Automation of Quotation Generation in Manufacturing Industries

S. S. R. Kolli

Department of Systems Science and Industrial Engineering
State University of New York, Binghamton
Binghamton, NY 13902, USA

Corresponding author's Email: skolli3@binghamton.edu

Abstract: With the emerging technologies, companies are strategically adapting to new ways of finding solutions to reduce the repetitive tasks and to improve their service quality. In the manufacturing industries, the business and finance departments are responsible for responding promptly with production quotations according to the customer's requirements. Primarily, preparing a quotation for a product follows a systematic procedure, where multiple tasks are performed in acquiring the data from the operations department, followed by the team of experts analyzing and preparing the reports. The challenging solution to optimize the quotation generation process is to automate the process. This study aims to explore a generalized approach to automate the quotation generation process for the manufacturing industries. We built an automated quotation tool, which followed a traditional costing approach, for an electronics manufacturing company. The quotation tool is able to generate flexible quotations expeditiously. A prototype user interface has been built using the R shiny application to perform the automation process, which includes the dashboard page for a cost breakdown and resources and the quotation page for quotation generation. The accuracy of the automated model is documented using an existing Excel-based quotation generation tool used by the company. The results are demonstrated by the time reduction in the quotation generation process and the cost breakdown structure of tasks performed in manufacturing a representative product.