Government of Andhra Pradesh State (India) uses real-time governance to transform citizen services and improve quality of life

**Background**

The Government of Andhra Pradesh State (AP State) is India’s eighth largest in terms of area, features the second largest coast line, and is home to 53 million citizens. It has embarked on a journey of consistent double-digit growth, with plans to emerge as a developed state by 2029. Andhra Pradesh has been rated as the top state in the country for ease of doing business by World Bank, with the government of India providing best-in-class sector policies, stable industrial relations and an investor-friendly business environment. The State offers quality power, robust industrial infrastructure, large industrial land banks, excellent connectivity and availability of a skilled workforce – ingredients of a vibrant and globally competitive investment destination.

AP State has a history as a leader in adopting technology to benefit its citizens. Chief Minister (CM) Mr. Nara Chandrababu Naidu has been compared to a CEO rather than a political head of state in his governing approach. A key element of his management practice is the CORE (CM Office Real-time Executive) dashboard that provides a real-time snapshot of the performance of various departments across the government. This online dashboard, open to the public, promotes transparency and accountability. It monitors departments and services, and identifies areas for improvement, with an emphasis placed on automation and computerization.

**Business Challenge**

CM Naidu wanted to elevate his government’s performance, integrating data from Internet of Things (IoT) devices, surveillance cameras, image and video analytics, and current department data to establish real-time governance (RTG) in the state. Naidu outlined three focus areas for improvement:

- **Public Safety and Welfare:** The government wanted to improve the lives of citizens, leveraging advanced technology, surveillance cameras, video analytics, crime analytics and social media information. The ultimate goal is to make Andhra Pradesh one of the safest places to live in the world.

- **Data and Analytics:** The state planned to gather a variety of information from devices such as automated weather stations, soil moisture and nutrient sensors, fingerprint and ID devices, RFID tags from stock yards, and from other systems of record across 30+ state departments. With this data, the state would use real-time predictive and prescriptive analytics to deliver both cost savings and performance improvements.

- **Disaster Relief and Management:** AP State is prone to heavy rainfall and flooding from storms, although a few of its districts suffer from drought. Forest fires are common during the harsh summers. The new RTG center would allow for timely warnings to citizens about looming calamities, and coordinate relief efforts when disaster strikes.

**Summary**

**Background**

- India’s 8th largest state in terms of area, home to 53 million citizens
- On a journey of double-digit growth and development
- AP State’s Chief Minister promotes technology usage to benefit citizens

**Challenge**

- Establish a Real Time Governance (RTG) center to:
  - Improve public safety and welfare
  - Gather data on weather, soil, crops, livestock and more, applying analytics to deliver cost and performance improvements
  - Issue warnings and coordinate relief efforts when natural disasters occur

**Solution**

- Hitachi Consulting designed and developed the RTG center that monitors activity across the 13 districts, gathers data from cameras and sensors, integrates information from 30 departments, and coordinates responses to emergency events
- Hitachi Visualization Suite incorporates detailed disaster mitigation plans
Solution
AP State sent a team to the US to research best-in-class e-government systems, and then searched for a provider to deliver such a system to them. Hitachi was selected as the provider with the solution that could satisfy its objectives.

Hitachi Consulting ran the design, development and rollout of the RTG center, establishing and then coordinating across a partner ecosystem to build this solution. Multiple workshops were conducted to document requirements and customer pain points, and to outline how a central command center would fulfill the state’s goals of better meeting its citizens’ needs.

The Andhra Pradesh RTG center went live after a year-long development project. Hitachi Consulting provides ongoing management services for the equipment and partner ecosystem involved in running the RTG.

The RTG center contains a Command Control Center (CCC) and a war room. As the heart of operations, the CCC seats 34 operators and includes an 85-foot video display wall. The video wall administrator decides what content is displayed there. Any operator’s screen can be pushed onto the video wall, and the administrator can access a vast array of other content that can be sent to the wall. The war room, a smaller area that seats 10-12 people, is typically used during critical events for disaster management.

“We are using the Hitachi Visualization Suite at the Command Control Center to improve monitoring of emergencies in real time.”
- Mr. Nara Chandrababu Naidu
His Honorable Chief Minister, Government of Andhra Pradesh

The CCC operators review and monitor activities and inputs from the local districts. The government installed an initial 5,000 surveillance cameras across AP State, and 22,000 cameras will be in place by June 2019. Operators coordinate with officials in local districts, and the CCC issues orders in case of emergency events. If required, the officials monitor the situation at ground level with inputs from local drones and surveillance cameras.

