

Masters of Scale Episode Transcript: Stéphane Bancel, part 1

“Extraordinary leaps need solid foundations”

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STÉPHANE BANCEL: It's like going to Vegas. If you're lucky, you win the lottery. If you're not, then you have zero. And so, because I'm not a gambler personally, I'm like, "Yeah, no thank you. No thank you."

It has a 5% chance of working.

But if it changes ... it's going to change the world forever, for every human being on the planet forever, not in 5 or 10, it is forever. And in business forever, is a pretty good timeframe.

HOFFMAN: That's Stéphane Bancel, CEO of Moderna, and he's talking about a much bigger gamble than throwing a few dollars at the craps tables in Vegas. The risk he's describing is the one he took when he accepted his current job — and agreed to try, against the odds, to develop a vaccine based on mRNA.

He was recruited to Moderna by Noubar Afeyan from VC firm Flagship Pioneering. He approached Stéphane with this tantalizing possibility in 2011. Here's how he pulled Stéphane in:

BANCEL: And Noubar contacted me, he's like, "Come over. I have something crazy to show you." So I go to Flagship's office one night, and he has one piece of paper on his desk as I walk in.

And he's like, "Take a look." And so I look at this, and I told him, "It's impossible."

HOFFMAN: Stéphane's disbelief was well founded. On that paper were indications that messenger RNA could be artificially inserted into human cells and instruct them to create a protein. We asked Noubar himself to explain why this was an astounding proposition.

NOUBAR AFEYAN: So it turns out if you put mRNA into cells, it was known that you get this severe immune reaction inside the cell. Not of the good kind, which is what we want nowadays in vaccines, but of a bad kind. That is the cells just freak out because they think they're being invaded by viruses.

And so I told him what the idea was and the notion that you could come up with a new code for any drug you want and put it in the body. And yeah, I think his initial reaction was rightly skeptical.

HOFFMAN: Noubar was now showing Stéphane that there might be a way to avoid the cells freaking out. Instead, they would let the mRNA in and then happily use the instructions it contained to synthesize a protein. Making it work in a consistent and scalable way was more than a longshot. It was a moonshot.

And Noubar wanted to convince Stéphane it was a moonshot worth taking.

AFEYAN: And Noubar was very good. He is a charmer. And then of course he flipped me like a pancake.

I said to him, "Listen, it may not work, but if it works, this will be as big or bigger than Genentech," which was the iconic ... the Google of biotech or the Amazon of biotech. And I said, "You're going to regret not being the person who builds that company."

HOFFMAN: Through the lens of this astounding new technology, Stéphane saw a world in which new drugs take hours rather than decades to develop at a fraction of the cost — with fewer unpredictable side effects and far higher rates of success. And this technology came from a small bio-tech start-up that Noubar had founded, and now wanted Stéphane to lead.

BANCEL: So you're telling me if this is true, we're going to be able to do an incredible number of medicine, helping so many people that nobody else can with a higher chance of getting to launch. And it's going to be faster and it's going to be cheaper? He's like, "Yep."

HOFFMAN: That company, of course, would become Moderna which, thanks to its pioneering technology, played a central role in the unprecedented global fight against COVID-19.

It was a historic risk, which we now know was more than worth taking. Noubar convinced Stéphane to take the gamble because he knew Stéphane was the right leader for the risk that was ahead.

AFEYAN: We leap much further. And when we land, some of the time we land on quicksand and some of the time we land on things that end up becoming solid enough territory that we can continue to iterate, iterate, iterate until we find value. And so, that's the nature of the platform businesses we create.

HOFFMAN: Both Stéphane and Noubar were certain of one other thing: the best chance of success was to build Moderna from the ground up with a singular focus on this extraordinary possibility.

That's why I believe you need to prepare to make extraordinary leaps in extraordinary times. And to do this, double down on the right mindset and platform to take risk head-on.

[THEME MUSIC]

HOFFMAN: I'm Reid Hoffman, co-founder of LinkedIn, partner at Greylock, and your host. And I believe you need to prepare to make extraordinary leaps in extraordinary times. And to do this, double down on the right mindset and platform to take risk head-on.

In 1961 President John F. Kennedy announced to the world that the U.S. would land astronauts on the moon within the decade.

At the time, America was lagging badly behind the Soviet Union in the space race, and the country was fractured by social injustice and civil unrest.

