Abstract:

Six Sigma is recognised as one of the most legitimate way to improve processes, products, services and the bottom line in order to substantially improve the financial performance. Six sigma utilises the DMAIC technique that helps the business to minimise or eliminate wastes within the processes and thereby improving performance, customer satisfaction and increases profits. The project was carried out at Kennametal India Limited in the department of “End mill” manufacturing and work was carried out on the manufacturing process of the end mill. The problem formulated in this project originates from the practical problem that the company faced in meeting customer demand.

A negative variation of 20% between the estimated time and the actual cycle time was observed. Hence the intended outcome of this project was to reduce the variation in the grinding cycle time of end mill manufacturing process from 15.34 to 13.0 minutes. Six sigma tools were opted to address the goal undergoing the DMAIC flow, which had a seminal analytical approach identifying the most critical “X’s” and established the optimum process parameter setting by a pragmatic journey of Design of Experiment and establishing control system through statistically proven charts. The outcome of the project was that the grinding cycle time of end mill manufacturing was reduced from 15.34 to 10.02 minutes along with the improvement in the sigma level of consequential metrics such as Cutting Diameter, Core Diameter and Outer Diameter Land Width. The estimated financial savings from this project would be approximately of Rs. 8 lakh per year.