



Independent Project

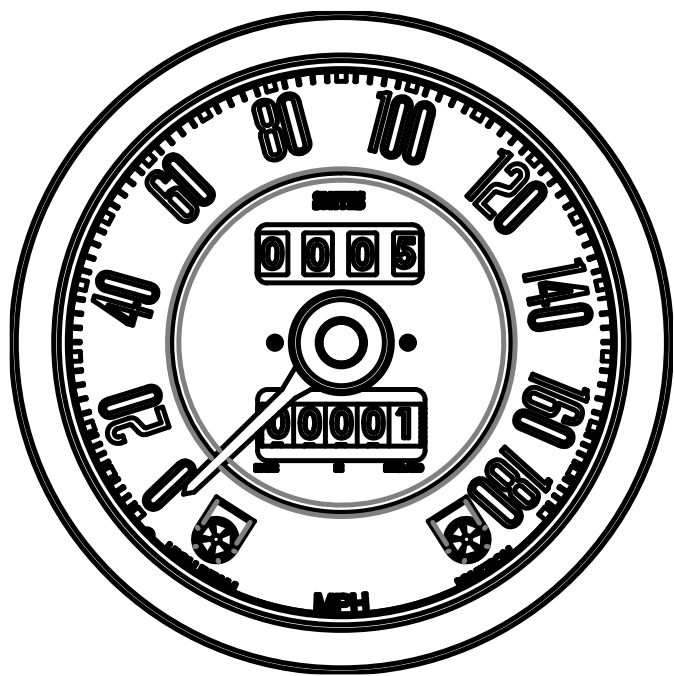
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Introduction

The company that this study is based on is Caerbont Automotive Instruments. They manufacture and engineer vehicle instrumentation for the classic car market. The type of instrument gauges can range from speedometer to timeclocks, for customers such as Morgan, (2024)

Figure 1.1,
Caerbont
Automotive
Instruments
Product
Pictured



The Project Topic Area

This report is about process improvement which involved making a process more efficient and effective. The aim being to improve the workflow in the company's processes.

The reason for the study was to be able aid the company in increasing their customer satisfaction and company revenue by introducing new methods in refining processes of manufacturing the product.

The aim was to increase knowledge and understanding when presented with problems in a manufacturing environment.

