



Q&A

CEO Anne Wojcicki on turning 23andMe into a 'full-fledged biotech'

23andMe always had larger aims than at-home genetics testing. In this in-depth interview, Wojcicki explains the company's foray into drug R&D.

Published Nov. 7, 2023

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Anne Wojcicki attends a 2019 event at the Wallis Annenberg Center for the Performing Arts in Los Angeles. Dia Dipasupil via Getty Images

First published on  PharmaVoice

23andMe has cemented its place as a go-to provider of at-home genetic testing over the past two decades. Along the way, the company has also been working toward its long-term vision of becoming a full-fledged biotech.

The rest of the industry still hasn't fully caught on, according to Anne Wojcicki, the company's co-founder and CEO. "I've talked to all kinds of people over the last year who stare at me [thinking] ... you do research?" she said.

She assures them that, yes, 23andMe does real drug research.

"We have real labs," she said. "Scientists, pipettes. Doing functional genomics experiments. We have 100 people doing

therapeutics research. We have gone entirely from genetic data, hypothesis, early research, to filing an IND and actually in human studies with a Phase 2a program.”

23andMe’s pipeline includes two clinical programs, both in immuno-oncology. Others in cancer, cardiovascular, immunology and neurology are in the discovery and preclinical phases.

The reinvention won’t surprise anyone who has paid close attention to the company’s moves since it launched in 2006, such as when it hired R&D veteran Richard Scheller as chief scientific officer in 2015; or when it got an OK in 2017 to market the first FDA-authorized, direct-to-consumer tests to determine genetic predisposition to certain medical diseases or conditions; or just last month when the company extended a drug discovery collaboration with GSK.

“From day one, it was set up to be a database you could leverage for research,” said Wojcicki. She claims the size and scale of the company’s data “swamps” other resources. Compare, for instance, the U.K. Biobank’s data on 550,000 people to 23andMe’s 14 million.

23andMe’s growth hasn’t been without controversy. From data privacy concerns to the possibility of discrimination based on genetic information, the company has had to navigate ethical concerns. It’s currently embroiled in a breach of customer user data that’s drawn scrutiny from the Connecticut attorney general.

Despite the concerns, 23andMe has continued to develop new personalized services. Recently, it launched its Health Action Plan tool, which provides health recommendations based on personal genetic reports, health history survey data and blood and biomarker data. 23andMe also sells the first FDA-authorized

pharmacogenetics reports that tells people their likelihood of developing side effects from specific drugs

Wojcicki hopes all the data they've collected will come "full circle" to help the very people who contributed their information to the drug discovery process. "The No. 1 reward I can imagine is, at some point, we have a therapy that benefits our customers," she said.

In an interview with PharmaVoice, Wojcicki described the company's transformation, its collaborations with pharma and the surprises she's encountered along the way.

This interview has been edited for brevity and style.

PHARMAVOICE: Why is 23andMe in a good position for novel drug development?

ANNE WOJCICKI: We have always been a consumer company, but the goal has always been: How are we empowering individuals and how are we changing the trajectory of healthcare? And change it from empowering individuals to get access to their own genetic information as well as changing by helping leverage crowdsourcing data so that we can cure disease.

Part of the responsibility we have to our customers [in] dramatically accelerating the pace of research is being able to leverage the insights we have for their good. Obviously we do that on the consumer side in returning the reports, but we also felt like we needed to [make] our best attempt at saying, let's see if we can actually solve these problems.

When we had the opportunity to hire Richard Scheller, that was the beginning of the transition of 23andMe from more of a consumer company into a true healthcare company, and that was not well understood by the industry. Then, in 2018, we did a large collaboration with GSK. And if you look at everything we did and

all the announcements we had...it really showed we became a full-fledged biotech.

We have a consumer division that focuses on engaging the consumer. But we also have a very large therapeutic side that's focused on how we're going to translate this data to the benefit of our customers. We have our immuno-oncology programs in house and we have a dedicated discovery team focused on inflammation and immunology and looking at how we [can] go through datasets, pull out interesting and novel insights, and translate those into meaningful discoveries and cures potentially for our customers.



*23andMe CEO Anne Wojcicki speaks on stage during an event in 2015.
Brad Barket via Getty Images*

How has your perceptions of the U.S. healthcare system changed. What role has 23andMe played?

WOJCICKI: There's [a lot] I'm proud of with the company, and one thing that's put us on the map is the whole world of direct to consumer. Prior to us, you had OTC products that you could buy, but there wasn't really a direct-to-consumer industry for

healthcare. And obviously, the entire industry exploded during the pandemic because of telemedicine and those opportunities.

Also along those lines, we have proven that there are aspects of healthcare, like your genome, where you don't necessarily have to go through a healthcare provider — our FDA authorizations are direct to consumer — that do not require pre-counseling or post-counseling.

