

# **A Most Advantageous Layout Design by Apposite Line Balancing using Industrial Engineering and Operations Management Techniques: A Case Study**

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## **Abstract**

Manufacturers are now a day's facing intensive global competition. The key to competing in the international market place is to simultaneously improve both quality and productivity on continual basis. This is true today Millions of dollars are wasted each and every day in organization, through lack of awareness of this need to constantly improve productivity. The layout design problem is a tactical issue and has a significant impact on the efficiency of a manufacturing system. The present study discovers the use of appropriate line balancing to facilitate a good layout design. Construction of a quality garment requires a great deal of know-how, a lot of coordination and schedule management. Moreover, the important criteria in garment production is whether assembly work will be finished on time for delivery, how machines and employees are being utilized. To achieve this approach, work-time study, assembly line balancing and simulation can be applied to apparel production line to find alternative solutions to increase the efficiency of the sewing line. In this paper we showed how a good layout can be designed and productivity can be increased by appropriate assembly line balancing.

## **Keywords**

Line Balancing, Efficiency, Operation Bulletin, Production Planning, Standard Allowable Minute

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## **Biography**

**Jiku Das Gupta** is a First Senior Assistant Director of Walton Micro-Tech Corporation a sister concern of Walton Group. Previously he was worked as Sr. Officer in Industrial Engineering Department of Ever Smart Bangladesh Limited (ESBL) a sister concern of Crystal Group a Hong Kong based Multinational Garment Industry. He gained B.Sc. in Industrial and Production Engineering from Khulna University of Engineering and Technology, Bangladesh. He has published conference papers on International Journals and Conferences on Mechanical, Industrial and Energy Engineering (ICMIEE) in the field of Waste Minimization. Jiku Das Gupta has done research projects and Undergraduate thesis project with Kazi Badrul Hasan, Assistant Professor of the Department of Industrial Engineering and Management (IEM) of Khulna University of Engineering & Technology (KUET). His research interests include Lean Manufacturing, Waste Minimization, Supply Chain Management, Manufacturing, optimization, Operations Management, Production Planning, and Lean Manufacturing.