Capacity Planning for National Cranberry Cooperative (NCC)

Project Duration: March 2024 - May 2024

Associated with: University of Delaware

Background:

National Cranberry Cooperative (NCC) aimed to enhance its capacity planning to reduce truck waiting times and ensure efficient processing of cranberries.

Project Details:

1. **Process Flow Diagram:**

- Developed a detailed process flow diagram to map out the entire cranberry processing workflow.

- Identified key areas within the processing line, specifically focusing on capacities and potential bottlenecks that could hinder the efficiency.

2. **Simulation Analysis:**

- Conducted three simulations focusing on the dryer area, a critical part of the processing line.

- Each simulation was designed to test the impact of different capacity enhancement strategies on the overall processing time and truck waiting times.

3. **Results:**

- The simulation results indicated that adding additional dryers would effectively eliminate the waiting times for trucks.

- This led to a smoother flow through the processing line, ensuring timely processing of cranberries.

4. **Financial Analysis:**

- A comprehensive financial analysis was conducted to evaluate the return on investment (ROI) for adding new dryers.

- The analysis considered the costs of purchasing and installing new dryers against the benefits of reduced waiting times and increased efficiency.

5. **Recommendations:**

- Based on the positive simulation results and financial analysis, it was recommended that NCC invest in additional dryers.

- The investment was projected to have a positive ROI and significantly improve the processing efficiency.

Skills Demonstrated:

- **Business Process Analysis:** Thorough analysis of the cranberry processing workflow to identify bottlenecks and inefficiencies.

- **Financial Modeling:** Detailed financial analysis to assess the cost-benefit of capacity enhancements.

- **Strategic Planning:** Development of strategic recommendations based on simulation and financial analysis to improve operational efficiency.

How to Use the Analysis:

1. **Understand the Process Flow:**

- Review the process flow diagram to get a clear picture of the entire processing workflow and identify key areas of focus.

2. **Analyze Simulation Results:**

- Examine the simulation data to understand the impact of different capacity enhancement strategies.

3. **Evaluate Financial Implications:**

- Look into the financial analysis to assess the feasibility and ROI of the proposed recommendations.

4. **Implement Recommendations:**

- Use the insights and recommendations provided to make informed decisions about capacity enhancements to improve operational efficiency.

Conclusion: This project on capacity planning for NCC highlights the importance of a systematic approach to identifying bottlenecks, testing capacity improvements through simulations, and conducting thorough financial analyses to support investment decisions. By following these steps, NCC can significantly reduce truck waiting times and ensure timely processing of cranberries, leading to improved overall efficiency.