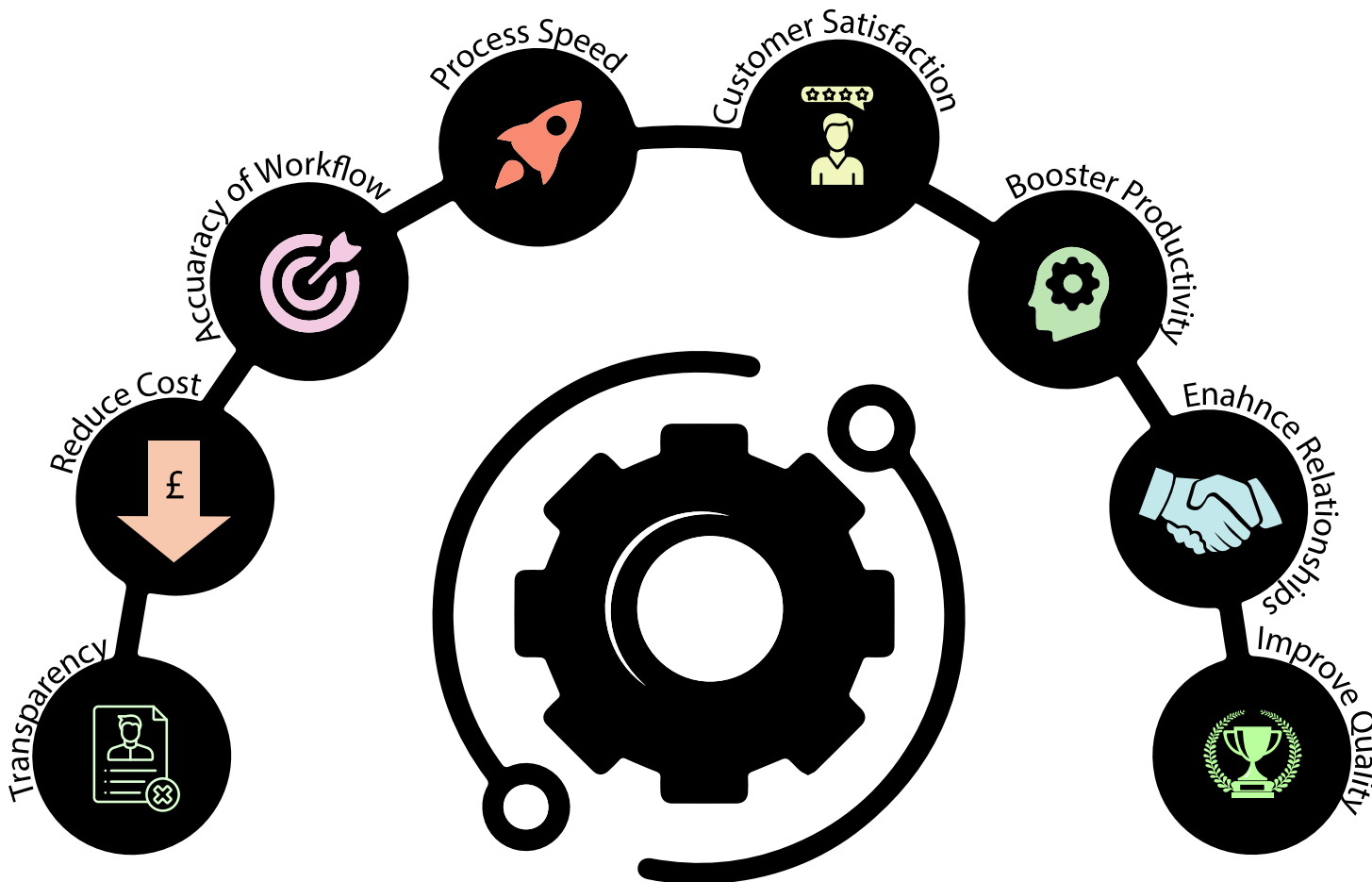


Figure 1.2, Process Improvement As Described by Boutres, T (2017).

The Problem

Delays in delivery times of the product was identified as problematic within the company. Over 19% of customer orders were late to shipment resulting customer dissatisfaction and potential losses of revenue and growth.

