Case Briefing

Operations - Engineering

The Situation

Madame Bousseau, the owner of the 190-room Harriman-Brown Hotel in Chicago, Illinois, is growing increasingly concerned about the excessive number of Out-of-Order (O-O-O) guestrooms. The year-to-date numbers show that the O-O-O's are up 40% over last year. She is also finding that kitchen equipment problems are causing guest dissatisfaction issues in the restaurant. In order to improve profits last year, Madame Bousseau drastically cut the engineering annual budget. One of the positions that was reduced was the Preventive Maintenance (PM) person, who was assigned to implement a preventive maintenance program to keep emergencies to a minimum. The number of emergency repairs has now skyrocketed.

Your Role

Madame Bousseau has asked you to provide consultation for the engineering/maintenance department. She explained that she can't afford to spend too much on engineering but MUST fix the OOO rooms issue and the guest satisfaction issue in the restaurant.

Learning Phase

In the Learning Phase, step-by-step instructions will guide you through planning maintenance for a small, limited service hotel. In this practice hotel, only two things breakdown: room HVAC units may stop working, plumbing in the bathroom can become clogged up. In both cases, this takes the room out of service until it is repaired and causes guest dissatisfaction. You'll assess the hotel for OOO rooms, assign staff to make repairs, and then evaluate the situation. You'll learn that preventative maintenance, instead of just repairing broken items, can decrease your number of failures while keeping staffing costs within reason. You'll study, in detail, the math behind creating a good preventative maintenance (PM) program.

Challenge Phase

Your task is to improve customer satisfaction scores (CSS) and eliminate O-O-O rooms while keeping engineering/maintenance costs down. To do this, you will need to complete emergency repairs and establish a preventative maintenance program.

At the option of your Professor, you may be able to retry the Challenge Phase multiple times. Only your best grade will count.

Engineering in the Simulation

The simulator models key equipment in the hotel rooms and in the restaurant. Each piece of equipment has a likelihood of failure that increases with the time since its last preventative maintenance service. The change in likelihood of failure with time varies by the type of equipment, as does the cost to do an emergency repair. Equipment failures in rooms take the room out of service resulting in lost revenue. Kitchen refrigeration failures can spoil valuable inventory. Maintenance workers, which you schedule, prioritize failed equipment and then allocate time to preventative maintenance when possible.

Discussion Questions

What is the purpose of a strong preventive maintenance program?

Explain why a graph of total maintenance cost vs. frequency of preventative maintenance is likely to have a "U" shape?

In what circumstances might a preventative maintenance program not be cost effective?

Name three areas in a hotel you think might become more difficult to manage as the hotel ages?

Knowledge Matters