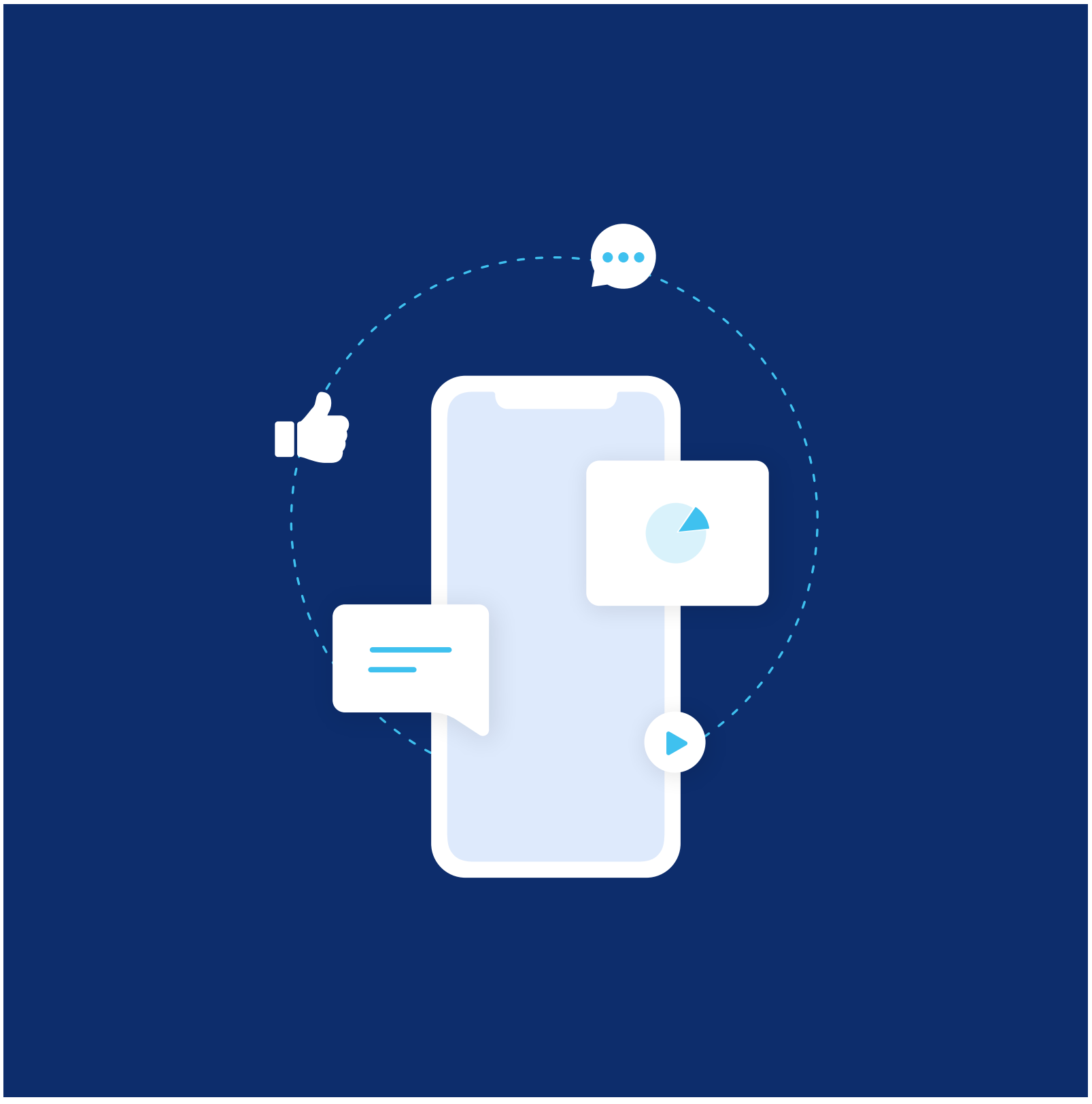
Whitepaper

Digital strategy in quarantine times



GeneXus™

When COVID-19 reached Uruguay, everything changed overnight. In the whirl of events, the country managed to take the necessary steps to tackle this complex scenario and avoid two grave dangers: 1) An explosive spread of the virus among the population, and 2) The collapse of the health system and communication channels with the population.

How did we face this challenge? By applying **flexibility and integration, combined with timely and fast use of the right technology**. Of the various factors that have contributed to Uruguay's success, this article examines the digital strategy adopted by the country, which combines different software-based elements to keep the dreaded COVID-19 exponential curve under control. Now, the question is how to deal with a potential virus resurgence, and the answer comes from **contact tracing technology** using Google and Apple's Exposure Notifications API.

When COVID-19 arrived in South America on an international flight, the Uruguayan government had already been monitoring the spread of the pandemic and was making preparations.

The arrival of the virus was inevitable, but in order to take care of society and prevent chaos, the first stage objectives were clear: communicate official high-quality information to the public, avoid the collapse of health care services, and reduce the congestion of health care providers' phone lines.