Then there's the fact that much of the technology needed to reach the moon, land, and return safely didn't even exist yet.

The plan was so audacious it coined the term "moonshot."

They had to build rockets, landers, spacesuits, computers, and procedures, and the entire time they weren't even certain that the moon's surface could support the weight of an astronaut; let alone the lunar lander. It could, effectively, have been a moonshot into quicksand.

But just eight years later, American boots stepped onto the lunar surface. And they didn't sink.

This literal moonshot was a success because NASA cultivated a risk mindset tailored to their mission and then built out a solid platform to support it.

That's why the first Apollo mission to land on the moon was Apollo 11 — not because all previous missions had failed, but because each previous mission's purpose was to help test and build the platform that would give the moonshot the best possible chance of success.

When we talk about taking a monumental risk for huge gains, it's easy to forget how important it is to assess the risk clearly and build a strategy around it, based on both your goals and your company's culture.

It's also easy to overlook how the success of your moonshot doesn't rest in simply taking the risk but in how solid your platform is.

I wanted to talk to Stéphane Bancel about this because, as the first CEO of Moderna, he built the company from the ground up with the singular goal of making the moonshot technology of mRNA medicines work. He built a culture at Moderna that embraced risk while also taking counterintuitive moves to make sure that the foundation for their moonshot was as solid as possible, a moonshot that saved millions of lives, with a technology that could be even more impactful in years to come.

Because of this incredible achievement and the remarkable lessons to be learned, we've split this episode of Masters of Scale into two parts. In Part One we'll focus on how Stéphane helped Moderna defy norms and deliver life-saving science by creating a technology platform. Part Two will dig into how Moderna scaled its impact, under the most dire of situations, and what that may mean for future transformative breakthroughs.

As we heard at the top of the show, before he took the helm at Moderna, Stéphane was CEO of French biotech firm bioMérieux.

He took over at bioMérieux in 2007 after over a decade working in management and executive positions in the pharmaceuticals industry. However, despite his impressive resume. BioMérieux's choice of Stéphane for CEO was an unexpected move.

BANCEL: The chairman of bioMérieux contacted me one day and is like, "Hey, we're looking for a new CEO. You are way too young so most probably you're not going to get the job."

"But I was advised by somebody I trust to really put a broad list of all the people I could think of that could potentially do it, and you came on that list, so would you be interested?"

HOFFMAN: So Stéphane put his name forward without expecting much.

BANCEL: To quite my surprise, they gave me the job.

BioMérieux at the time when I became CEO was around 6,000 people. It had commercial presence with people on the ground in 40 countries. And so I got in there, and what I do is, first I'm totally freaked out because I'm like, "Shit, I don't know if I can do this job."

HOFFMAN: Stéphane's solution was to set off on a listening tour.

BANCEL: I spent the first 60 days going around the world talking to literally maybe 150 to 200 of the leaders of the company. And I would ask them the same questions. I ask them, "Okay, talk to me about you and your life and your family. And then talk to me about your department and what you do, or your country, or your lab." And I will always ask them, "Hey, if you are the CEO tomorrow, what are the two or three things you would do?"

HOFFMAN: The listening tour is an approach I've seen from other great leaders when they're first joining a company. In fact, I would argue it's an essential practice for any new leader.

It gives you an immersive and nuanced introduction to the culture, morale, concerns, and mindset of your team. And from this, you can build a strong launchpad for positive, collaborative change.

I saw this first-hand when Jeff Weiner took over from me as LinkedIn CEO. Jeff talked about this in his Masters of Scale episode titled "How to Set the Drum Beat."

JEFF WEINER: So I took the time to meet with literally every person in the company. At 330 employees, it was still manageable. That would be a lot more time-consuming today. And so before I decided on any plans going forward, I wanted to make sure I understood what was happening, and I wanted to learn as much as possible from the people who had developed the company up until that point.

HOFFMAN: After that extensive listening tour, Jeff identified what LinkedIn needed to build was a launchpad for its next leap in scale. He then set about communicating it, not just once, but again and again, at every opportunity. It became a steady drumbeat that reverberated through the company.

WEINER: I think all effective leaders understand the importance and power of repetition. And it's counterintuitive, because once you say it just a second time, you start getting bored of it, and you just project that boredom onto the audience. You just assume that people have heard it before. They don't want to hear it again. But they've got their own priorities, they're focused on other things. And so that repetition is actually really important.

