us to move people off of other projects, and to put them on this instead. We tapped into manpower and historical knowledge, and we had to sacrifice other projects. We focused on this and made it a priority. IP enabled this.”

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Shifting equipment and people to focus on COVID meant taking them off other things. This is risky and costly. We had to make sure the business would exist on the other side of that.”

Act 3 Scale manufacturing and distribution globally, manage complex value chains

“Reading about manufacturing is the same as playing an instrument by reading a book. You can't just learn it from a manual. You have to be taught it, then learn it yourself by doing.”

“Ultimately we are sharing the IP in order to show our partners how to safely and effectively make the product. Onboarding manufacturers involves significant technology transfer and you need to be able to share and speak freely.”

Technology transfer happened rapidly and on a broad scale in response to COVID.

We learned that:

Collaboration was essential to the rapid innovation response to COVID-19.

Know-how and experience played a key role.

Technology was shared as agreements were rapidly put in place.

The scale of the crisis required global **manufacturing partnerships** with technology transfer.

New approaches to commercialization are likely to remain.

IP played a positive role all along the development and commercialization pathways of the new vaccines and therapeutics.

Takeaways for policymakers:

Collaboration, supported by IP, is critical to health innovation especially during a crisis.

- To address the pandemic, companies could put their technology and knowledge on the table and partner.
- Hand-off between different partners, including research institutes and universities, was facilitated by IP.

Innovation and rapid scaling of manufacturing was not enough.

Government policy responses were not always helpful.

“IP is the opposite of a barrier, it's an accelerator.”

unpackingip.org

