



Flight Scheduling in a Large Airline Company



Background

A large airline company operating both air passenger and cargo services worldwide provides excellent services throughout the world and has won numerous industry awards for its outstanding customer service.

The company has a large number of aircrew located around the globe, and managing and informing them of flight schedule and their personal work records wherever they are in the world is vital part of the company's operations.

The company has over 2,750 domestic and international flight departures every day. The company has about 470 aircrafts available to fly these flights. The aircrafts are divided by aircraft type into fleets of which the company has 10. The intricate pattern along the route system is called the schedule. The schedule is the very heartbeat of an airline.

Challenge

It has been said that an airline seat is the most perishable commodity in the world. Each time an airliner takes off an empty aircraft with an empty seat, a revenue opportunity is lost forever. So the schedule must be designed to capture as much business as possible, maximizing the revenues with as little direct operating cost as possible.

In the airline business, the capital-intensive nature of a manufacturing environment is combined with the low-profit environment of retail sales. Airlines are capital, fuel and labor intensive. The survival and success depend on the ability to operate the flights along the schedule as efficiently as possible. The profit and loss curve in the airline business has historically followed the peaks and valleys of the economy. In this dynamic environment, where profits have historically been low and cost historically high, how well an airline plans and implements its schedule can very well determine its future. A small adjustment in the schedule may result in millions of dollars of additional revenue or in millions of dollars of losses. In planning schedules, continuous refinement is not a luxury; it is a requirement.

Solution

Both the size of the fleet and the number of types of aircraft have an exponential impact on schedule. The company used our optimization solution for flight scheduling to maximize its net profit per day. The implemented solution resulted in several million dollar cost savings to the company.