

Problem Statement

The Talking Rain Beverage Company is the creator of the beverage, Sparkling Ice. Currently, Sparkling Ice is created directly from raw material at both Talking Rain facilities and copackers. This process could be improved using a concentrate kit, which could decrease cost, processing time, error rate, and required storage space.

Project Goals

- Calculate the required storage space for the current demand
- Find the feasibility of implementing the concentrate kit system
- Give concrete recommendations as to whether or not the concentrate kit system should be implemented

Scope

The interior of Talking Rain beverage manufacturing facilities, including the storage area and processing areas.

Deliverables

- Simio model
 - To discover system capacity and bottlenecks
- AutoCAD model
 - To visualize the hypothetical facility layout
- Excel Spreadsheet Calculator
 - Determine storage space requirements

Simio

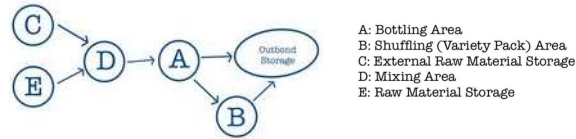


Fig. 1: Flow chart and legend



Fig. 2: Labeled floor plan of Preston Facility

Model Layout

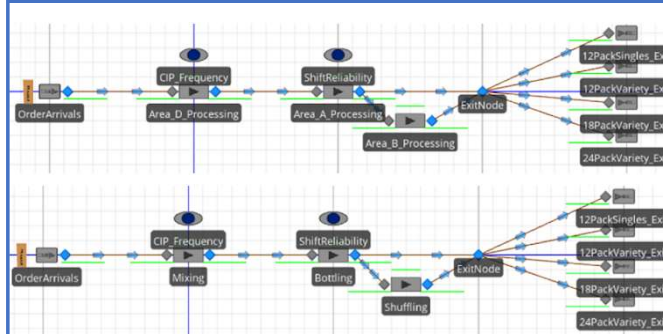


Fig. 3: Simio model of current and proposed system

Experiments and Findings

- 4 experiments per model
- Discovered the extra capacity that the current system has at the end of the month
- Discovered maximum number of orders that can be handled by the system, for both 22 and 30 work-day months
- Found bottleneck of the system to be the bottling area, not the mixing area

AutoCAD

Our AutoCAD drawing focused on three major changes to the Preston Facility

- Storage or ingredients would be condensed to maximize utilization of space
- The bottling line would be changed to a 55-gal drum filling line because bottling would happen at a copacker or kit-using facility
- Our Excel Calculator was used to expedite the calculations of the storage space of the new facility

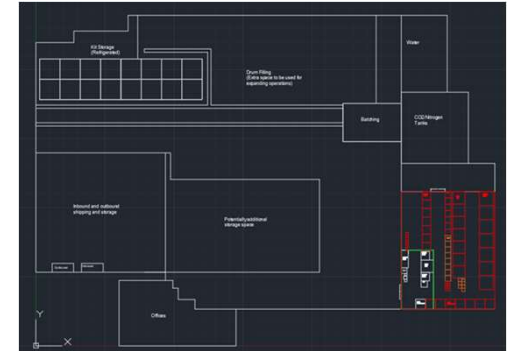


Fig. 4: Hypothetical Kit-Making Facility

Conclusion

- A facility smaller than Preston would have the storage space to meet the 10,000,000 and 80,000,000 case/year requirements
- Using a kit would not substantially affect the manufacturing speed (only 2%) change but could potentially lower the cost drastically

Acknowledgements

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