In this context and to cope with the coronavirus, in addition to encouraging hand hygiene, voluntary social isolation, and the use of face masks, a digital strategy was also developed that encompassed the following aspects:

- Consolidation and **integration into a single system with a centralized case base**, allowing for comprehensive follow-up and ensuring adequate care of suspicious clinical cases and transmission vectors.

- Interconnection between this system and the **different channels of communication** with the population. This integration included channels such as the call centers of health care providers (public and private), a special call center created by the Ministry of Public Health to address the coronavirus crisis, connection to the systems for sending notifications and the companies that carried out virus testing.

- The **Coronavirus UY** application development (and its publication in the stores) in record time, in addition to providing information and the epidemiological questionnaire, like the other communication channels, helps people access health services. Once they have been identified as a clinical case, people can enter their daily symptoms and

communicate via telemedicine (remote medicine service) with their health care provider's staff directly.

• Development and deployment of various control panels, both for the Ministry of Health and for health care providers across Uruguay. These independent **control panels** and work inboxes made it possible to assist and monitor patients, even from health care providers that were not fully computerized or that could not be integrated automatically.

• An additional digital channel was also developed and made available online: a **chatbot** on all the Uruguayan government websites, as well as those of public and private health providers. The chatbot, integrated with WhatsApp and Facebook Messenger, provides information about the disease and its spread in Uruguay, recommendations and a single epidemiological questionnaire created by the Ministry of Public Health and the Agency for the Electronic Government (AGESIC) in collaboration with Uruguay's private sector for people with possible symptoms.

This **digital strategy** implemented in an agile and timely manner is facilitating the organization of health care demand according to medical criteria. Assistance services to the public are optimized and, at the same time, thanks to computer technology, the medical staff is protected and the spread of COVID-19 is reduced. This has been made possible by the country's technological infrastructure, as well as the integration and volunteer collaboration between various public and private organizations.

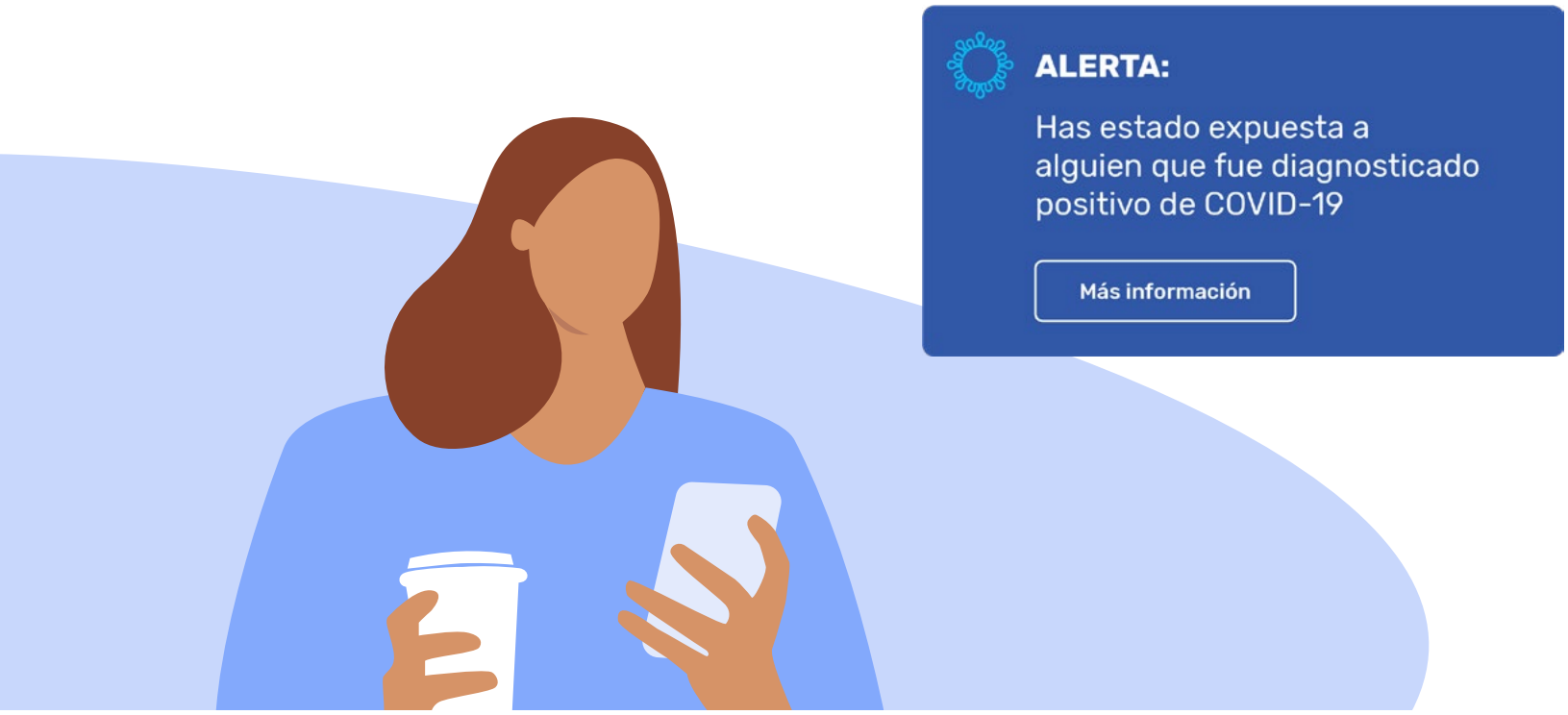
The **GeneXus technology** has enabled the development of a sophisticated system with multiple levels of interaction in record time –only two weeks– and has made it easier to implement it in an agile, flexible and scalable way to solve a global, mission-critical problem.

