INTRODUCTION

The supply chain encompasses all activities associated with the flow and transformation of goods from the raw materials stage (extraction), through to end users, as well as the linked information flows. Inventory represents one of the most significant possessions that most businesses possess. It is in direct touch with the user department in its day today activities.

Inventory management is playing a key role in setting up efficient closed loop supply chains. Inventory control theory has become well used in industry with the development of mathematical models. Initial models were mainly for a single company and were optimized on the total inventory cost to find out when it was best to order and how much. These were and will remain the main questions behind every inventory control model.

The next addition to the models is to consider two or more companies. This can generally do for the case of the warehouse-retailer. Also since a single company controlled both the operations at the warehouse and the retail organizations, it is best to consider them together. A supply chain is a network of facilities and distribution options that performs the functions of procurement of materials, transformation of these materials into intermediate and finished products, and the distribution of these finished products to customers. It consists of a network of companies which are dependent on each other while making independent decisions.

The supply chain not only includes the manufacturer and suppliers, but also transporters, warehouses, retailers, and customers themselves. Therefore, supply chain
analysis tools and methodologies have become more and more important. It can be a source of great efficiency and cost-savings gains. Supply chain speed and flexibility have become key levers for competitive differentiation and increased profitability. The faster the supply chain, the better a company can respond to changing market situation and the less it needs inventory which resulting in higher return on capital employed. Supply chain management offers a large potential for organizations to reduce costs and improve customer service performance.

In real life, there are some items which get deteriorated with time. Without considering the deterioration in inventory models, it can not be complete and genuine. Deterioration means the falling from a higher to a lower level in quality, character or vitality. It implies generally the impairment of value or usefulness.

The purpose of the proposed study is to develop new models on supply chain for deteriorating items. We hope that the proposed study has a great potential to solve various practical tribulations related to the supply chain situations.