**Project Description:**

The objective of this research is to design a framework for visualization of the different airline data. The main theme of the application is to assist “Airline Network Planning” Analysts to perform their jobs easier and faster. The focus will be for now on three data items: flight schedule (capacity), demand (passenger count), pricing data, and other metrics that combine these data.

The framework is to be categorized into three modules:

Visualization of descriptive data (data available by other vendors)

Visualization of predictive data (data generated by our performance prediction models, which run off-line)

Visualization of prescriptive data (data generated by our prescription models, which run off-line)

Airline data in general can be classified as (1) supply-related data (2) demand related data, or (3) performance data (which links demand to supply).

The main item in supply related data is the flight schedule. We have historical schedules that are already flown and future schedule (for the next 12 months or so) and usually amended by airlines. Schedule can be presented on a daily, weekly, or monthly basis. The main object in the flight schedule data is the flight, which is defined by a string or attributes including origin, destination, flight number, schedule departure time, scheduled arrival time, fleet type, seat capacity, day of week, code share, etc.

The schedule data could also be aggregated to any level. For example, it can be presented for city-pairs in terms of flight frequency and seat capacity per airline on each leg (SFO-LAX is a leg)

The demand related data could be available at different levels, depending mainly on whether the data is in the descriptive, predictive or prescriptive modules. Usually when the data is generated by our modules, it can be presented at the disaggregate level we select. In general demand-related data could be presented at the market level (e.g. Latin, Europe, etc.), city-pair level, itinerary level, flight level, etc. In the descriptive module, demand-related data is typically historical. However, in the predictive or prescriptive module, it is for future periods.

Like the demand-related data, the level of presentation of the performance data relies on the module type. The idea here is to able to show performance at different levels including flights, legs (route), city-pair, itinerary, etc.

It should be noted that same data item could be presented in different formats for completion and clarity.