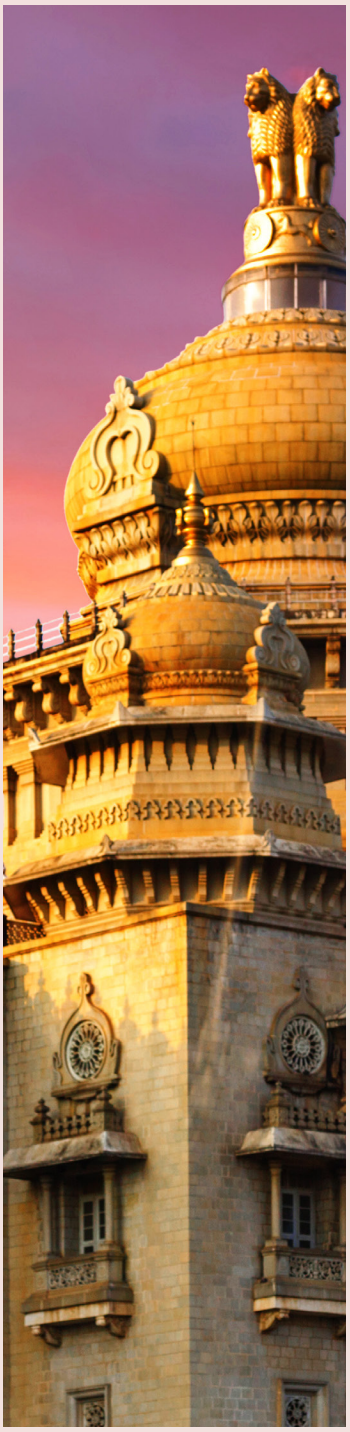
CASE STUDY



A LEAP BEYOND THE USUAL – INFOSYS BPM'S CRITICAL ROLE IN KARNATAKA'S FIGHT AGAINST COVID

Abstract

This is a story of mutual collaboration and empathy. This is the story of digitization, analytics, outreach, information management & reporting all coming together to deliver a complex program. Infosys BPM pooled in the collective strength of India's IT and BPM companies, medical workforce, and the Government of Karnataka to design, develop and execute a complex COVID-19 citizen response system for the state. This is the story of business beyond the usual.

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The Build-up

Since the turn of the new year, countries the world over have been dealing with COVID-19 and its implications. As we first watched with some curiosity, then with mild concern, and finally with outright horror, as a few European countries began to take stringent action, India joined in the global response as well.

In a true sense, India's response to COVID-19 began in the second week of March with extensive testing of foreigners entering the country. The Government of India (GoI) adopted a simple procedure of screening entrants for COVID-19-like symptoms at immigration points and followed up aggressively on their status through a proactive contact program that monitored their daily health status. Those individuals showing concerning symptoms were then put into graded isolation programs in GoI identified hospitals and ICUs.

However, as the week progressed, it became clear that these measures are not going to suffice. Beginning 16th of March, various parts of the country began to go progressively from a state of "encouraged social distancing" to a full "lockdown", with citizens being asked to stay indoors. Office commute, business travel, leisure sojourns and casual meetings, all came to a halt by 19th March. At least officially.

The State Response

- Despite our progress, India remains a country with meagre healthcare infrastructure. The exponential rate at which COVID-19 was impacting people and the types of treatment it demanded was a great cause of concern. Rather than waiting for the disease to strike, regional governments decided to take action proactively and avoid a "shock and awe" scenario.
- The southern state of Karnataka and its capital city Bangalore (Infosys BPM's HQ city) was especially vulnerable. Bangalore, and Karnataka in general, supports a large IT and industrial population, and therefore, it is conducive to the spreading of a COVID-19-like pandemic.

The Government of Karnataka (GoK) swung into action and immediately constituted a two-phased program:

1. The first program (PRG1) was conceptualized on 9th March and was designed to contact, trace, and contain likely infections arising from travelers coming in from Bangalore and Mangalore airports. The objective of this program was to keep track of the health condition of all travelers arriving at these ports, on or after March 1st, and to advise/take appropriate action in order to prevent them from becoming 'contagion spreaders'
2. The second program conceptualized on 5th April with similar objectives as that of PRG1, but with a state-wide reach, is slated to go live on 21st April. This program has been named "Apthamitra".

Infosys BPM has played a key role in setting up both the programs for the GoK.