Now, this Uruguayan technology continues to support society in the gradual opening of borders for foreign tourists and residents in Uruguay, **including a new functionality for the Digital Border Declaration.**

Coronavirus UY APP integrates Google and Apple technology, and launches privacy-preserving exposure alert system which is optional and works via Bluetooth:

At present, **Coronavirus UY** provides a secure self-assessment mechanism for COVID-19 without overloading phone lines and avoiding movements of people, which is intended to improve care for those who suspect they have COVID-19. It also includes features such as **drive-through testing** to reduce the possibility of infection, and even offers telemedicine for those who test positive. The system optimizes communication between the population and health care providers by assisting citizens who require a medical evaluation.

All requests for information and case reports in Uruguay are handled through this system, which has reached almost one million people (27% of Uruguay's population). The application has already been **downloaded by more than 600,000 users in Uruguay alone.**



Exposure alerts:

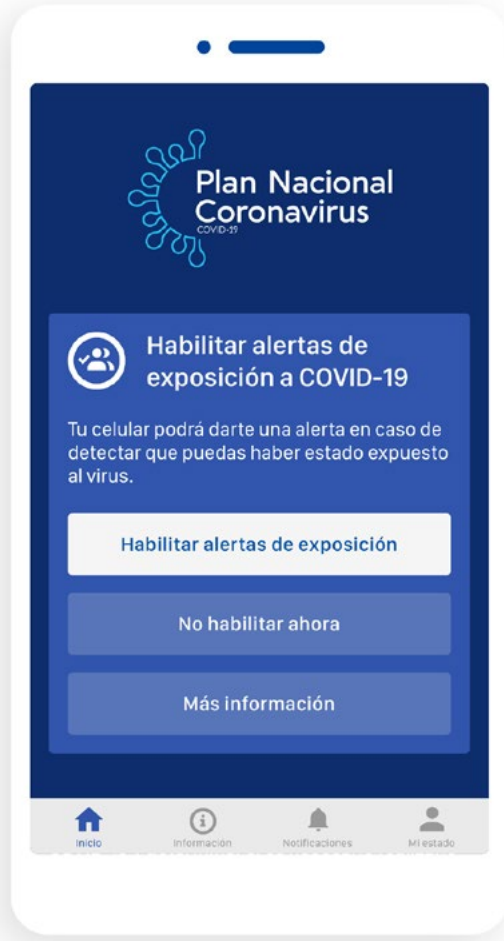
By turning on Bluetooth on a mobile device, it is enabled to receive alerts of proximity or exposure to a person who has been diagnosed with COVID-19. In turn, whoever has the virus will be able to collaborate –subject to their consent– by sharing that signal from their mobile phone (which does not send personal or geographic location data).

There is no exchange of personal data, as Bluetooth signals are only translated into an **"Exposure Alert"**. The user can decide whether to receive a signal indicating that he/she has come near a virus carrier, and then –in case of an alert– contact his/her health care provider through the App and request a medical consultation.

This prevention and alert tool is beneficial for the population; in addition, for those who know they have coronavirus, it is a commitment to social responsibility as well as an excellent way to help stop the spread of the pandemic.

It should be noted that **information is totally private** and personal data is only centralized in the Ministry of Public Health when the user enters a request for consultation and diagnosis.

“Many have the chance to benefit from the system, but we owe this especially to a much smaller subset – those who collaborate when the time comes. They are asked for permission to share, anonymously, that they are vectors of contagion. It is anonymous and confidential, but they will always know that they have chosen to help others. If some devices send their owners an alert that they would otherwise not have received, that is already something positive. If a user receives an alert that was not really necessary, the worst that can happen is that they make a consultation, or perhaps get tested, and are no longer considered a possible carrier. There is much to gain and little to lose,” states Gastón Milano, GeneXus CTO.



This new functionality has been developed with **Apple and Google technologies integrated into the Coronavirus UY Application**. Uruguay is one of the first countries in the world, and the first in Latin America, to be able to bring this advanced functionality to its population.

«The more people who participate, the more chances we have of receiving alerts and helping each other.»

Gastón Milano. GeneXus CTO.

COVID-19 Exposure Alerts using Bluetooth Low Energy (BLE):

• This feature requires explicit user consent.

• It doesn't collect or use location information from your phone.

• Codes issued via Bluetooth do not reveal the user's identity or location.

• The user decides whether to share information, as well as the data to be shared.

• People who test positive are not identified to other users, Google or Apple.

• The information will only be used by health authorities for managing the COVID-19 pandemic.

• It doesn't matter if you have an Android phone or an iPhone –it works across both.

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can do the same for your company.

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