Proceedings of the 5th Annual World Conference
of the Society for Industrial and Systems Engineering,
San Francisco, CA, USA
October 13-14, 2016

Capacity Analysis in the Strategic, Tactical and Operational Levels, of a Cutting Company Knitted: A System Dynamics Approach

A. Ortega[1] and R. Baeza[2]

[1]Master of Science student in industrial Engineering
Centro de Innovación Aplicada en Tecnologías Competitivas
Omega #201 Colonia Industrial Delta C.P. 37545, León, Guanajuato, México

[2]Research professor. University of Guanajuato, Department of Multidisciplinary Studies, México.
Avenida Universidad S/N Colonia Yacatitas C.P. 38940, Yuriria, Guanajuato, México

Corresponding author's Email: anatereoc11@live.com

Abstract: The main objective of this research is to develop a dynamic model that integrates variables of the strategic, tactical and operational levels in a clothing company. The most important variable is set at the strategic level by determining the goals and capabilities of each of the departments. Control specifications at the tactical level of each of the departments are carried out through balance loops. Uncertainty in the model by using a probability distribution function for each of the variables is integrated. Normality test is done and the transformation of the central limit theorem and Johnson transformations for variables that are not normal behavior are used. Use of the array function to fifteen elements to identify different behaviors in laying fabric is done. The results show a significant difference between actual and expected goals, requiring adjustments immediately.
Keywords: Systems dynamic, Central Limit Theorem, Distribution systems, Johnson families.