How Infosys BPM helped:

Infosys BPM worked with the GoK to design a system of digitization and data capture, record keeping, and intelligent reporting

Infosys BPM designed and built the "Apthamitra" consumer app, which is meant to help citizens in logging their health data and gaining useful information, including their personal risk status and nearest health centers

Infosys BPM Marketing team was called upon to present the Apthamitra app to the larger public

Put together a CRM (Citizen Risk Management) system, which can capture the relevant data, display it, review it and analyze it in real-time, to be used by frontline medical responders

Worked with the health department to design a training curriculum for doctors and nurses who have been enlisted to serve under the program

Setting the Foundation

Infosys BPM was called upon with the following requests on 14th March, for the PRG1 program:

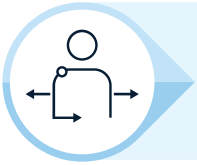
- Digitize data of all travelers who entered the state on, or after, March 1st
- Put together an outreach program to connect with the identified travelers and monitor their health status on a continuous basis for 14 days
- Report back on the health status of these individuals to state government authorities
- Coordinate actions with other stakeholders/organizations in the program for effective and timely on-ground action

Infosys BPM's response

- We immediately put together a task force comprising several individuals with proven skillsets in call center and digital operations
- The task force was headed by two senior leaders with a strong track record and a tenure of over 6 years with the company

- First, we worked with the GoK to design a system of digitization and data capture, record keeping, and intelligent reporting. Upon agreement, this system was put in place through a combination of information systems and Kanban-type out-of-information-system mechanisms to get the process working
- We mobilized 200+ people from our workforce to engage in outreach operations and also enlisted third-party organizations to perform dialer-driven outreach
- The citizen connect process was a combination of inbound and outbound methods. Citizens were first contacted through an IVR and apprised of the state's efforts with an advice to call back if certain conditions were to develop. For citizens who were either unable to proactively contact us, or were uncooperative, a process was devised to work proactively with on-field GoK personnel. Here, Infosys BPM was in charge of providing details on "what to do" and "why to do"
- Infosys BPM started the program immediately on 15th March, with full capabilities of digitization, outreach, information management, analytics and reporting going live on 19th March
- Subsequently, Infosys BPM was given the charge of "tracing and informing" all individuals who might have come in contact with an identified COVID-19 case in the state. This was an enhancement to the initial scope and was handled with minor modifications to the designed system of operations and information

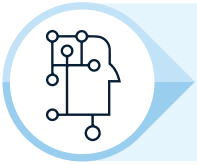
As part of the program -



Infosys BPM reached out to more than 82,000 citizens proactively. 41% of these were issued quarantine advice

We have been successful in eliciting cooperation from over 97% of the citizens through effective, timely, and empathetic conversations regarding the designated containment procedures, both individually and socially

We connected with and helped 2,400 citizens with level-2 calling and monitoring, of which there were 2 positive cases of COVID-19



We reached out to an additional 6,000 contacts, of which we found 11 positive cases

Infosys BPM was able to 'agile' implement a program from idea-to-action within 96 hours, addressing all activities such as designing, detailing, information system building and personnel training

Broadening the Scope - Apthamitra

The Apthamitra program followed as a direct consequence of the PRG1 effort. To recap, India as a whole and Karnataka as a state was irreversibly heading towards a lockdown by 19th March. By 23rd March, almost all business establishments were already in a state of packing up, while the GoK declared a lockdown with instructions to all citizens (sparing a few essential services) to stay indoors and to strictly follow social distancing norms. This move was necessitated by the realization of non-availability of a COVID-19 vaccine. A near-total lockdown ensued from 24th March.

Yugadi of 2020 (the Kannada new year) on 25th March was like none other before it, with everyone cooped indoors. Companies, including Infosys BPM, got busy moving employees to a work-from-home (WFH) model and we were successful in enabling almost 90% of our workforce to work from home by the end of March.

By the 5th of April, the GoK seemed to have a definite idea of what the containment and defense plan for Karnataka was going to be. It read something like this:

- Impose a complete lockdown from 24th March to 20th April (as per the directive of the National Ministry of Health)
- Allow the infected people to come out for assistance and treatment during the lockdown period and quarantine them effectively
- Work with the affected and draw them into the state healthcare system, preventing secondary spread
- Vociferously educate and encourage people to follow social distancing and containment rules
- Monitor the growth in numbers throughout the state at the most granular level possible and stop the spread of "hot spots"

This comprehensive defense program was named "Apthamitra," translated to 'your close friend' in the local Kannada language. The intended modus operandi of the response program by GoK is to popularize an inbound helpline, which the citizens of Karnataka can use to protect themselves against COVID-19. The helpline is to be publicized through a comprehensive media strategy involving TV, radio, print, SMS, a play store app, and other social media channels.

