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Dynamic Raw Materials Scheduling with Stochastic Demand and Space Restrictions

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Abstract: Inside the supply chain, the industry faces numerous uncertainty sources that influence demand forecast. Even though several prediction strategies consider deterministic demand which affects all supply chain echelons including raw materials scheduling and by consequence warehouse and supplier capacities. This in turn generates wastes as inventories, obsolescence and shortages. Attending the mentioned problem it is proposed a dynamic lot-size raw materials model under stochastic demand including warehouse capacity and purchasing minimums restrictions with the objective of minimizing total costs. Are analyzed four different forecasting strategies and is applied the suggested model into a real case study with the specified restrictions. By the other hand we emphasize the importance of a warehouse management system to access to precise inventory information as a key for an accurate lot size.

Keywords: Lot size problem, Stochastic Demand, Forecasting.