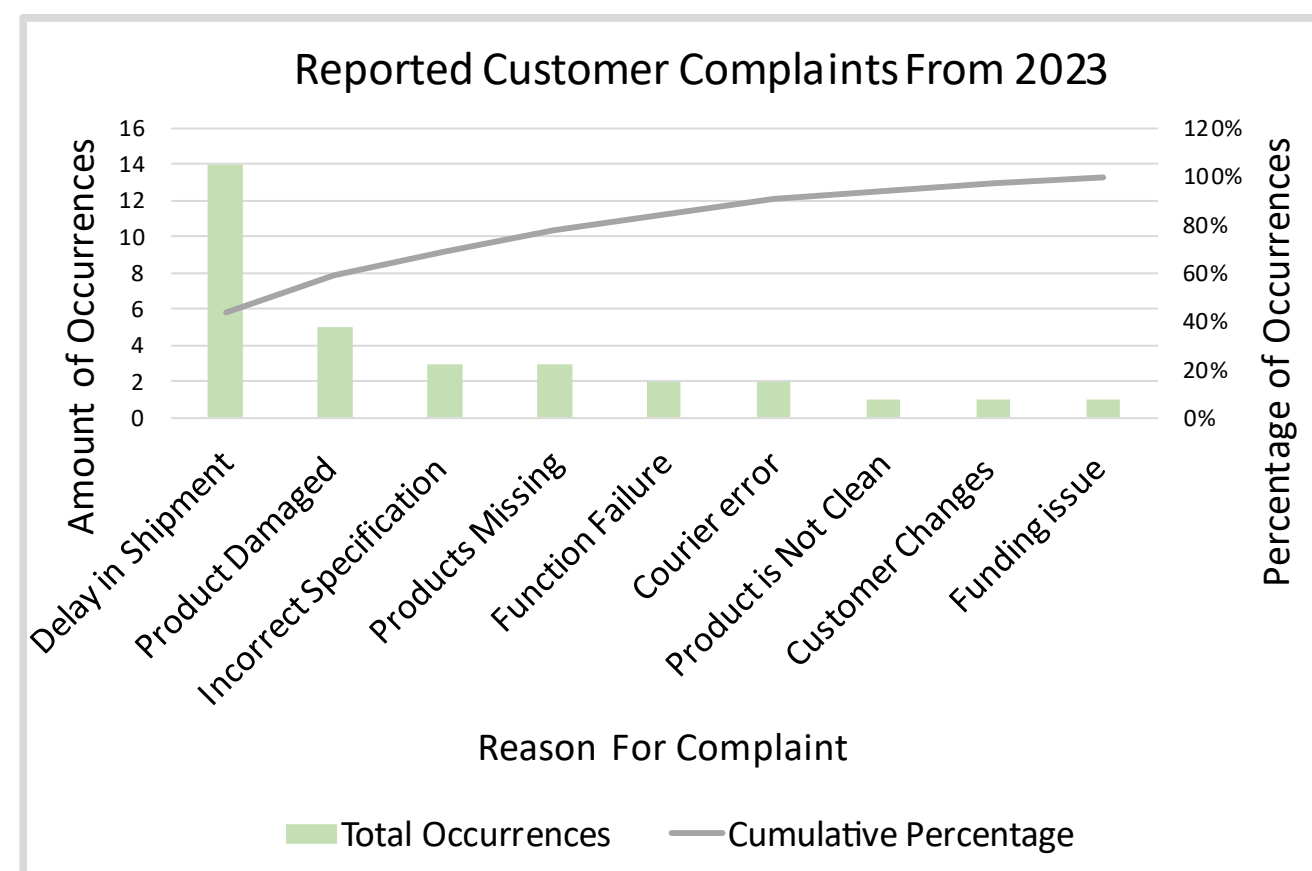


Figure 1.3 Problem Statement Data- Customer Complaints

The Method

The DMAIC format was considered to find a permanent solution. The six staged process was chosen because it was a well- studied method and through research, had proven to solve similar problems in delivery delays in manufacturing.

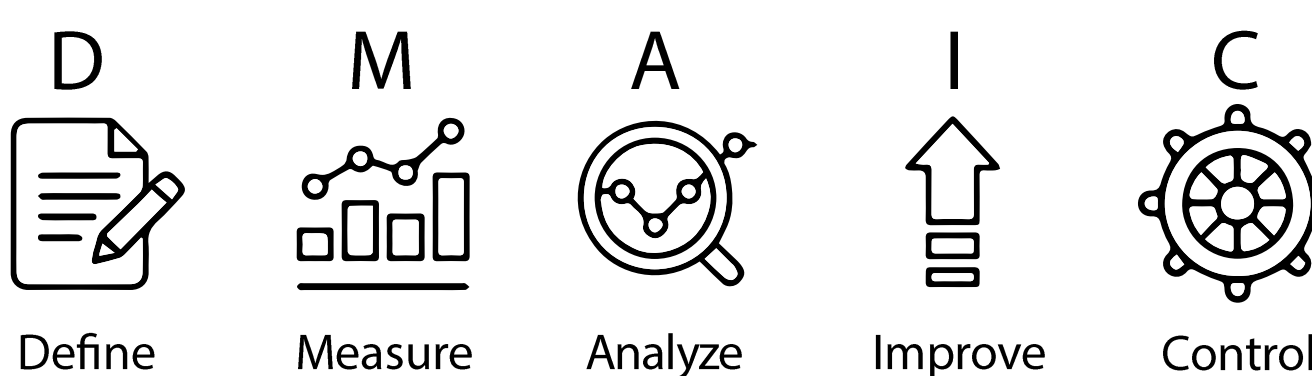


Figure 1.4 McCarty, T (2005), DMAIC Format Used When The Solution Isn't Clear

The Results

The first stage was to define what the problem was within the company. This involved mapping the processes and listing the customer requirements. A project charter was used to state the projects objectives and deliverables. While gathering data, the team noticed a pattern in changes in product assembly after release. Sampling data proved to show a bottleneck in the assembly process and also while gathering components.