One of the most important aspects of healthcare, long term, is being able to prove that to deliver care in any kind of scalable way, it cannot be dependent on an interaction of one-to-one between a consumer and a physician. You have to find ways that healthcare can scale. [Other] industries all scale because they have found out how to do that without having to have a one-to-one interaction. So we've been able to deliver genetic data now to 14 million people and none of those customers had pre-counseling or post-counseling. They may have taken some of that data to their clinicians to follow up or to chat about it, but they were able to get that in an affordable and efficient manner.

I do also look at the millions of my customers who have learned lifesaving or life-changing information, and the impact that has had. We have opened up a new industry. We've had a profound impact on customers' lives.

You said 23andMe was set up from the beginning as a research database. What role has that played in the company's growth? Anything that surprised you?

WOJCICKI: We had a really good set of advisers early on, and we spent a lot of time on ethics. It's unusual because as a startup tech company, we had consent forms right away and we spent lots of time soliciting feedback on consent and on getting input. We had a scientific advisory group [that] pontificated about...all the crazy

things that could happen, and solving cold cases was one of them. So I feel grateful for the team that helped us think through a lot of it ... and we were well prepared for a lot of the issues that came our way.

[What] has always surprised me is just how well the machine works, meaning that self-report works really well; most people want to opt into research; and most people when I re-contacted them and they see the message, they are interested in participating in research. So our ability to create this real-time research engine has really been extraordinary.

The one area I was not prepared as much for was that we would be front and center on the conversation around race. Like, what's the definition of African American? At what percentage of African DNA are you no longer African American? Those are the types of ethical questions that I didn't anticipate. We had people who were white supremacists doing 23andMe and finding out that they are not as white and European as they expected.

We always anticipated a lot on the health side, and we spent a lot of time on the ethics of the health side. But ... the sense that your genome impacts your sense of identity was an area that surprised me more.

What are some things the company hasn't tried yet?

WOJCICKI: I'm always surprised that genetics is not well adopted in clinical trials because you can use genetics to pick the right population to recruit a clinical study. The whole biotech/pharma industry still hasn't quite grasped how much people want to be participants and partners in healthcare. They don't want to just be a subject. People actually want to have a voice and they want to have a meaningful voice. There's a real

opportunity for us to have the real-world evidence and ... engage people.

How did 23andMe chose the direct to consumer route?

WOJCICKI: One of the areas that I was investing in that I was most impressed with [as a healthcare investment analyst] was the HIV community. I started going to all the disease advocacy group meetings [like] Project Inform and Gay Men's Health Crisis. They were super aware. They were better than all my Wall Street research. They knew what was coming, they knew the side effects [of drugs]. The community was self-reporting. I was blown away that this community had taken charge, and I felt like I was learning from them.

At the same time you had the Live Strong communities, and you had Susan G. Komen, and you had all these people showing up for these three-day walks, and people were constantly asking to donate. I realized there's this huge opportunity to engage people. I would be in these meetings ... around genetics or around access to medical records, and I remember thinking, who owns the data? There'd be these turf wars. It's the hospital or it's the doctor or the provider, the insurer, and no one ever talked about patients.

I saw from Livestrong and Susan G. Komen there was enthusiasm for people to make a difference. I saw from the HIV world that people could actually step up and crowdsource research and make a difference. And I realized ... all this could go online.

And I also had this moment where [in] 2004, 2006 the markets were tough. I felt like innovation had dried up. I went to this one meeting in D.C. about billing optimization ... It was this room packed with people in suits. And I realized the world was focused on revenue optimization and not on dramatic changes to keep you

and me healthier. That's when I decided the world's never going to change from within.

If you want to change healthcare, you have to change it from outside. I still, to this day, stand by it. I don't think you change from within because the incentives are just wrong. And every time I ask that question, 'Who profits if I stay healthy?' no one has an answer for me. There's no one who makes money if I stay healthy.

Do you still feel 23andMe is an outsider in the healthcare system?

WOJCICKI: I feel like we are getting closer. For a while we were on the outside, and some of the worst things our competitors did was coin the term 'recreational genomics,' which was just awful, [as though all we] do [are] cilantro studies and Neanderthal [reports]. But we were also so dangerous that we had to be shut down and regulated. It really confused people.

At the end of the day, we're consumer-empowering. Is APOE e4 for Alzheimer's risk...just recreational information? It changes people's lifestyles. It's absolutely about your quality of life ... and helping [people] make long term decisions.

After 17 years, we're getting closer and closer with our FDA authorizations and our general acceptance. We have also been running surveys of clinicians, and we now can see that physicians are interested in genetic information. They would like to offer genetic information to their patients, and they're just not trained on it.