Hexagon keeps traffic moving smoothly in São Paulo

Traffic Engineering Company (CET) | *Brazil*

The largest city in Brazil, São Paulo, experiences the fourth-heaviest traffic in the world. With 17,700 kilometers of roads and 7.8 million vehicles, combined daily traffic congestion can exceed nearly 300 kilometers. Nine hundred vehicles are added to São Paulo's streets each day.

Major sporting and entertainment events, such as Carnival, put even greater pressure on the city's traffic system. Nearly 1 million people attend this annual event alone.

The city's Traffic Engineering Company (CET) is responsible for managing this massive traffic flow. Seven hundred field agents per shift respond to accidents, enforce parking laws and perform other duties needed to serve the city's more than 12 million residents, plus millions of tourists each year.

Meeting growing demand

Tasked with responding to more than 13,000 traffic incidents each day, CET's old dispatch system couldn't keep pace with the requirements of a major urban traffic network. The in-house, tabular system could only register 1,200 daily incidents, with no map capabilities to

manage location-based resources. All communications with the field occurred via radio, and some information was recorded on paper.

"It was very basic – a standalone system," said Olímpio Mendes de Barros, CET's operations manager. "Dispatchers had no visibility to agents in the field in real time, and it took five days to deliver reports to decision-makers."

CET's goal was to deploy a new system that would improve response times by georeferencing information and automating complex workflows, including interaction with existing systems – CET's legacy systems and those of other agencies. CET deployed Hexagon's computer-aided dispatch (CAD) system at the heart of a new traffic operations center to improve planning, operations and analysis.

Better data management and response

"The solution implemented here in the operations center at CET has helped us accomplish countless innovations and the proper operation of São Paulo's traffic," said de Barros.

The system has enabled CET to transmit incident information in real time between the operations center and field agents. Dispatchers can visualize events georeferenced on a map and manage resources more efficiently. Residents can call CET directly to report traffic light malfunctions, accidents, potholes and other issues. Incident data is also available to 15 other CET facilities across the city thanks to Hexagon's key application for accessing real-time incident information via the web.

The solution has yielded tangible results. For example, the time required to repair a traffic light, which is essential to safe and smooth traffic flow, has decreased from hours to a few minutes. CET also deployed geospatial analysis tools to unlock and analyze data to report on previous events and improve future incident management.

"CET uses thermal reports, georeferenced reports of occurrences and team activities, which allow a more qualitative analysis of the service being provided," said de Barros. "Being able to organize high volumes of data systematically and produce georeferenced reports is what allows CET to better plan its future actions."

Building a smart city

To keep up with growth, CET continuously seeks out new innovations in partnership with other organizations. Its staff is currently working with the municipal Department of Transportation to implement the foundations for a smart city. This would create a large, integrated network of data transmission, connecting all equipment, traffic lights, cameras, height detectors and message signs.

It also shares its experiences with other agencies. CET has garnered the attention of transportation management agencies worldwide that have visited CET's operations center. Efforts like these pave the way for future growth while avoiding unnecessary interruptions to safe and efficient traffic flow, which is important in a city the size of São Paulo.

"Traffic in São Paulo is quite complex," said de Barros. "People feel CET is a company that provides good services. The operations center using the (Hexagon) system is a major part of that success."

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> **Olímpio Mendes de Barros**
> Operations manager
> São Paulo Traffic Engineering Company (CET)