Dynamic allocation of medical oxygen in Pandemic

Most states have their major cities experiencing an unprecedented number of COVID cases, leading to a dire demand for medical oxygen in those areas.

Several Oxygen Manufacturing plants with specific capacities are spread across the country

Minimize the lead time of the medical oxygen supply chain while ensuring that region-wise oxygen demands are met.

Data Driven Simulation Model

INPUTS

- Location and capacity of oxygen manufacturing plants
- City wise location and demand for medical oxygen

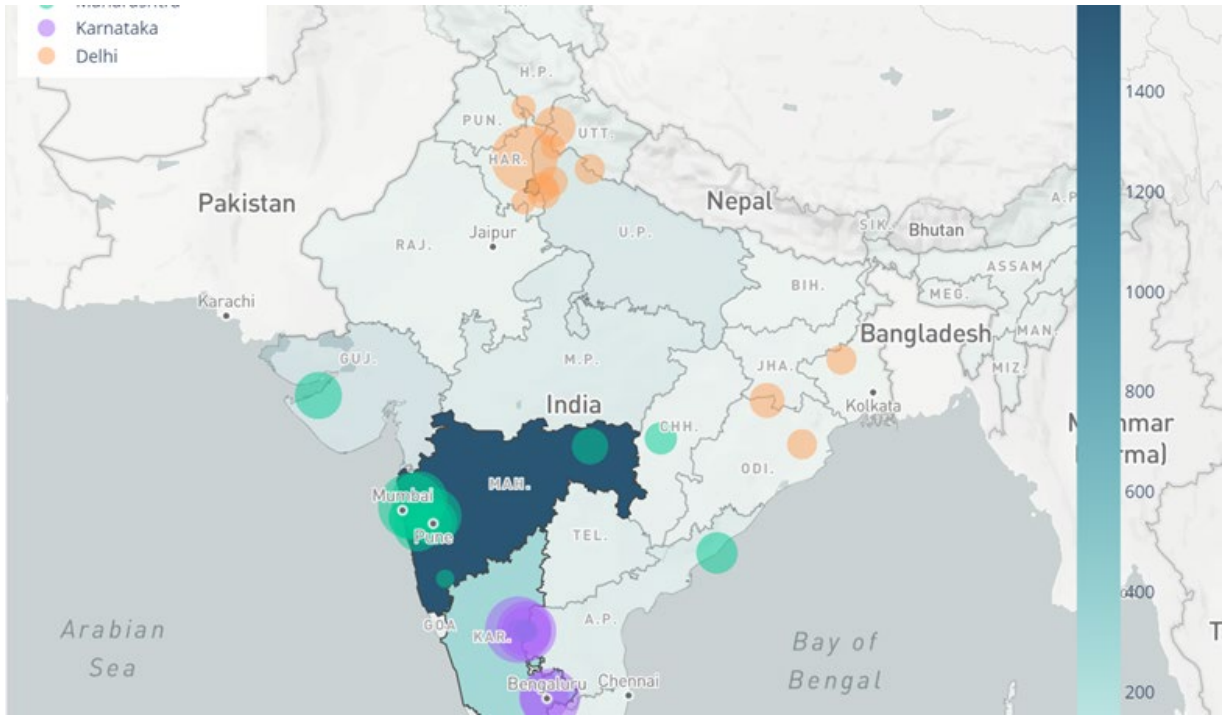
OPTIMIZATION

OUTPUTS

Determination of amount of medical oxygen to be supplied by each plant to various cities

Application of the Data Driven Simulation Model

- Current allocation according to actual data of Oxygen distribution during Second Wave
- Map represents real medical oxygen allocation to states on 21 April 2021
- Comparing our model performance with the actual state-wise allocation
- A total of 71 oxygen manufacturing plants have been incorporated to supply the estimated demand.



- Optimized allocation according to model which uses Lp programming to optimally redivide the supply according to the distance and demand
- Model was able to reduce the total distance travelled by oxygen trucks by 44%.
- This leads to lower lead time and fair distribution of oxygen