HOFFMAN: In Jeff's case, his listening tour set the time signature for a steady drumbeat focused on building a shared culture. Even since Jeff stepped down from the CEO role in 2020, the drumbeat he set still resounds throughout the company.

For Stéphane, the listening tour helped him gauge his team's risk mindset.

In order to establish the right risk mindset in your team, you need to be intimately acquainted with your business, and all its exposure points to risk.

Now, the "right" risk mindset for one company may be vastly different from another. It depends on your goals, your timeframe, your competitors. Whatever the right risk framework you decide for your company, you need to make sure everyone on your team leans in to it.

Now that Stéphane had synthesized his fresh viewpoint with what his leaders saw on the ground, he could put together a bold plan of action.

BANCEL: I went to the board and told them, "We should stop investing in those parts of a business where we don't have scale. We are naive because we have two people in France, and there's three companies in the U.S. with \$200 million and 50 people, and

that's all they do. We have no chance to ever compete with those guys. So let's stop wasting money and focus on what we're really good at."

HOFFMAN: It's not that these sideline operations had no upside, but rather, there was no way of realizing those upsides without pouring in vastly more resources. And doing this would take resources away from the risk that had the best chance of paying off. Take all risks, and you're more likely to lose — even if it seems like diversifying helps. Focus is what's required. It's as important as choosing the right risk.

It often takes an outsider to piece this kind of picture together. Having those non-scale outliers in the business might feel like a way to hedge against risk. But what Stéphane saw with fresh eyes was that these outliers were increasing the risk to bioMérieux's core business.

Through that listening tour, Stéphane had identified what needed to be changed in bioMérieux's collective risk mindset. And he could use his findings to pitch a convincing case of why these changes were needed. Not just to the board, but to everyone at bioMérieux.

BANCEL: I'm of the belief that as a leader, you need to spend a lot of time on the ground with people. So town halls, lunches with 20, 30 people, dinners with the leadership teams, a lot of time with people. And I think as a leader, just keep repeating the plan.

HOFFMAN: Recall how Jeff Weiner did a similar thing at LinkedIn with a steady drumbeat to cement the company's culture. Stéphane's steady drumbeat aimed at instilling a new risk mindset at bioMérieux. And he framed it to be as clear as possible.

BANCEL: The plan was pretty simple. I'm a very disciplined guy, so there was priority one, priority two, priority three, priority four, not 50. And they had numbers, and we started executing. We built around 10 companies to strengthen our core business. We closed a few factories. And the company did fantastic. We doubled the growth rate in the five years I was there compared to the five years before. We improved our margin. The stock did very well.

HOFFMAN: That was until VC Noubar Afeyan approached Stéphane about heading up a very small company he had co-founded. That company's name was Moderna.

[AD BREAK]

HOFFMAN: We're back with Stéphane Bancel, CEO of Moderna. And if you want to hear the entire, uncut version of this interview, you can do so by becoming a Masters of Scale member. Members get to hear new episodes before anyone else, and get exclusive access to the uncut versions of our interviews, Masters of Scale courses, and a range of other exciting benefits. To join, visit mastersofscale.com/members.

Where we left off before the break, Stéphane was approached by VC Noubar Afeyan about becoming CEO of a small biotech company he'd co-founded that would become Moderna. It specialized in a niche, unproven technology: mRNA.

At the very beginning of this episode, we heard the story of how Stéphane was bowled over by the huge potential of mRNA, and accepted Noubar's offer even though he estimated it had just a 5 percent chance of success.

So this is a good place to briefly recap what mRNA vaccines are and what makes them so revolutionary. And to do that, we asked science communicator and geneticist Alex Dainis to help out.

ALEX DAINIS: mRNA vaccines are really cool because in essence they're pretty simple. They have two main parts. There's a piece of RNA, so this is a nucleic acid molecule that gives your cells some information, and then there's a little fatty bubble around it. Your cells are able to read the instructions that are coded in that piece of RNA and turn them into a protein.

So what producers and manufacturers have been able to do is to take the sequence of one specific protein from the SARS-CoV-2 virus that causes COVID-19, and put it into these vaccines so that your body can read that sequence, make just this one protein from the COVID-19 virus, and display it to your immune system so that your immune system can learn what that looks like, and if it sees it again, it can mount an immune response against that virus.

HOFFMAN: The theory behind mRNA vaccines had been around for decades. But it is only recently that companies like Moderna figured out how to make it work in practice. And the potential is staggering.

