PWC Consulting
Operations Analytics Projects

- **Client Business Need**
  - The USPS has a long-standing contract with PwC to measure the on-time delivery performance of many of its mail classifications. This is done through a network of “droppers” and “reporters” throughout the U.S. who induct bundles of test mail in one location and report their arrival in another.

    This subproject involved determining how many bundles of test mail of each mail class to induct in each three-digit zip code in each locality on each day during a quarter. In the past, lengthy computer programs were run to determine an adequate bundle allocation plan through what was largely a trial and error process. USPS needed a way to minimize the costs and inefficiencies associated with the dropper program while satisfying their targets for inducting mail smoothly and striking the appropriate balance of induction volume.
- **PwC Solutions**
  - The problem was formulated as a two-stage hierarchical mathematical programming problem with integer decision variables, a linear objective function, and linear constraints. A total of 85 distinct models were developed and run, one for each geographic locality. Each optimisation model had over 10,000 decision variables and more than 20,000 constraints.
- **Benefits to the Client**
  - Greater dropper satisfaction leading to cost savings from reduced turnover
  - Faster and more cost-effective bundle allocation process
  - Improved bundle allocation plans that are smoother and more balanced