

Forklift Allocation in Warehouse Operations with Restricted Halls

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Abstract : The logistics facilities design and construction is one of the strategic decisions that critically affects the performance of the company, from the economic perspective and relationship with customers. The case study company is the Colombian logistic sector leader, with over 60 years of experience, with sales of about one hundred twenty million dollars at the end of 2014. The preliminary design for the warehouse layout and operation includes a customer that provides approximately 17% of the profits of the company, considering the possibility of moving two forklifts in the warehouse halls. Some changes were not consider in previous stages of design, operations required forklift with different characteristics, whose size, do not allow the circulation of more than a forklift at a time. Therefore, it is necessary to assess the impact of this restriction on the warehouse operation, so decision makers implement actions to achieve efficient operation. The problem is addressed by recognizing logistics processes, which develop in a warehouse, collection of processes information behavior, the simulation of the current situation using ProModel software, model validation, making adjustments required, experiments design, conclusions and recommendations for the company.

Keywords : design, discrete events simulation, forklift allocation, logistics facilities, warehouse

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