DAINIS: RNA vaccines are really revolutionary because they outsource part of the vaccine production to your own cells. Many vaccines that we've used in the past, you have to make a lot of the virus itself in the lab and then package that into a vaccine that you're actually giving to people. And that can take a lot of time. It can be very expensive. And it means that sometimes our vaccines aren't quite as effective as we want them to be.

With RNA vaccines, because we're sort of outsourcing a part of that production to the cells in your own body, you can really truncate the amount of time it takes to make one of these vaccines.

HOFFMAN: Noubar opened Stéphane's eyes to mRNA's potential to reconfigure the risk/reward calculus of drug development. And Noubar wanted Stéphane to join Moderna as it attempted this moonshot.

BANCEL: And he's like, "I want to build this company, so you're a big company guy. You spend your time saying no to bad ideas."

HOFFMAN: Noubar wanted someone who would know when to put the brakes on certain risks in order to make sure the moonshot had maximum chance of being achieved. This is how Noubar puts it in his own words:

AFEYAN: The one thing I had seen in him that I think has served him well since, and it's a skill or balancing act that has evolved considerably and strengthened, is what I call generally this notion of paranoid optimism. And so my mindset definition of a high-growth entrepreneurial leader is that you need to be both paranoid and optimistic.

And he was both of those things. He was able to see the possibility, even though he could foresee the challenges. But he also could constantly bring to the table all the assumptions that we might be getting wrong, so that we're constantly iterating and testing our assumptions. And so this combination, what I call gas pedal, brake pedal, that's also defined our relationship. Because for all the years since then, I've served as a brake pedal when he was pushing hard on the gas pedal. And some other times I wanted to push on the gas pedals and he would be the brake pedal. But he himself internally has both of those characteristics in spades. And he looks for people around him to help amplify, so that the balance is always there. I think that's a huge advantage.

HOFFMAN: All leaders and strategists, whether a startup or a large company, have to say no to a lot of ideas. That is unless you have so few ideas that you're not generating enough to say no to, and that's a whole problem in itself.

So finding the right balance between the gas and the brake is key.

But note how Noubar doesn't restrict Stéphane's role to that of the brakeman. He knew that the relationship would be far more nuanced than that. Sometimes Stéphane would be the one gunning the engine, and it would be up to Noubar to shave off the speed. No one's role was set in stone. Indeed, it was the dynamic between the two of them that would be important.

As we heard part of the story earlier in the show, for Stéphane, the problem right now was deciding if he should say yes to Noubar's proposition.

BANCEL: And so I left his office. I walk home. My head was spinning in many directions. And so I talked to my wife like I've done for every big decision in my career.

She's like, "You have to do it." And I look at her a bit puzzled because I thought she would be the conservative one. I said, "Why?" And she's like, "If this works, this is going to help kids that have rare genetic diseases, that their families have no hope today. You're going to be able to potentially work in cancer and other things. And you're going

to impact so many lives and so many families. And if this could work, if this mRNA technology could work, you might be one of a few people who might make it work."

"You're so stubborn. You are totally relentless. And if it works, it will change the world forever." That's the piece, Reid, that was very clear in my mind at the beginning, which was, it was this thing that you encounter very few times in your life where it has 5% chance of working.

But if it changes, it's going to change the world forever, for every human being on the planet forever, not in 5 or 10, it is forever. And in business forever, is a pretty good timeframe.

I say, "Okay, I'll do it."

HOFFMAN: Stéphane saw two key things he needed to do. The first was to make sure Moderna was built from the ground up with the right risk mindset.

The second was to build out a platform for this revolutionary technology so that, when the time came, Moderna could scale its moonshot technology at maximum speed.

To achieve these goals, Stéphane needed Noubar to agree to two red lines.

BANCEL: I said, "I'll do it, but I have just two things that are really important to me that I need your support on." And he said, "Tell me." "One is I don't want to go public too early because it's a platform. If it works, it's a platform company. We're going to have to invest a lot to build the platform. There's never really been a platform company in biotech. It's in the tech world that we have amazing platform companies like the one you built and many you helped."

HOFFMAN: Until now, a platform approach had been impossible in the pharma industry. Each new drug needed to be built from scratch, its active ingredients combined and tested. It was like making a one-of-a-kind hand-crafted artisanal toy.

