LITERATURE REVIEW

Supply chain models are very much important in inventory control situations. An effective supply chain network requires a cooperative relationship between the manufacturers, the distributors and the retailers. Clark and Scarf (1960), presented the concept of serial multi-echelon structures to determine the optimal policy. Schwarz (1973) and Muckstadt and Roundy (1987), derived one-warehouse, multi-retailer distribution system without considering the factor of deterioration.

Manmohan (1984), was one of the early authors who analyzed a vendor-oriented optimal quantity discount policy that maximized the vendor’s gain; it was done at no additional cost to the buyer. Lee and Rosenblatt (1986), generalized Manmohan’s model and developed an algorithm for solving the vendor’s ordering and discount-pricing policy. Banerjee (1986), derived a joint economic lot size model for a single vendor, single buyer system where the vendor has a finite production rate. Goyal (1988), extended Banerjee’s model by relaxing the lot-for-lot production assumption. Hill (1989), derived a central-warehouse, multi-retailer model with shortage using simulation.

Lu and Postrer (1994), introduced two heuristic procedures for the one warehouse retailer system. Ha and Kim (1997), used a graphical method to analyze the integrated vendor-buyer inventory status to derive an optimal solution. Wee (1998), developed a lot-for-lot discount pricing policy for deteriorating items with constant demand rate. Wang
(1999), developed a framework to address the problem of coordinating decisions of the manufacturer and the distributor operating to meet price-sensitive random demand for a product with a short product life cycle. Yang and Wee (2000), developed an integrated economic ordering policy of deteriorating items for a vendor and a buyer.

Wu and Wee (2001), extended the paper by Yang and Wee (2000), consider multiple lot size deliveries. Yang and Wee (2003), developed an optimal quantity-discount pricing strategy in a collaborative system for deteriorating items with instantaneous replenishment rate. Yang (2005), presented a comparison among various partial backlogging lot size models for deteriorating item on the basis of maximum profit.


Lo et al. (2007), presented a production model with imperfect process and weibull deterioration under inflation. Chung and Wee (2007), developed optimizing the economic lot size of a three-stage supply chain with backordering derived without derivatives. Rau and Ouyang (2008), introduced an optimal batch size for integrated production–inventory policy in a supply chain. Kim and Park (2008), assumed development of a three-echelon SC model to optimize coordination costs. Jaggi and

Jain and Singh (2011) considered a multi-echelon supply system comprising of a supplier, a retailer and the end customer. The inventory is deteriorating and has a certain expiration date beyond which there is no demand for the item. The effect of inflation has been accounted for to provide economic feasibility to the model.