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OPTIMIZATION OF A SINGLE SUPPLIER RAW MATERIALS INVENTORY SYSTEM IN A FABRIC MANUFACTURING PLANT

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Abstract: Inventory management plays a vital role in most of the business organizations today in the competitive business environment as there is always an associated cost component with the inventory. In any industry or manufacturing organization, control of the inventory is highly essential in order to fulfill the requirement of the raw materials, sub-assemblies and other relevancies without any shortage. If there is any shortage, that might interrupt the routine operations of the plant. On the other hand, maintaining an excess amount of inventory is also a burden most of the time. Because most of the costs components associated with the inventory rise up with the level of inventory. In this study, the in-house raw material inventory system of a specific fabric manufacturing plant is considered. In order to optimize the raw materials inventory, a simulation study is conducted with the aid of simulation software. As the results of optimization experiments an optimal reorder point is proposed, leading to a reduction in the raw materials inventory levels, and thereby reducing the overall inventory cost of the organization.

Keywords: Inventory, Simulation, Optimization.