But mRNA allowed for a different approach. It was more like a Mr Potato Head; with the potato body as the platform, you could come up with any number of new characters in an instant. It was something I reflected on with my producers after I spoke with Stéphane:

HOFFMAN: To some degree every business is a platform that makes certain kinds of business activities much more efficient and simple and other ones much more expensive for that particular organization. So Levi's wants to launch jackets. Very easy to do. They have factories. They have direct and retail relationships. They understand fabrics. Et cetera, et cetera. Levi's wants to launch milkshakes, not so much. Weird impedance with the customers. Totally different supply chain, totally different go-to-market, probably different logistics, and all the rest. And so all businesses are kind of setting themselves

up to: What is the platform of your business about? Which kinds of products and services can you offer? How do you dynamically evolve them? Et cetera. And so part of that when you're in a start-up is what's your risk that you're setting up for, how much of a platform, because typically you worry that you put all this tooling in a platform and you don't get a specific application right. Namely, this is what's going to be sold.

HOFFMAN: When it came to Moderna, in tech terms, it was like building an OS rather than an individual app; once you have that OS in place, you can then quickly build out individual apps using it.

But this approach had its own inherent risks that Stéphane needed to mitigate.

BANCEL: And so I'm like, "If we go public too early, the capital market will not know how to understand such a company. They're going to ask me, 'What's the first drug? What's the first drug?' And we're going to de-focus investments in the platform, and we will minimize what this could be in the next 10 to 20 to 30 years for the world. And I will not do that. So I just want your word that until I say, we go public, we're not going public." He's like, "Okay."

HOFFMAN: This is one of the dangers of building a platform — you may be able to see all the potential, but your stakeholders may not.

Then there was that second red line Stéphane needed Noubar to agree to before he said yes to Moderna.

BANCEL: "And my second ask is I don't want another VC. When everything goes well, the VCs are pretty aligned. But when things don't go well, you are not so aligned." Different timeframes, different philosophies, different risk profiles. I just want to have you backing us up."

I'll find the money. I'll raise the money. And I say, I have to be honest, I've never raised a penny, so I hope I raise the money."

HOFFMAN: Note how Stéphane was taking on a huge risk in terms of funding to mitigate what he saw as a bigger risk — that having VC investors would make it difficult to do the preparations he needed in order to build out the platform. An impressive, counterintuitive risk, Stéphane was fortunate to have the open-minded Noubar backing him up on this.

I think Stéphane's complete rejection of any VC funding was on the extreme side. But I can also relate to where he was coming from. I think it's one of the reasons you need to proactively construct your board and take differences in risk tolerance into account. If you have VCs that share your risk mindset, you'll have their experience and network on your side, greatly boosting your chance of success. But, if you take investment from VCs who have a different mindset, you will decrease your chances.

And this is key — avoiding a risk doesn't mean avoiding all risk. It's a calculus. Stéphane was exchanging one risk for another. Not many people would have even seen this as a move they could take; who says no to funding opportunities? And very few would have seen just how aggressively they'd need to defend the timeframe for building that platform.

Now Stéphane needed to build out a company culture at Moderna that embraced risk and scaling at speed.

HOFFMAN: This is one of the key things that from my software technology platform company experience is both amazingly parallel and amazingly different because you're generating an ability to code as a platform across a number of different applications parallel, but you're solving science problems on, well, how do this actually work in these complex biological systems?

I think I heard that you went on a Silicon Valley tour and was curious. Why did you do that? What did you learn? And what did you learn that was parallel, and what did you learn that was different for building this new kind of company?

BANCEL: Yeah, the thing that was a very good model for us with the tech platform was this notion of invest in the platform as much as you can, don't think about the apps at the beginning. Just build. We had to build the operating system of mRNA. And so, we just built the systems and more and more so we can have people coding apps, which is developing drugs. For us, COVID-19 vaccine was one app that the team built out of the Moderna mRNA OS.

And so, a lot of those analogies in term of: how do you think about investments, how do you think about timeframe, how do you think about compounding, how do you think about learning, how do you invest in digital infrastructure so that you build the tools so that your teams can really go very quickly and scale?

And there was nobody in biotech that has grown so fast, or pharma because those are big companies. So I'm like, "I need to go to California."

HOFFMAN: Stéphane visited companies including Netflix, Google, and Facebook. He told me about the many things he learned about scaling culture, hiring at speed, onboarding, and defining your mission — all of which Masters of Scale members can hear in the uncut version of this interview.

