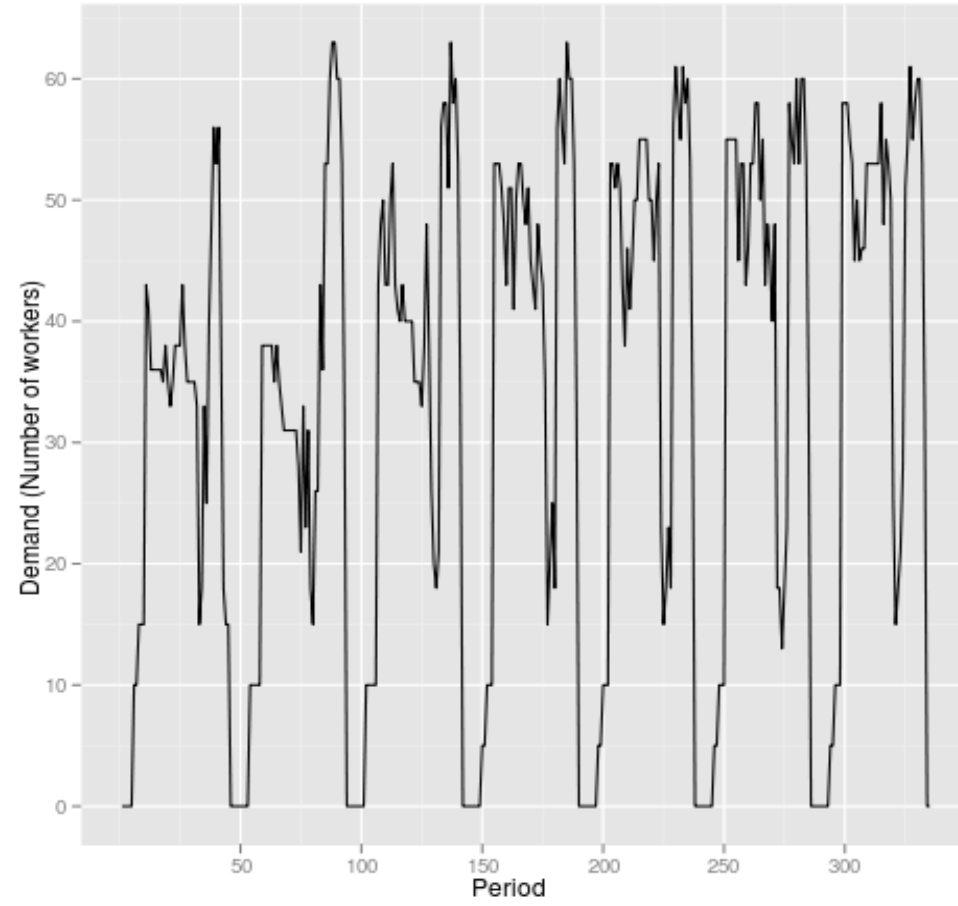


Business Case- Avaya/USPS

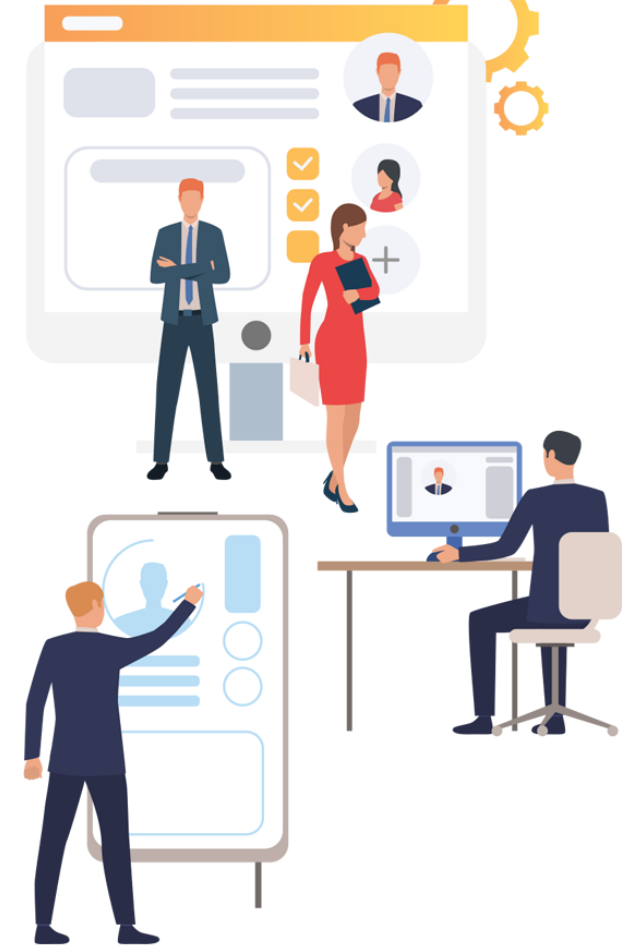
- Optimization requirements
 - Maximize full-time workers so as not to exceed demand at any 30 minute interval
 - Once full-time workers are allocated, minimize number of part-time workers to meet remaining demand
- Need to accommodate
 - Non-contiguous days off
 - Variable start times per worker across week within 8 Hour window





Enquetegroup's solution

- Brute force optimization not feasible
 - Huge number of possible weekly schedules (10000s)
- Unified analytic framework using mixed integer linear programming (MILP)
- Innovative formulation of the algorithm to accommodate required schedule flexibility
- Analytic formulas developed to automated enumeration of the number of different schedules on a run
- Very good sub-optimal solution developed when number of schedules is computationally prohibitive
- Optimization process is modular
 - User can choose the worker portfolio mix and contiguous days off



Business Case- Avaya/USPS

- Results
 - Computational time takes minutes rather than hours or days
 - Allows user-driven evaluation of different work schedule portfolios
 - Allows wide variety of irregular schedules, including variable start times and days off, alongside traditional schedules, for both full-time and part-time workers
 - Allows evaluation of innovative scheduling strategies for efficiently meeting demand.

