

PROBLEM

The weekly demand in the factory is not met due to improper management of tote bins. This leads to a loss in revenue for the company. To become more profitable, the demand must be met consistently by improving the production sequences.

SOLUTION

ALTERNATIVE 1 Increase the utilisation of the forklifts to save the company costs on staff and extra machinery. The current production uses three forklifts which resulted in an 18% utilisation. The simulation verified that two forklifts were sufficient and increased the utilisation to a total of 26%. The demand is still met with an excess of 24 750 kg creamer powder produced per week.

ALTERNATIVE 2 Optimise the total tote bins and the starting WIP inventory backlog to maximise the throughput of the production sequence. The simulation verified that a total of 210 tote bins and 200 backlog tote bins were the optimal balance between initial cost and throughput. The throughput increased by 114 tote bins per week.



PROJECT APPROACH

PROJECT ANALYSIS

IE TECHNIQUES

1 Diagnosing & Problem Formulation

2 Action Planning

3 Action Taking: Design

4 Impact Evaluation

5 Reflecting & Learning

Production Schedule
Not optimised to meet demand.

WIP Area
No set sorting method. Optimal size of backlog and total tote bins not known.

Staff
Number needed unknown.

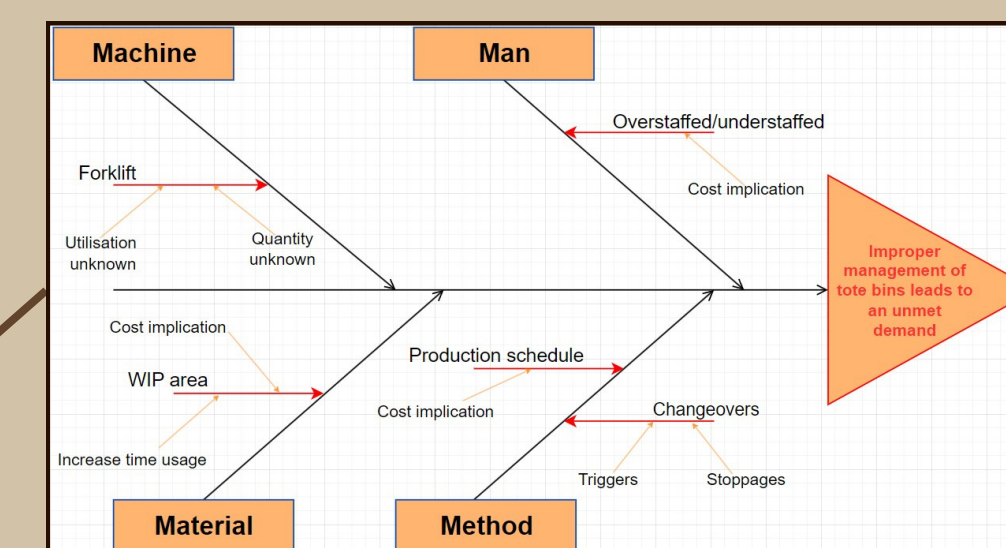
Forklifts
Utilisation and number of forklifts required are unknown.

Changeovers
Stoppages occur due to lack of triggers.



Anglo Vaal Industry (AVI) – National Brands Limited – Entyce Beverages is a lead competitor in the fast-moving consumer industry. Entyce Beverages is a subsidiary of AVI that produces famous South African tea, coffee, and creamer products such as Five Roses, Freshpak, House of Coffees, Frisco, Ellis Brown creamer, etc. The project focuses on the production sequence of a factory that is situated in Isando, Johannesburg and produces Ellis Brown creamer.

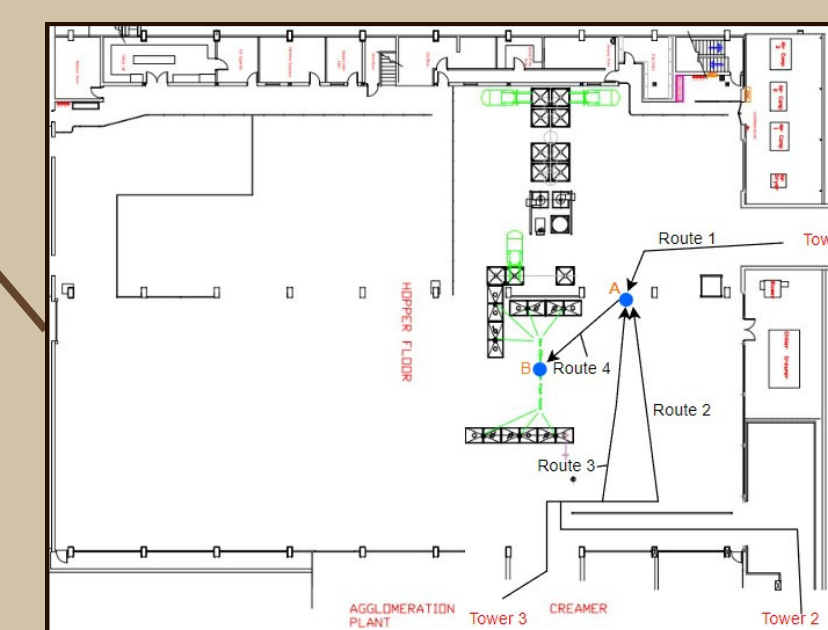
1 **Fishbone Diagram**
Identify the root cause of the problem.



CONCLUSION

Both alternatives meet the weekly demand required. Alternative 1 saves the company costs. Alternative 2 requires an initial cost for additional tote bins which induces costs for the company. **ALTERNATIVE 1** is the best solution to improve the production sequence.

2 **Time Studies**
Determine utilisation of forklifts.



3 **Data Collection**
Input information for simulation model.

4 **Simulation**
To verify and validate solutions.



PROJECT AIM

The project aims to meet the weekly demand of creamer powder. To improve the production sequence two alternative solutions were designed. These two alternative solutions aim to improve two of the issues identified in the problem analysis.

