SUCCESS STORIES - SUMMARY

Project Name	Client	Brief Description	Key Analyses
NETWORK AND TRAVEL ROUTE OPTIMIZATION	**CONSUMER SERVICES**	Built a **networking and travel optimization model** for developing an efficient travel schedule for regional directors and identified an ideal home location for each region in order to help regional directors effectively commute to all the assigned centres	**'**K-medoid' clustering algorithm, Travelling Salesman Problem algorithm , Travel time matrix

NETWORK AND TRAVEL ROUTE OPTIMIZATION FOR CONSUMER SERVICES COMPANY

ABOUT THE CLIENT

Client is a **Cosmetic Medical Services** firm with more than 100 centers in the USA

SITUATION

- The treatment **centers had to be allocated regions** based on geographical factors, and the **regional directors would have to travel to the centers** assigned to their region
- Merilytics partnered with the company to **develop a complex networking and travel optimization model to develop a robust travel schedule for the regional directors**

VALUE ADDITION

- Segmented the 110 centers into **10 regions** based on **point-to-point distance between center locations using a 'K-medoid' clustering algorithm**
- **Identified a home center that minimizes distance between locations** (within a region) and home center
- Developed a **robust travel schedule** for the regional directors using the **'Travelling Salesman Problem' algorithm** by building a **"Travel time matrix"** based on drive time/flight time between any two locations and subject to multiple business constraints

IMPACT

- Our optimization model helped the client to create an **efficient network of treatments centers classified in to regions** with defined home centers for each region
- Developed an **efficient travel schedule for regional directors** to enable them to effectively commute to all the centers assigned to their region under various geographic and demographic constraints

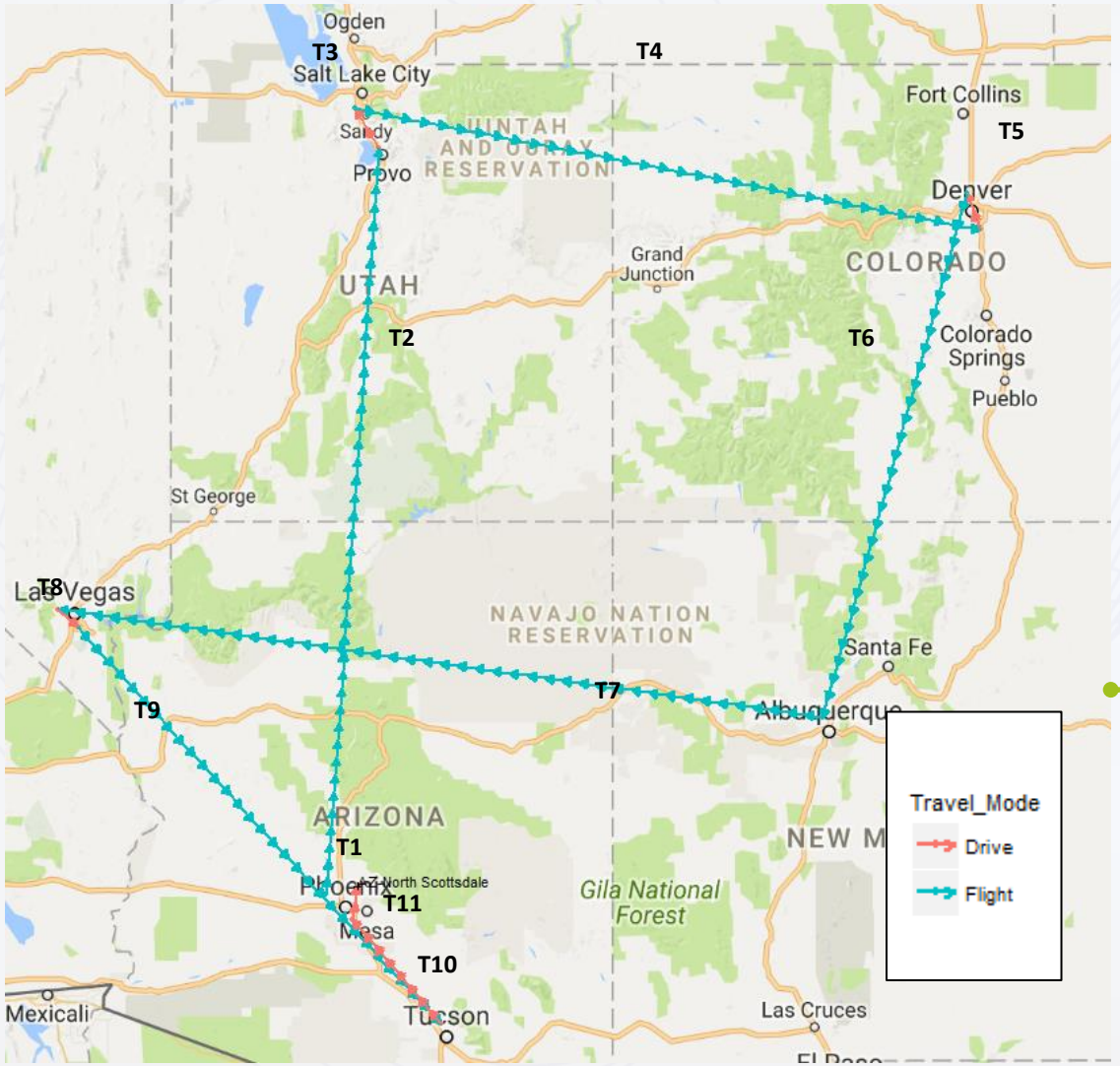
NETWORK OF TREATMENT CENTERS SEGMENTED IN TO REGIONS

ILLUSTRATIVE

The 110 treatment centers are categorized into 10 regions with each region having a home center assigned

TRAVEL ROUTE OPTIMIZATION WITHIN A REGION FOR THE REGIONAL MANAGER

ILLUSTRATIVE REGION - 02



Constraints/Assumptions:

- If drive time between two locations is more than 240 mins., then the mode of travel is assumed to be 'flight'
- Buffer time of two hours has been included for each flight journey
- The travel time from the center to the nearest airport has also been included in flight time

Optimal travel route for a regional director within the region was determined analogous to Travelling Salesman Problem