# Sensing the world for smarter mobility solutions

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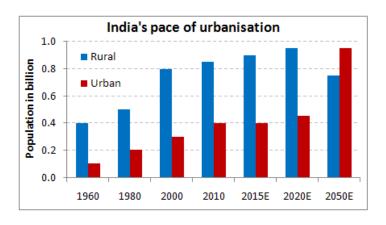


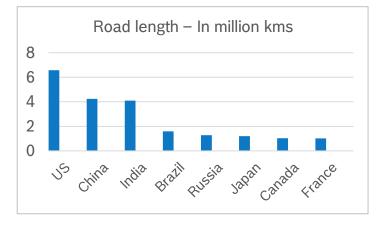




### Result

- Traffic congestion
- Fuel wastage
- Pollution
- Accidents
- Poor road quality







### Road maintenance



## Challenge: Data availability in Right-time

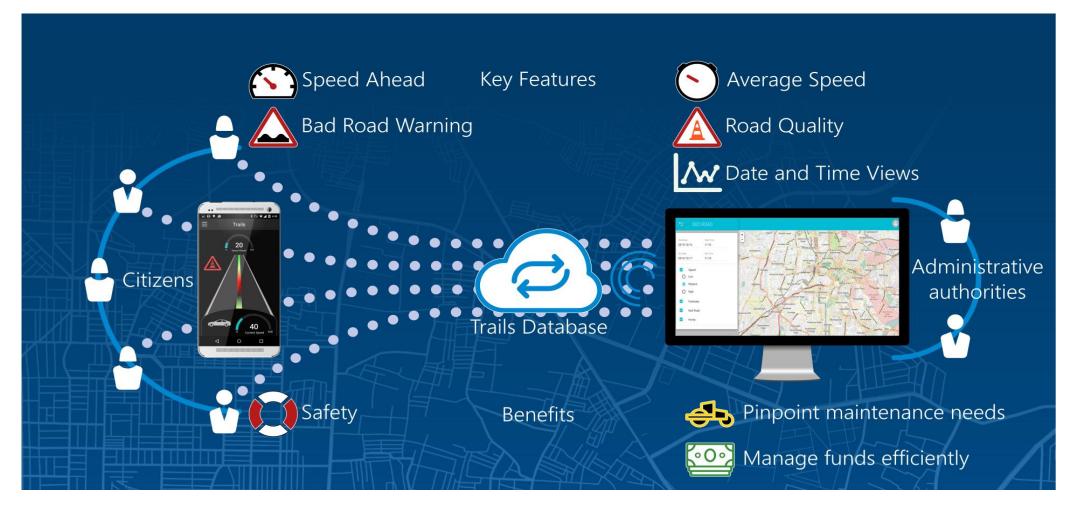








Aggregation and analysis of road condition through crowdsourcing





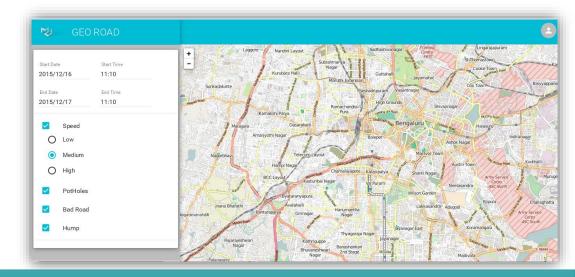


### Citizen

Motorists gets alerts on bad road conditions

### Administrator

- Identify road stretches with low average speed
- Pinpoint locations that need maintenance
- Identify congestion locations



#### Solution benefits citizen and administrators



## **Building blocks**

Real-time probe data capture

Edge processing of sensor signals

Sensor data geo-reference

Location based alerts

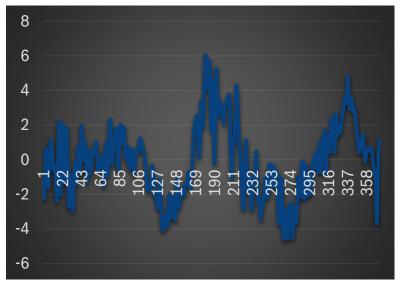
- Geo database
- Crowd data error filters
- Algorithms to analyse sensor data
- Real-time processing
- Vector data analysis



## Challenges

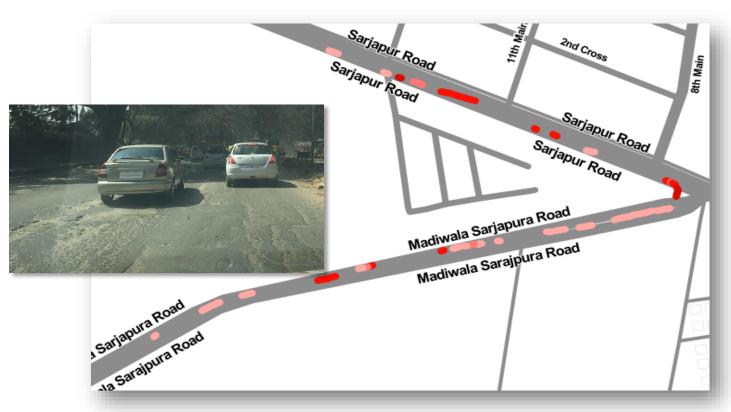
- Resource constraints on smartphones
  - Limited memory: Optimized geo-data storage
  - Low computing power: Efficient algorithms and configurations
- Data privacy: Data modelling and encryption
- User management: Federated login

#### Sensor signals





## How it looks: Case study Madiwala, Bangalore



**Crowd sourcing** 

Machine Learning





