



## How India Repurposed 'Smart Infrastructure' for COVID Control

**Ms. Karuna Gopal Vartakavi**

**President, Foundation for Futuristic Cities  
National In-charge, BJP Women Policies & Research  
Independent Director, Engineers India Ltd**



**I**ndia attracted International mindshare for managing COVID 19 effortlessly while many developed nations succumbed under its pressure - despite limited resources and with a large population of 130 crore, India has indeed fought the Covid-19 pandemic valiantly and in the best possible manner.

While there have been many strategic and tactical interventions by the Modi led government, one needs special mention - that is 'Repurposing of Smart Infrastructure in Cities' especially those in the race to become SMART.

Integrated Command and Control Centres (ICCCs) are a key component of the Smart Cities Mission (SCM) launched by the Prime Minister Modi in 2015. SCM with an aim to develop 100 citizen-friendly, self-sustainable cities is indeed the fastest among government flagship programs. Of the 100 proposed smart cities 80 have already set up Integrated Command and Control Centres.

Designed for real-time monitoring of water, power supply, sanitation, traffic movement, buildings and Internet infrastructure management, the ICCCs are meant for managing city services seamlessly.

But when COVID 19 threatened to disrupt life in cities, these command Control centres were REPURPOSED as COVID WAR ROOMS! They became 'Covid Control HUBS' and 'Epicenters of Infection Management'. This Iconic Smart Infrastructure helped cities fight the pandemic- through Information Dissemination, Targeted Communication, Predictive Analysis and Pre-Emptive Action.

### REPURPOSE for a Purpose

When COVID 19 started spreading ferociously across the nation, officials at the helm of Smart Cities Mission explored the possibility of leveraging the existing 'Smart City Infrastructure' to respond to the deadly pandemic. They quickly converted their Integrated Command control Centres (ICCC) as COVID-19 War Rooms.

Then priorities were mapped out. Highest priority was given to tracing and tracking the infected patients and their contacts to prevent the spread of infectious disease. Healthcare and Patient Tracking Dashboard was developed to provide real-time information on COVID-19 related cases, testing and healthcare arrangements. All hospitals were linked to the War Room dashboard, where hospitals update information in an online form on a daily basis.

Cities were able to keep track of containment areas with the help of a GIS based information system. The location-based information system was used to GEOTAG people who have been home quarantined & identify last location of COVID-19 positive persons with different 'colour coding'. Then cordoning-off of area, lane closures were planned which was all visible on the COVID-19 GIS Dashboard. Patient activity level was also monitored through the system, health officials used this data to identify locations for immediate spraying of disinfectants and deployment of special task force for door-to-door campaigns. These War Rooms across the country recieved real-time updates on positive cases including active (14 days) and passive (28 days) home quarantine cases.

Dashboards for city surveillance setup at the COVID-19 War Room were jointly monitored by a dedicated team of municipal staff & city police. Several 'point-tilt-zoom' surveillance cameras, installed at all locations across city jurisdiction monitored the activities from the ICCC. The feed from the CCTVs was used for video analytics, based on which the team provided alerts in case of crowd gathering. Cities have also put-in stringent systems, with checks in place that generate alerts and notifications when lockdown protocols were violated. Special task forces constituting of city police, local health workers and city municipal authorities used to be alerted from the COVID-19 War Room to take appropriate steps.

From developing GIS based mobile applications to the installation of Dashboards at COVID-19 War Room, Indian cities have been able to effectively monitor, track and manage their response to the COVID-19 situation testing and quarantine, containment, health advisory, essential services, drone surveillance in COVID-19 hotspots became seamless.

### In a Nutshell

- Covid War Rooms brought all emergency services and their pandemic response activities under one roof enabling cities to effectively coordinate and monitor the situation.

