An Approach of Multi-product Scheduling with Perishable Characteristic

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ABSTRACT

Because it is full of various competitions and changes in nowadays market, most manufacturers produce various kinds of products to satisfy the demand of customers. When all of customers have various kinds of products to choose, it may be happened that every product is in different demand, and if the uncertainty of the product demand increases, it is hard to make a decision for correct production quantity. We can know that the inventory and overproduction costs are incurred if the cumulative production quantity exceeds the cumulative demand of customers. On the other hand, if the cumulative demand of customers is more than the cumulative production quantity, a penalty will have to be paid for the lost sales. The classical, single-period newsboy problem is to find a product order quantity or a cumulative production quantity that either maximizes the expected profit or minimizes the expected costs of overestimating and underestimating probabilistic demand. But it is always only for single-product to discuss the classical, single-period newsboy problem. It can ’t satisfy the application of business in classical. So in this research, an amplified mathematical mode of the dynamic newsboy problem is suggested to solve and arrange the multi-product scheduling with perishable characteristic. It enables us to make a right decision at each point of time during the planning horizon and minimizes the expected costs.

Keywords : make a decision ; single-period ; newsboy problem ; perishable characteristic ; multi-product

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