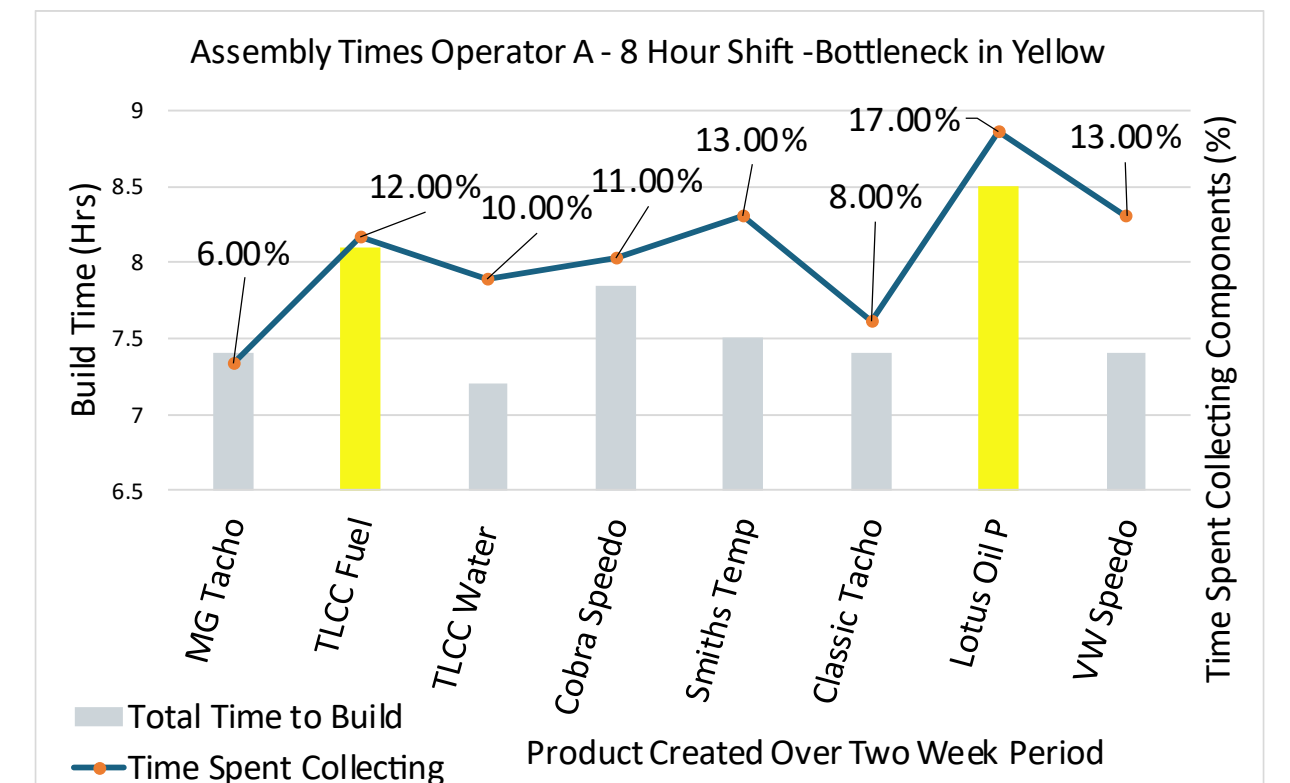


Figure 1.5 Sampling Data From Assembly Times

Analysing the data suggested that the root cause was due to incorrect components added onto bill of materials resulting in a bottleneck. Further analysis however, proved that the real root cause was from the manufacturing system. A solution was to introduce a Kanban system instead of a bill of materials. Using Morgan (2024) product for a pilot proved that a reduction in assembly time could assist in delivering the product on schedule. Reduction of over two hours was seen using Kanban system.

