

MANUFACTURING DIAGNOSTIC AND INTRODUCTION OF BUSINESS IMPROVEMENT PROGRAM AT A TRUCK MANUFACTURER IN AUSTRALIA

TERMS OF REFERENCE

Working as part of a team SBP were assigned to work for a company who manufacture trucks in Brisbane Australia. This company who are part of a large multi national company required they're Australian operation to improve its business or face being closed. As part of the team we were asked to work with the company for 2 weeks, our brief was to concentrate on the manufacturing side of the business. The first week was to be a manufacturing diagnostic run with a cross functional team from the site and the second was to develop an action plan and to show what was possible in a short time by conducting a Kaizen event.

PROJECT AIMS & OBJECTIVES

The aim of the project was to assist the company to carryout a review of its operations and in particularly its manufacturing. In the first week two teams would operate one to process map the sales order process and the customer delivery process and the other to carryout a manufacturing diagnostic including mapping the production process. By mapping the entire process of the company lead-time could be assessed and improvement opportunities highlighted. The manufacturing diagnostic would highlight ways to reduce lead-time, improve quality and reduce costs in the business.

The objectives for the second week were to run a Kaizen event so that the manufacturing area could see what was possible and how to run such events. This would then enable the site to carry on running such improvements to enable the business to further develop.

PROCESS OF DELIVERY

The first step in the process was to provide the diagnostic team with some basic training in tools and techniques, which would be used during the week. A cross-functional team gathered and was given some training and discussions were held on topics ranging from identifying waste to Kanban. Data was collected on what the problems perceived in manufacturing were through using brain writing and affinity diagrams. A black box diagram

was then generated to show the main stages in production with all associated inputs and outputs.

The second step was then to start collecting more detailed information. A detailed process map was generated showing all the value added and non-value added steps in the process. It highlighted that there was a lot of transportation in the process and high waiting time. The fact that it was difficult to process map also showed that it was not a very structured and well-understood process. Spaghetti charts were drawn for the flow of materials and of the man movement in various areas of the factory showing that the layout could be drastically improved. 5S audits were carried out again highlighting the need for change and development. Finally cause and effect diagrams of the perceived biggest problems were generated to understand why there were shortages among other problems. Other bits of data were then collected to highlight the strengths, weaknesses, opportunities and threats in the manufacturing areas.

The third step was to combine all the information into a presentable format so that it could be shared with the other groups. Calculating minimum and maximum times for the process and showing the results of the data collection did this. No solutions were generated at this point, as that would be carried out in week two. There were then cross presentations between the groups.

The site management team then gathered and a detailed discussion on the findings of both the manufacturing diagnostic and other areas was held and high level decisions on the areas requiring development were decided. It was concluded that a part of the manufacturing site would hold a Kaizen workshop and that the others would generate detailed project plans to improve the cycle time of the business and to develop the manufacturing capability of the plant.

The fifth step was to conduct a Kaizen workshop. An area was chosen and data collected on the area. It was decided that the area needed to improve 5S, be relayed out and to start working to a drumbeat with dedicated tasks in dedicated areas. The relay out would therefore concentrate on location of tools, materials and people. Work was carried out to determine what was possible where, what the Takt time was and how the area should be run. After this had been determined the new layout was planned taking into consideration 5S, visual management and health and safety. The people who were to work in the area who were not involved in the workshop were consulted and then the area was transformed. Everyone got involved from the MD downwards and with in 3 days the area was reviewed, ideas generated and the new solution put in place. A presentation was then developed and on the fourth day was delivered to the rest of the teams. They in turn presented the detailed project plans.



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The last step in the process was to agree with the site management how the implementation and structure of the improvement program was to be run. This was developed and the site has started to implement and transform the business.

PROJECT OUTCOMES

The outcome of the project was that a detailed process map was generated of the overall cycle time of the business as well as a manufacturing diagnostic conducted through the facilitation and coaching of the site staff. This enabled discussions to be held between the senior managers with real data and decisions are made that will enable the site to develop. Detailed plans were developed and an implementation structure put in place to enable the site to develop. Kaizen was introduced to the company and it was show what was possible in a short period of time and skills were transferred to the unit to enable them to continue.