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Warehouse Management: Essential Elements for Its Design. A Proposed Model

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ABSTRACT

The operational management of a warehouse is a crucial component in a company's supply chain, directly influencing the efficiency and competitiveness of the entire organization. A well-managed warehouse not only optimizes logistics costs but also improves customer service quality by reducing delivery times and increasing overall satisfaction. The basic components of warehouse operations include receiving and storing goods, inventory management, picking, and order preparation. Each of these phases requires careful planning and effective execution to ensure that operations are carried out efficiently and without errors. Warehouse organization is not only about creating an effective and efficient process—it must also take place within a properly designed environment. In this context, the paper aims to provide both academics and professionals with a set of elements that must be considered and analyzed in order to correctly design warehouse layouts and processes. Starting from a literature review aimed at identifying the key components used in operational design, the main topics addressed by various authors were examined, leading to the presentation of an analytical model. The proposed model identifies the following core elements in warehouse design: the goods and their management, information systems and information management, space, non-removable physical constraints, internal infrastructure, handling and transport equipment, external infrastructure, processes, and personnel. This study aims not only to provide a practical guide for logistics managers and warehouse supervisors—helping them improve the management of storage spaces and achieve efficiency and sustainability goals—but also to offer material for academic study into warehouse operations.

Keywords: warehouse management, warehouse design, warehouse performance