

Fighting COVID-19 —with algorithms

How Colombia's high-tech strategy saved lives



Call for change

A country's future at stake

In early 2020, Colombia was on the cusp of a crisis. The COVID-19 pandemic had started quietly on another continent; but by March, it was roaring through the South American country at an alarming rate. With case numbers skyrocketing and predictions of a recession looming, the lives of Colombia's 50 million citizens—and its economic stability—were at risk.

The government would have to take unprecedented action, and many questions needed answers: When should the country shut down airports and public transit? How long should lockdowns last? Which moves would keep the public safe, while

minimizing economic turmoil? To make the right choices, officials needed to predict the future—but their crystal ball was cloudy. The models and tools they had available weren't complex or exact enough to properly inform decisions of this magnitude. So President Ivan Duque and his administration, along with Colombia's Association of Entrepreneurs (ANDI), joined forces with Accenture to leverage data and technology in ways that could effectively guide the country's pandemic response.

The goal was to create a suite of tools that combined rich data sources and advanced modeling to predict the progression of the virus, as well as the

social and economic impact of potential government strategies to address the pandemic. Once the country's leaders could make better-informed decisions, they would also need a communications strategy to keep citizens informed. The team brought together an uncommon and diverse mix of people, including data scientists, economists, technologists, designers, public health experts, advertising creatives with knowledge in data, ethnographers and cultural anthropologists. They set out on a once-in-a-generation mission to protect Colombia from the pandemic.

“The goal was to create a suite of tools that combined rich data sources and advanced modeling to predict the progression of the virus”

When tech meets human ingenuity

Finding solutions hidden in data

Accenture drew on real-time data sources using Application Programming Interfaces (APIs) and technology platforms to develop a set of predictive algorithms that could simulate how a given strategy would impact Colombia over the course of a full year. For example, if officials were considering shutting down airports or travel between municipalities, the tool would show how many people would be affected, how quickly the disease would spread and the patterns of contagion that would result. As scientific research revealed new information about COVID-19 and how it spreads, the team updated the tools to reflect the findings and ensure their accuracy.





When tech meets human ingenuity

Algorithms also shaped the government’s lockdown strategy and decisions on when to reopen the economy. By combining data sources tied to consumer behavior, the simulator could show the financial impact of different approaches. For example, what would happen if the government allowed construction projects to continue during a lockdown? The simulation could estimate the likely spread of COVID-19 as well as calculate the amount of money the economy would generate from the projects and how workers would likely spend their paychecks. These insights delivered a granular look at how government decisions could play out, both for public health and the economy.

No matter how the data was modeled, the simulations were clear about one thing: wearing face masks would have the greatest impact in slowing the spread of COVID-19. To encourage citizens to adopt the practice widely and quickly, the government and ANDI launched a campaign to do three things: communicate the impact of mask wearing, help facilitate the new behavior and help establish it as a social norm. By helping create a unified message for citizens the campaign created a common language around the issue and highlighted its importance.

Next, the team came up with a plan to monitor open-source social media discussions to help identify places where additional warning messages about the dangers of COVID-19 could be deployed. With a coordinated message and targeted response, the communication campaign helped share advice that would keep people safe and the economy open.

