

Production Planning & Control >  
The Management of Operations  
Volume 22, 2011 - Issue 3: Challenges in Apparel Production Planning and Control

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# Optimal inventory system with two backlog costs in response to a discount offer

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Pages 325-333 | Received 17 May 2010, Published online: 10 Feb 2011

 Cite this article  <https://doi.org/10.1080/09537287.2010.498613>

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## Abstract

Apparel manufacturing industries face seasonal discount scenarios where the demand for a certain material type is increasing at a specific time, such as wool during wintertime. Suppliers offer a price discount per unit during a period in order to increase the cash flow or decrease the inventory of certain items. The buyer (manufacturer, retailer, etc.) must improve his inventory systems in order to get the maximum benefit during the discount period. This paper presents a two-backlog inventory system and the supplier's discount policy. The system is designed to place the order when the inventory level is at a certain point and the order quantity is determined by the supplier's discount policy. The system is designed to place the order when the inventory level is at a certain point and the order quantity is determined by the supplier's discount policy. The system is designed to place the order when the inventory level is at a certain point and the order quantity is determined by the supplier's discount policy.

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optimal special quantity. Finally, a numerical analysis is used to demonstrate the impact of these factors.

Keywords: backlog sale period optimal order quantity discount offer

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