Analysis on productivity improvement, Using Lean Manufacturing and agile concept in Engine components

To become a world class organization, the basic requirements in any manufacturing industry are Cycle time reduction, lower manufacturing cost and minimal inventory cost and levels. To compete in the digital world, the lean and agile manufacturing plays a vital role to improve the production processes. Lean manufacturing priorities the value addition by eliminating the repetitive process, null valued process in the manufacturing cycle. Agile manufacturing supports Customer needs, optimization, standardization, rapid prototyping tools, core competency and automation of the development processes. The purpose of Agile and Lean manufacturing is the customer satisfaction with a minimum and affordable price. The main role of lean and agile manufacturing is vital to maintain the optimum work in process inventory in the production flow analysis. To improve the production in manufacturing industry, concept of Agile and Lean manufacturing is applied in the Engine component fabrication works, where the aim is to determine the factors affecting the WIP inventory levels to meet the required demand for each product of Engine components. The decision variables are identified and their effects are analyzed and validate in future. The analysis is focused on root cause of the problem, fundamental problems associated with the systems, implementation of 5S, inventory cost, reorder point, kanban etc. the work provides methodologies to minimize the total WIP inventory across all elements of the engine component.