A key component of the RTG center is the Hitachi Visualization Suite (HVS). HVS incorporates detailed disaster mitigation plans, integrates other real-time data, and displays these on a single pane of glass that enables timely decision-making. While there are detailed disaster plans at the state, district and city levels, Hitachi Consulting created a solution that enabled disaster management and relief operations to be overseen from a centralized command center. The system now coordinates disaster response across geography and public service departments to improve efficiency and effectiveness.

For example, in the event of an approaching typhoon, the system allows officers to zoom in on at-risk areas to view details from the villages that would be affected, such as their human and livestock populations, local disaster relief officials with contact information, and shelter locations. Real-time information about predicted wind speeds, rain, ground water, flood levels and villages likely to be inundated can be evaluated using what-if scenarios. Current locations of ambulance and flood-relief vehicles, surveys of affected areas using surveillance cameras, and drone-captured videos help in quickly deploying the right resources. Post-disaster, the extent of crop destruction can be analyzed using information about crop-sown data, real-time data on rainfall, soil moisture and other parameters. This analysis validates the need for flood relief to farmers whose crops were affected.

Value Delivered

Public Safety and Welfare
- New technology improved processing at ration shops. People report they used to stand in line for hours and now complete transactions in 5-10 minutes.
- Public safety is improving, and the government reports a reduced crime rate. For example, the RTG center helped police rescue an infant abducted from a hospital within 48 hours. CCTV footage identified the suspect, and police apprehended her. In another incident, an accused criminal was captured within hours of the event, using data sent to the RTG center from a monitoring drone.

Data and Analytics
- The RTG center collects and consolidates data from all government departments, to create one data set that can be used by any department. “We now have a single source of truth,” reports Mr. Babu A., CEO, Real Time Governance, Andhra Pradesh.
- Since farming represents a major segment of the population, numerous new programs are underway, designed to help AP State’s farmers.
  - Drones apply pesticides, providing relief to farmers and helping avoid work-related sickness.
  - Soil health cards created from sensor data on nutrients, moisture levels and other parameters enable the government to recommend what farmers should plant for best results.
  - Analysis of activities and data identifies how to help farmers increase income, with a goal of doubling their income.
  - Fertilizer usage and crop production data helps provide guidance to farmers on best practices and recommendations for future planting.
Examples of other types of data analysis include energy usage, monitoring of various statistics and effectiveness of services provided.

Disaster Management/Relief

- When a boat with 30 passengers capsized on a lake, the RTG center coordinated the rescue response. This included interacting with the local rescue team, directing ambulances to the rescue site, lining up available doctors, identifying hospitals with available beds to receive the injured and tracking the emergency rescue vehicles.
- When the typhoon season arrives, the RTG center will identify flood areas and manage evacuation of people and livestock in an orderly manner, to lower the loss of life from the storms.

Conclusion

The AP State RTG center integrates technology and administration for the benefit of its citizens. It consolidates data from all government departments to create insights that transform citizen services. Local command centers are being created in the 13 districts and will be integrated with the RTG center. AP State’s focus is to use technology to reach and serve “the last man.” With the RTG center, AP State is enabling more efficient and optimal ways to help citizens prosper, receive government services, and more quickly recover from natural disaster events.

“Because of Real Time Governance, decisions are very, very fast. There is transparency. There is accountability. There is saving of resources.”

- Mr. Nara Chandrababu Naidu
  His Honorable Chief Minister, Government of Andhra Pradesh

About Hitachi Consulting

Hitachi Consulting is the global solutions and professional services organization within Hitachi Ltd., a global innovation leader in industrial and information technology solutions and an early pioneer of the Internet of Things. Hitachi Consulting is a business integrator for the IoT era and a catalyst for digital transformation. Using our deep domain knowledge, we collaborate with clients to help them innovate faster, maximize operational efficiency and realize measurable, sustainable business and societal value. As a consulting-led solutions company, we can help you leverage data as a strategic asset to drive competitive differentiation, customer loyalty and growth. To learn more, visit www.hitachiconsulting.com.

“Hitachi was helpful bringing in the center in the shortest possible time. Now, our 30 departments are synced with the Real Time Governance Center.”

- Mr. Babu A.
  CEO, Real Time Governance, Government of Andhra Pradesh