Note: 2 min = 260 words 🡪 10 sec = 20 words 🡪 1 min = 130 words

Executive Summary (10 sec)

Later, we estimate MediCrystals’ Obsolete Inventory and its change in inventory position. For this, we consider a Deterministic Demand model with

* Constant APU after considering its trend and
* Selectively zero order inventories

Obsolete Inventory (40 sec)

Moving on, as the expiry for all SKUs is 1 year, we deployed our model on a 1-year timeframe. For an obsolete SKU, its obsolete inventory is equated to the **difference between its Initial Inventory and yearly demand**. For calculations, both demand and delivery lead times are taken to be normally distributed. We find that, in total there are **32 Obsolete SKUs** which account to a total obsolete inventory of around **fifty thousand dollars**.

After analyzing the order placement heatmap, on an average 94 SKUs are found to be ordered for replenishment daily. Hence, to cover up for this obsoletion – cost reduction can be done in terms of Order Aggregation from suppliers and equating the lot size to the economic order quantity.

Working Capital Impact (50 sec)

As per our model, an SKU is replenished, when its inventory falls below its reorder quantity. The order quantity is set to sum of lead time demand and safety stock. This leads to the inventory stabilizing within one-third period of our time frame. We succeed to achieve an average service level of **ninety-seven-point seven percent** with a **negligible stockout out loss** that is six percent of demand. ABC classification of SKUs shows **eighty-five percent** SKUs have a service level higher than **ninety-five percent** and thus form class A.

Considering our assumptions, change in inventory position is equated to the sum of change in initial and final inventory levels and the final on order inventory. For the overall working capital impact, as per the change in inventory position, value of assets under inventory increases by **one fifty-three million dollars**.

Conclusion (10 sec)

Estimated obsolete inventory is **fifty K dollars** and change in Inventory position is **one fifty-three M dollars.** We recommend MediCrystals to focus on increasing its inventory turnover ratio and source high time lead SKUs from local suppliers.