



BEHIND THE DESIGN OF THE COVID VACCINE WAS ONE COMPANY PIVOTING AT LIGHTNING SPEED AND TAKING LEAPS OF FAITH

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A deep dive into Moderna's story shows how disruption favors the well-prepared, the hungry, and those whose intent is clear

It has been decades since a single disruption destabilized the world to the extent that the COVID-19 pandemic has. The businesses that managed to thrive in the midst of all that uncertainty did so by pivoting, quickly finding ways to shift their attention to respond to the pandemic world.

Governmental efforts to find a vaccine for COVID-19 were outstanding, but they still brought lessons to be learned about innovation from one company's successful efforts: Moderna. Their example exemplifies not only the importance of recognizing opportunities – no easy task – but the overwhelming importance of an organization's intent, ambition and readiness in pursuing that opportunity.

Ambition is vital in terms of improving an organization's ability to profit from disruption, and yet the concept is rarely discussed. Perhaps this is because an attitude prevails of: "Well, if I had stumbled onto a multi-billion-dollar idea like Zuckerberg did, of course I would relentlessly pursue it."

But there's more to it than that. After all, a plethora of businesses know what they ought to do to thrive – whether it is to observe their competition or better understand their customers – but fail to pursue such opportunities. Why?

In some cases, they lack the assets to implement the vision needed, but too often the failure comes from a lack of clear intent or organizational ambition to pivot, perhaps due to the complacency that comes from existing revenues. Companies like Blockbuster and Eastman Kodak are examples of incumbents with the funds, knowledge and assets to pivot, but which lacked the intent to change.

Back to Moderna's creation of a COVID-19 vaccine and the fact it provides an example of opportunity recognition and ambition in the pursuit of huge success. Though researchers at Moderna had never brought a product to market before, in January of 2020 they had been working on a vaccine for MERS (Middle East Respiratory Syndrome.) When they realized later that month that the genetic sequence of the coronavirus was similar to that of MERS, they immediately [shifted their collective focus to finding a vaccine](#) – hosting COVID-19 human trials as early as in mid-March.

Their intent – ultimately, a product on the market and a financial return to their investors – was clear, and created attention across the company: "Attention is a limited resource, so [pay attention to where you pay attention.](#)"

This pivot was quick and decisive, but their decision to do so was not as easy as it may have looked at the time. As political commentator David Brooks discusses in [a recent New York Times article](#), "Moderna scientists had designed the first [vaccine] by January 13, 2020. They had the vaccine before many people even thought the disease was a threat".

At the time, the amount of evidence that was available was incredibly limited, and there were real questions as to [whether the COVID-19 virus would disappear in the same way the H1N1 virus did](#). Labs all over the world discussed whether quickly finding a vaccine would be feasible – as the previous shortest turn-around for a vaccine [was four years](#). There were also questions over its economic viability. Historically, the cost of creating vaccines [had far outweighed their market value](#).

So, how does one interpret the weak signals and decide when to bet on one? Is there a difference between being too early with an innovation, and being wrong?

Moderna's decision to pivot in the presence of incomplete evidence exemplifies how complex it can be to identify opportunity. Even so, once that opportunity has been identified, it must be matched with a relentless drive to execute. Fail to do so and it will be filed away as yet another one of those “we were right too early” scenarios.

In the case of Moderna, it would have been incredibly easy to discard a potential COVID-19 vaccine. [A recent study](#) by the World Economic Forum found that it normally takes around 10 years and £500 million to develop a vaccine. Rather than accepting this reality, Moderna decided to dive headfirst into the pursuit of a vaccine. Within a matter of weeks, they were hosting human trials, and in just months they had an approved vaccine. But they could easily have been wrong, or created a vaccine for an illness that simply disappeared.

Pushing the boundaries of efficiency

We often lull ourselves into thinking that we are doing things as effectively and efficiently as possible. Moderna's speed in pivoting and creating a vaccine highlights the reality that, for the majority of us, we could be doing more, and faster.

Dick's Sporting Goods is an example of untapped potential for speeding things up. When the pandemic forced the chain to close its hundreds of stores, the retailer [introduced a nationwide curb-side pickup service](#) within two days. While it was a far-from-perfect system at first it, they experimented, iterated, and ultimately saved the company's sales.

The timeline for such changes is often based on past experiences. Like Dick's or Moderna, reject the premise that you ran projects as efficiently as possible in the past. Instead, kickstart your program quickly, and use an iterative approach to improve it as you go. [As Scott Cook – co-founder of Intuit – put it](#), “If there's something I've learned in the last four years, it's the power of iteration. Rapidly create, test, change”.

The combination of opportunity recognition with ‘[stretch and ambition](#)’, as referred to by Gary Hamel and C.K. Prahalad – is essential to those firms hoping to leverage disruptions as opportunities. Much like a startup going against the incumbent, Moderna was up against some of the biggest companies in the world. They had yet to bring a vaccine successfully to market, but they had the ambition to beat Pfizer, Novartis, J&J, Sanofi and so on.

As Hamel and Prahalad said, when referring to the typical David versus Goliath battle, “the misfit between... resources and aspirations would lead most observers to challenge the feasibility of its goals, if not the sanity of the managers”.

No tool left unturned

Another important factor in a company’s ability to leverage a disruption is its ability to maximize the use of the tools at its disposal. Much like Netflix with its mail-in service to rival incumbent Blockbuster’s bricks & mortar stores, the technology underlying Moderna’s vaccine - mRNA (where the vaccine adapts your immunity cells to ensure they can respond to the virus) – is a fascinating example of using the right tools rather than the customarily used ones.

While mRNA technology sounds ground-breaking to those of us who are not familiar with vaccine advancements, it has been around for three decades and [leads to the faster production of vaccines](#), and those which are safer for patients than regular ‘infectious’ vaccines. While this technology seems clearly superior, it remains largely unused by the pharmaceutical industry. Moderna took a chance on this it, though, and decided to make it this technology the cornerstone of its research.

In addition, taking advantage of external funding – using other people’s money – follows the script of startups exploiting venture capital funds to go up against giants in their industries. Moderna has [gone through 12 rounds of fundraising](#), raising a total of \$2.7 billion, including \$955 million from the US government’s Operation WarpSpeed. Moderna went public on NASDAQ in December 2018.

Our resistance to change leads us as businesses to often refuse to change our ways of working and the tools we use until we are absolutely forced to. The myriad difficulties that we experienced these past 12 months forced us – as people and businesses – to pick up and actually use resources we had sitting there gathering dust – like Zoom, Slack, and even work-from-home policies.

Our successful adoption of these tools has proven that our reluctance to change is... not reluctant! Businesses and people all over the world – from tech giants like IBM to your grandparents – have [benefited from their use and integration](#).

Lessons for all of us? Here are a few:

1. Accept that deciphering weak signals is hard, and requires taking a leap into the unknown.
2. Can you take this risky leap using someone else’s money?
3. Intent begets attention in your organization. Be clear on what your intent is.
4. Assume you can do better.
5. Be clear on how much ambition you have. Is this an “all-hands-on-deck” effort, or “just another project”?

2020 was a difficult year, and those difficulties will not disappear quickly. We continue to face a large-scale economic crisis, businesses all over the world are still unable to function properly, and we all find ourselves strained and drained as humans.

And yet, we've entered 2021 with hope. Hope for a better year, in part thanks to the vaccines of Moderna, Pfizer, J&J and Gamaleya, but also in part thanks to [the lessons that we learned in the past year](#). We can get through this, and more. And we can learn while doing so.