Problem Statement for The Boeing Research Project

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Abstract

The aim of this project is to define a plan that determines the most efficient way for salaried Boeing employees to get to work on time to minimize the disruption to both their production and personal lives. Our plan is to use data collection techniques and analytics to develop a model/algorithm that can be used as demands change. The data collection involves evaluating instances that can be improved within employee work schedules through interviewing employees at the Boeing Everett Site. Facilities documents and the data will be analyzed to offer a detailed recommendation for a move forward plan including process improvement.

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I. Problem Definition

The Boeing Company has addressed the demand for optimizing their scheduling of salaried employees to reduce disruptions in terms of shift start, stop, and commuting practices. At the Boeing Everett Factory in particular, inefficient arrivals and leaving times cause a direct correlation to the employees ability to balance production efficiency and time spent with their families. Taking into consideration of the large population of approximately 30,000 employees and unorganized shift times, there are many instances where a dense amount of workers would attempt to leave at the same time, causing unnecessary traffic congestion. It is imperative that large factories like Boeing remain as efficient to not only ensure that the optimal amount of progress is made at the work environment, but also, ensuring that their employees are happy and commute safely to their homes.

This projects main focus will be placed on salaried employees rather than those on hourly wages. There is currently an unknown amount of start times for salaried employees at Boeing which include engineers, management, and analysts.

II. Proposed Solution

As a team, we will be conducting a detailed research to analyze the existing property at Everett, the demographics and methods of transportations of salaried employees, and compiling the thoughts and opinions of employees at the site. To accomplish this, team members will be required to analyze multiple drawings of the Everett Factory, involving maps of the site and parking structures. This is crucial as it allows for the allocation of programs to enter and depart with the shortest distance in mind. Team members will also be required to assess the demographics and transportation options of employees provided by the Boeing Everett factory in order to understand the average distances traveled and routes as they commute from home to work. Lastly, the team will be required to travel to the Boeing Everett site to interview employees, gather data, and access the property for two days. During these two days, we will examine parking structures, transit routes, and the overall building's layout at Boeing Everett. After the entire data has been compiled, we will be developing a plan/algorithm that can be used to optimize the salaried employees arrival and departure times. The plan/algorithm shall be designed to consider a multitude of factors enabling to be flexible depending on demand requested by Boeing.

III. Performance Metrics

The proposed solution will be tested on a select group or program within the Boeing Everett site to simulate its effectiveness prior to being fully active to the site as a whole. While the test population will encompass approximately a population of 30 or so employees depending on the decision of management, the proposal is intended to be used on approximately 20,000 employees with the aim to balance production efficiency and reduce disruptions within personal lives. The proposal will be determined as effective if there is a positive impact in efficiency compared with current statistics provided. In the event that the proposal is deemed successful with increasing productivity within the site, the standardization of the proposal is dependant on the site leadership. Allowing the proposal to be in effect and used as the site leaders deem fit, a survey will be conducted among the employees at Boeing Everett for feedback. Using this feedback the team will re-evaluated the proposal to provide both comfort and efficiency for Boeing Everett.

IV. Signatures

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