- Smart Cities collaborated with medical practitioners both from government and private sector in the city to provide online medical consultation facilities to citizens. Several states including Karnataka, Madhya Pradesh, Gujarat and Maharashtra deployed doctors, para-medical staff, police and experts in a different fields took calls from citizens and answered their queries.
- The integration of various technologies like CCTV monitoring, Drone Surveillance, GIS mapping, Real-time Dashboard and Analytics has helped in tracking, testing, monitoring, isolating, quarantining and treating the patients at the earliest, thereby helping minimise the spread of the virus.
- AI (Artificial Intelligence) based real-time analysis of surveillance footage for social distancing violations; to alert police for fast action
- Drone surveillance in city's hotspots coupled with PAS announcements to ensure complete sealing as required

### Future Implications

Handling of the COVID-19 pandemic has helped Indian cities assess health and efficiency of their own Municipal Infrastructure, Collaboration between city agencies, Technology readiness and city govt Responsiveness during an emergency of this scale.

One can safely say that Indian Cities are now better prepared to manage public health emergencies in future. The use of Integrated Command and Control Centre has been a game changer. Smart Cities across the country with ICCCs will play a key role in city governance, management of disasters and public health emergencies in future . The use of data analytics will surely help cities move from reactive governance to proactive, responsive and data-driven governance.

As the integration of COVID-19 related services and other essential municipal services through a single Tech platform led to efficient and effective Inter-departmental coordination and data-driven decision making, the importance of Technology in fighting Global crises such as pandemics cannot be over emphasised.

As the Nation readies for a NEW INDIA, the proposal to link Integrated Command Control Centres to the Home Ministry's Crime and Criminal Tracking Networks will offer another great opportunity for delivering Justice to citizens.

A few examples:

In **Varanasi** the COVID-19 War Room had District Administrative Officials, officials related to food and civil supplies, Development Authority officials for handling distribution of cooked food, Nagar Nigam officials for regular civic services, police officials for monitoring lockdown violations, health officials for telemedicine and other COVID-19 related issues, and general complaints/ grievances redress staff. Bringing all the stakeholders under one roof has facilitated better coordination, efficiency, and effective resolution of public grievances. GIS-based smart monitoring of delivery of medicines, grocery, and vegetable vendors, enabled mapping of covered and uncovered areas of the city.

**Jabalpur**, dedicated Rapid Response Team (RRT) and Mobile Action Unit (MAU) were present on ground ward-wise who coordinated with officials present at ICCC regarding screening, ambulance, quarantine etc.

**Ujjain** ICCC, doctors were stationed at the centre for 24 hours duration to take video conferencing/ telephone calls from the citizens to give appropriate advice based on the symptoms. 40 Medical Mobile Units (MMU) were operationalized to distribute medicines to people based on prescriptions by doctors.

**Pimpri-Chinchwad** a key industrial hub in the state of Maharashtra was one of the first declared COVID-19 hotspots having registered its first confirmed COVID-19 patient on 3 March 2020. Pimpri – Chinchwad for over two decades has been in the fore front of urban reforms and its no wonder

the city quickly dedicated a helpline called SARATHI where citizens could request assistance for any of the essential goods and services. All calls received through the helpline were saved as an audio file and tagged with respect to date and nature of request, responsible department and zone, status of closure of request, etc. The COVID-19 War Room was used to ensure that all questions and queries received through the helpline were responded by trained professionals. A dashboard of SARATHI has been set up at ICCC, which provided analytics on: Major request/ complaints from citizens, Request/ Complaint redress status, Zone-wise request/ complaints, etc.

**Bengaluru**, in partnership with Indian Institute of Sciences and IT Industry, Smart City developed predictive analysis of positive cases and accordingly prepare for the quarantine centres, hospital beds, medical infrastructure, etc. The medical staff was trained. Smart cities infrastructure helped the cities arrange trainings, as new guidelines/ treatments/ protocols kept changing as the disease progressed with different variants. Movement in Containment Zones and home quarantine is tracked through mobility data from phones, GPS and Social Media while Data Science Consortium, a non-profit, was involved in developing “predictive models,” to determine how to open the city's economy post lockdown.