Abstract

Supply chain management is a crucial task of managing large organizations. In a decentralized supply chain each member focuses on maximizing his own profit. As a result of it, the conflict between the manufacturer and the retailers will arise. To avoid this sort of situations, coordination model strike a balancing between the profit of manufacturers and retailers. This paper investigates a two echelon supply chain system which consisting of one manufacturer and multiple retailers. Using the mathematical modeling a coordination model which maximizes the total profit is developed and analyzed for deteriorating items. The optimal pricing and ordering policies of the model are also derived. A sensitivity analysis with respect to the parameters and costs is also presented. This model lower down the total cost of supply chain and increases the general profit. It also improves cooperation for both manufacturer and retailer.

References

- Goyal S K, Giri B C. (2001) "invited review recent trends in modeling of
deteriorating inventory". European journal of operational research, 9134, pp 1-16.
- Abdullah Eroglu, gultekin Ozdemir. (2007) "An economic order quantity model with
defective items and shortages". International journal of production economics. 106 (2), pp 544-549
- LUO Jain, QTU Hong-quan, DONG Weiwei(2007). "An EOQ Model for
deteriorating items with Backlogging". Mathematics in Practice and Theory, 37(6), pp 6-10
approach for solving the lot-sizing problem with time-varying storage capacities". European Journal of Operational Research, vol 189, pp -682-693
contract model for a decentralized assembly system". European Journal of Operationa
Research, (187), pp 257-274
- CACHON G P(2004). "The allocation of inventory risk in a supply chain: push, pull,
and advance-purchase discount contracts". Management Science, 50(2), pp 222- 239.
quantity discount policy". Naval Research Logistics, (40), pp 971-991.
- ZHAO Quanwu, XIONG Zhongkai, YANG Xiutai, BU Xiangzi(2005). "Study on
quantity discounts in a two-echelon supply chain for perishable goods". Journal of
- Chung-Chi Hsieh, Cheng-Han Wu, Ya-Jing Huang (2008). "Ordering and pricing
decisions in two-echelon supply chain with asymmetric demand information". European
supply chain for deterioration items". International conference on automation and logistics
Qingdao, China September. pp 1339-1343.
optimizing advertising, pricing and inventory policies in vendor managed inventory (VMI)
- Yao, Y. , Dong, Y. , & Dresner, M. (2010). Managing supply chain backorders under
vendor managed inventory: An incentive approach and empirical analysis. European Journal of
operational research, 203(2), pp 350-359.

Index Terms

Computer Science Operational Research
Keywords
Supply Chain  Coordination Model  Eoq  Epq