

Strategy & Optimization

Major Airline Operations & Scheduling



Optimize Crew Scheduling & Aircraft Placement

Case Study

Situation

Our client had 500 aircraft, 8,000 pilots and 17,000 flight attendants. Creating an efficient schedule matrix for all three components, while satisfying marketing demands & complying with government rules & regulations has always been challenging for major airlines. This problem from a mathematical and logistic approach is specific to the transportation workforce and very complex due mainly to the personnel and aircraft movement from place to place

Project Objective

- Create maximum efficiency for all aircraft placements (operations)
- Comply with DOT, FAA and Delta's work rules (rules & regulations)
- Implement a new bidding system which will allow Delta Airlines to utilize its crews more efficiently (utilization)
- Innovate a new bidding system which will give the crews more flexibilities and improved work conditions (scheduling)
- Establish new parameters for "Preferential Bidding" – an innovative optimization system which will accomplish all of these objectives

What We Did

- Define major obstacles to achieve optimization success:
 - Marketing Department – airline schedules are driven by market demands and marketing forecasts
 - Rules & Regulations – airline crews (pilots & flight attendants) work rules have strict government oversight
 - Perceptions of Employees - attitudes and beliefs demonstrated by actions and behaviors towards change. Preferential Bidding will require a major shift in cultural perceptions
- Identify the existing software companies who can offer a reasonable solutions
- Aggregate the data from different oversees companies who utilize Preferential Bidding
- Create a weighted ranking system to define priorities by:
 - Marketing
 - Operations
 - Rules & Regulations
 - Utilization
 - Scheduling

Results

- The client's preferential bidding is a state of the art utilization process which allows our client to save a considerable amount of money as a result of higher & better placement of its aircrafts while satisfying marketing demands and regulatory constraints. A significant savings has also been realized as a result of a more efficient crew scheduling.