A valuable difference

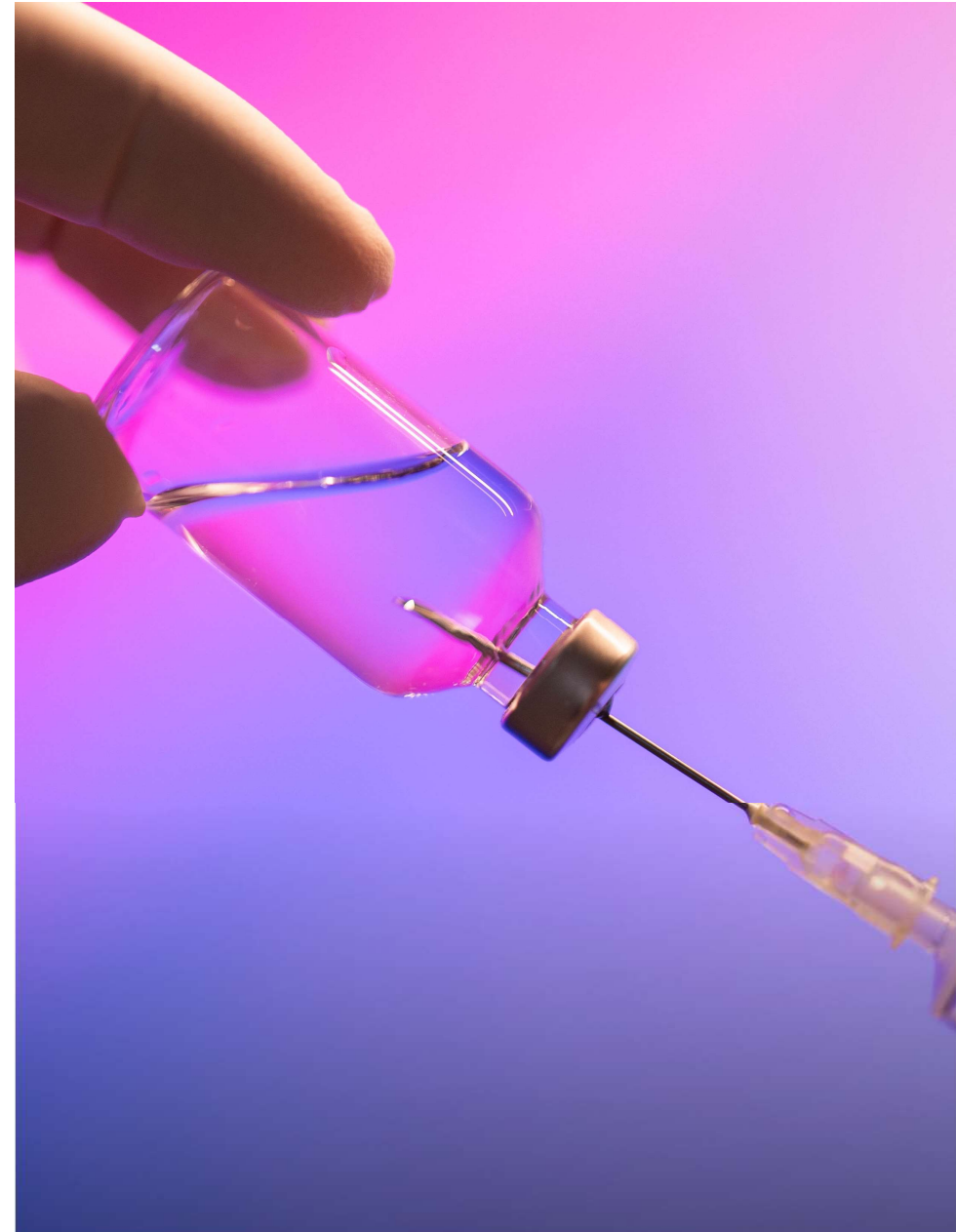
Science and strategy unite a nation

Over time, the team found that its simulators were three times more accurate than those of the Colombian National Institute of Health and other sources. The government used the insights to inform its strategies, while corporations used them to shape their network, supply chain and logistics strategies.

When vaccines became available, the tools helped determine which specific hospitals should receive them, how many and when. And the communication campaign that aimed to make face masks a social norm was so effective that the practice is still widely used around the country.

The innovative tools developed during the crisis continue to be useful in new ways: commercial companies are using the simulators to guide their business and community engagement strategies.

Today, Colombia is a success story. It has been ranked No. 12 in the world for COVID-19 resiliency, and No. 1 in community mobility, a key indicator of minimized disruption. The credit for the results goes to collaboration: it took a vast ecosystem of people and institutions to develop the solutions, and a full community effort to make them effective. The effort persuaded 877 corporations to unite behind official pandemic strategy. And the cooperation of the media industry, from providing free airtime for COVID-19 policy messaging to donning facemasks on-air, was integral to spreading the message. As Colombia moves beyond the pandemic era, one thing is certain: with innovative technology and community spirit, the country can overcome any crisis.



Disclaimer

Accenture is a leading global professional services company that helps the world's leading businesses, governments and other organizations build their digital core, optimize their operations, accelerate revenue growth and enhance citizen services—creating tangible value at speed and scale. We are a talent and innovation led company with 738,000 people serving clients in more than 120 countries. Technology is at the core of change today, and we are one of the world's leaders in helping drive that change, with strong ecosystem relationships. We combine our strength in technology with unmatched industry experience, functional expertise and global delivery capability. We are uniquely able to deliver tangible outcomes because of our broad range of services, solutions and assets across Strategy & Consulting, Technology, Operations, Industry X and Accenture Song. These capabilities, together with our culture of shared success and commitment to creating 360° value, enable us to help our clients succeed and build trusted, lasting relationships. We measure our success by the 360° value we create for our clients, each other, our shareholders, partners and communities. Visit us at www.accenture.com.

This content is provided for general information purposes and is not intended to be used in place of consultation with our professional advisors. This document refers to marks owned by third parties. All such third-party marks are the property of their respective owners. No sponsorship, endorsement or approval of this content by the owners of such marks is intended, expressed or implied.

Copyright © 2023 Accenture.

All rights reserved. Accenture and its logo are registered trademarks of Accenture.