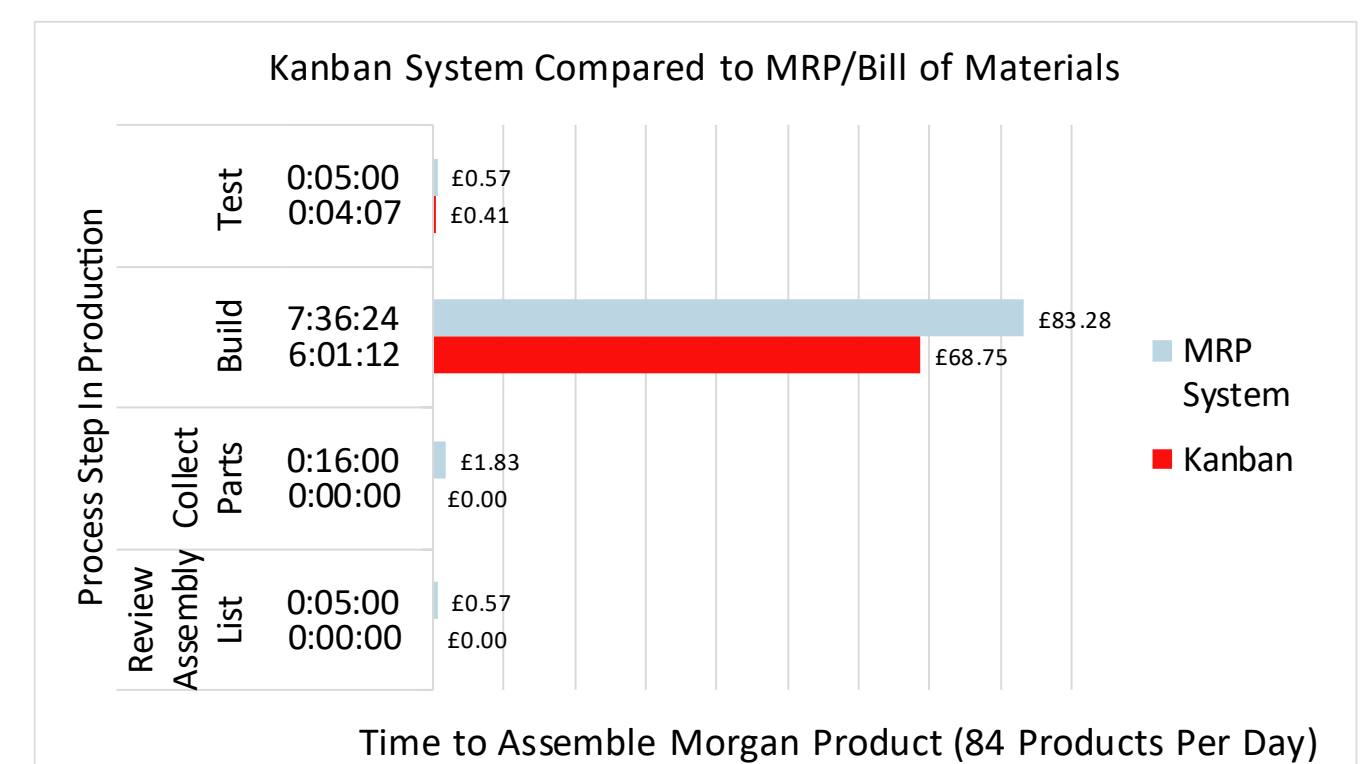


Figure 1.6 Kanban System Time Saved Compared to Current

Conclusions

Through process improvement methods, sufficient data was gathered, and the problems root cause was found within the organisation. Using a lean form of manufacturing, the company could potentially not only deliver products on time but create a more efficient system in production aiding growth and development.

References

- Morgan, (2024) Morgan Motor Company – Plus Six Model, Malvern, U.K
- McCarty, T (2005), Six Sigma Black Belt Handbook, McGraw Hill Publishers, New York
- Boutros, T. and Carmella, J. (2017) The Basics of Process Improvement, Taylor and Francis