That tour also gave Stéphane ideas about how Moderna's risk mindset could differentiate it from the rest of the pharma industry.

BANCEL: What we needed is: what's a tool set that we need to give people on how they make decisions? And some of them are very not intuitive for people coming from

pharma. This is not an industry where you have the most, let's say, risk-taking people, for example, because as you know, most drugs fail in the clinic in pharma.

And so when the drug works, the key motto is, don't break anything because the NPV of that drug. The day of launch could be 20, 50, a hundred billion dollars in one drug. So imagine the brand manager of that drug doesn't have a lot of room for freedom. They don't want to take any risk because there's so much at stake. And then there's a regulatory side of it where you build the process once, and then you have to go back to the FDA. And most people say, "I don't want to do that. So I don't change the process." So you have a lot of constraint in the industry that makes that this is not an industry where people take a lot of risk.

And so, one of our mindset that we articulate very clearly to people is you cannot have impact without taking risk. And we're all about impact to patients. And one of the reasons we were ready when the virus happened, and we were able to get one of the best vaccines in the world is: we have been spending 10 years taking a lot of calculated risk. And taking risk is not doing things that are unlawful or unethical. It's doing something that might fail. And how do you build a portfolio, how do you build options?

HOFFMAN: Building optionality is important. But one thing to remember is there can be different dangers around having too much optionality. Maybe it's analysis paralysis or decision paralysis, being unwilling to commit to one specific thing because it's right for the company and the market. But on the other hand, a big part of a business is having an established platform to iterate, which gives you a lot of value.

With a mindset for risk that set it apart from the rest of the pharma industry, Moderna worked at building out its tech platform. But while progress was encouraging, acceptance of the new technology in the wider industry was slow. It made getting funding from institutional investors difficult, and it also made attracting highly-qualified scientists hard.

But then in 2016, Moderna partnered with another pharma company whose name will be familiar to you: AstraZeneca and its CEO, Pascal Soriot.

BANCEL: He is one of the few CEOs in pharma who really understand science deeply. And he's like, "Look, it's crazy. But if it works, it is going to change medicine forever." So they give us \$240 million upfront payment to get access to 40 drug options. And that was a big moment because we moved from literally \$20 million of cash left on the balance sheet to \$260 million the next day when we got the payment, S=so there was a big change into what we could do science-wise.

HOFFMAN: Stéphane had found a like-minded investor that also gave a huge boost to industry confidence in mRNA. This made it easier for the company to secure talent and build out its platform.

By 2018, Stéphane had built an 800-strong risk-embracing team and a platform that was geared for explosive scale when the time came. That year, the company made the biggest ever biotech IPO in terms of raise and valuation. It was set to be a vindication of Stéphane's vision and the team's hard work and dedication. But then the stock started trading.

BANCEL: One maybe of the most embarrassing moment of my life was the day we started trading, I think we went down 18%. I forgot the number, but it was bad. So I didn't feel really good then. I spent a lot of time on the weekend calling a lot of investors. I was really upset.

HOFFMAN: For the next year, the stock's performance was middling, and money became tight.

BANCEL: And as we go into 2020, we need to raise money. And we are very careful on where we're going to spend. And our goal is not to increase our spend in 2020 versus '19. We're going spend a half a billion dollars, and that's going to be it. So there's a lot of things we want to do science-wise and drug-wise, I would say, "Guys, we don't have any money. We're not doing it." So it was a very frustrating fall of 2019 from the budget process.

HOFFMAN: But very soon, Stéphane's worries about the company's finances were to be eclipsed. In fact, soon the entire planet would have a very different concern on its mind.

BANCEL: And then, during Christmas and New Year, I'm in the South of France with my family, and as every morning of my life or 99% of the mornings of my life, I get up, I go for a run, I come back, I turn on my iPad, and I read the Wall Street Journal. And there's one page on the iPad article, a very small article on Wall Street Journal that there is a new virus or bacteria. At the time they called it an infectious disease agent, because you don't even know if it's a virus or bacteria that is causing pneumonia-like symptoms in Wuhan.

HOFFMAN: This was of course the start of a planet-wide pandemic that would put humanity to the test. It would also be the ultimate test for the moonshot that Stéphane and Moderna had spent over a decade preparing for.

And we'll hear all about that in Part Two of this episode.

I'm Reid Hoffman. Thank you for listening.