- Citizens reveal limited elements of their personal health and non-health related information while accessing the Apthamitra system through an app or an inbound helpline number
- Basis this information, a COVID-19 risk assessment is performed and citizens are advised to either go on self-quarantine, visit a state health clinic, or avail emergency help. In specific cases, the Apthamitra system will itself arrange for help on behalf of the citizens
- The system will integrate and interact closely with other existing systems, such as the state hospital system and the ambulance system, to assist citizens
- Additionally, the system is designed to enable outbound channels in order to proactively monitor citizens who display a range of at-risk characteristics
- Through the analytics that the system presents, it will be possible to identify hotspots and create containment zones as small as few hectares in area. These zones will then be 'hermetically' sealed so as to keep the disease contained. The expectation is that once the disease is contained in several such zones (with due help from law enforcement and other elements of the GoK machinery) further infections can be prevented and healthy, no-risk citizens can resume economic activity.

Infosys BPM took the center stage in this massive effort. The origin of this program was the GoK reaching out to Infosys BPM with a request to capture data associated with the program. In return, Infosys BPM proposed a much larger scope of involvement to the GoK, which was accepted.

Infosys BPM engaged with GoK for the program in the following manner:

- We started designing the processes of outreach, diagnosis, treatment (with the actual treatment itself being handled by the GoK's health department), and subsequent monitoring through continuous outreach and analytics
- Infosys BPM put together a consortium of 9 BPM companies with operations in Karnataka to conduct both inbound as well as outbound operations. The telephony architecture will work seamlessly across 9 different brands and models of telecom equipment
- Furthermore, Infosys BPM engaged with all mobile carriers present in the state to enlist their participation as component executors as well as service providers in the exercise. This was crucial to track down and engage all potentially at-risk citizens on a real-time basis
- Infosys BPM put together a CRM (Citizen Risk Management) system, which can capture the relevant data, display it, review it and analyze it in real-time. This system is designed to be used by frontline nurses and the second-line, which is constituted by a team of telemedicine doctors
- Infosys BPM designed and built the "Apthamitra", a consumer app, which is meant to help citizens in logging their health data and gaining useful information, including their personal risk status and nearest health centers
- Infosys BPM worked with the GoK to define a media and telephony-based citizen outreach strategy. Infosys BPM participated right from designing the print ads, to disbursing SMS messages, to enlisting celebrities to deliver appropriate messages, and so on, followed by a geography-based rollout strategy of the message
- We worked with the health department to design a training curriculum for doctors and nurses who are enlisted to serve under the program
- Technologically, we have created a system that allows both work-from-home and on premise models to coexist. Needless to say, this system meets all the demands of modern day scalability and security requirements
- The system will be able to convey messages to citizens in a targeted manner, limited to a cell phone tower, ward, taluka, village or a district, in order to keep the messaging relevant, and thereby eliciting greater cooperation from the general public
- The system can seamlessly transfer data to the state's hospital and emergency response systems in a two-way mode
- All processes and systems developed by Infosys BPM will meet stringent regulatory standards when fully operational

As a result of this exercise

We expect to reach and gather accurate health status of all the 64 million citizens of Karnataka, within 8 weeks

Identify, advise, isolate and cure infected persons BEFORE they spread the disease in an uncontrollable manner

Prevent the state's health machinery from being overwhelmed

Bring down the costs of containing the disease (excluding indirect economic costs) by up to 90%, by focusing on prevention, rather than on cure alone

In summary, it is fair to say that the Apthamitra response system is one of a kind – a system that utilizes the power of technology, consortium building and public-private partnership, to overcome COVID-19.

Epilogue

The lockdown in Karnataka has been extended to 3rd May. This extension provides a little more time than was originally planned for the program to go live. Infosys BPM's Marketing team has also worked tirelessly with the GoK in order to popularize the helpline service among the larger population of the state. Infosys BPM could not have done this alone, without the collective strength of India's IT and BPM companies, medial workforce, and the government machinery.

The Apthamitra system stands ready to go live and provide a critical service to the citizens of Karnataka from 21st April. From building the concept to going live, in 15 days flat.

For more information, contact infosysbpm@infosys.com

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