

CMS Traffic & Transportation

Solutions Division

Overview

With the exponential rise in vehicular traffic, traditional traffic control mechanisms are not well equipped to contain congestion levels in cities across the world. Government agencies, nowadays, are increasingly switching to Intelligent Traffic Systems (ITS) to regulate traffic and improve transportation infrastructure in urban city centers.

ITS has capabilities to integrate various devices and provide a robust ecosystem for generating vast amount data related to vehicles and their movements.

The demand for traffic data analytics has propelled significantly in the last decade – resulting to the stupendous growth of traffic management market in developed and emerging countries. According to the global market research firm Markets and Markets, the overall traffic management market stands with a total revenue of \$2,580.0 million in 2013, and is expected to grow to \$12.69 billion at a CAGR of 37.5 per cent from 2013 to 2018. The report also states that Dynamic Traffic Management Systems (DTMS) will account for the largest share in the traffic management the growth is primarily due to high adoption of smart cities, transportation solutions, amongst small as well as mega cities. Moreover, Intelligent Traffic Systems is expected to proliferate in India in a big way as the new government at the centre has plans to build 100 new smart cities across the country.

Industry Challenges

- Although traffic data analytics has a long way to go in India, the biggest challenge before government agencies in India is integration of data generated from different components of traffic management systems. These are few major hiccups a government authority faces when they switch from a traditional traffic set up to a Dynamic Traffic System:
 - Various Formats: There is a need for a unified traffic management framework, which can process huge volumes of data in the form of statistics, charts, pictures, audio, videos and tweets.
 - Different Sources: Vehicle congestion related data comes from three sources - Crowdsourcing (mobile operators) like GPS, Bluetooth, tweets and other social networking; Vehicle to Vehicle; and the third one is vehicle to infrastructure communications.
 - Multi-functional applications: Traffic-related applications are becoming multi-dimensional as they are no more designed exclusively for regulating traffic congestion. Software experts are building traffic-related technologies that are meant for security and surveillance, pollution check, consumer behavior and market research.
 - Copious amount of Data: Enormous amount of data storage ranging in the order of yottabytes will be a big headache for traffic authorities in future. Efficient analysis of the data coupled with the ability to store them safely is going to be the critical factor in traffic management.

To combat the above-mentioned issues, cities around the world are looking to Big Data and services like Hadoop Cloud to monitor, evaluate and effect changes in real-time to affected areas.

Solutions Offered by CMS

Unified Dashboard – Traffic Control Center

CMS provides traffic regulators with a Unified Dashboard that can combine traffic data from multiple sources to give regulators a bird's eye view of traffic scenarios across major nodes in a city. This data is gathered from a number of data points which send out data of different kinds like CCTV video footage, GPS and Bluetooth based Journey measures and more to create congestion maps that allow for surgical tackling of congested areas.

CMS also helps set up the Traffic control center so that it can start providing regulators with benefits from day one.

Congestion Data Sources

CMS also participates in setting up individual components like traffic camera's IR speed meters, display boards and so on. These components become primary data points (sources) for the Traffic Control Center and are the basis for the dashboard that regulators would use.

Using its expertise in implementing traffic systems, CMS makes it easy for any regulator to get started with their Traffic Management setup

Journey Time Measurement

One of the most important things to consider when managing city wide traffic is understanding high congestion zones and predicting outcomes. This is achieved through something called Journey time measurement. This allows us to use GPS beacons and Bluetooth data to understand the movements of vehicles. Using this data we are able to predict a journey time and create predictive congestion maps.

This goes a long way in aiding traffic management and can be integrated as yet another source in the traffic dashboard.

End-to-End Component Deployment & Integration

Not only does CMS take responsibility for procuring the components required for setting up a Traffic management project, we also integrate them together and create an end-to-end system so that regulators can have a top level view of traffic across their city and defined nodes.

Since all these are custom technologies, implementing them without the right expertise and getting them to talk to each other can be extremely challenging.

However, with decades of experience in technology integration under its belt, CMS makes it much easier for traffic regulators to implement an end-to-end solution without getting their hands dirty in set up.

With its Traffic Management Solutions, CMS brings in predictive and adaptive traffic management, accident management, law enforcement, smooth traffic flow in platoons- faster travel times, lower stress levels, and most importantly a better quality of life