

Background

- Vanity Fashions (VF's) LLC is one of Canada's largest wholesale distributors of nickel-free jewelry, selling to over 6000 retail, drug, and discount stores nationwide.
- The nature of fast fashion jewelry trends dictates an unpredictable environment in which VF's may not know the demand of an item until the season has already begun while orders must be placed to manufacturers 7- 9 weeks in advance.



Figure 1: Vanity Fashion's "Just Because" Pin Display



Figure 2: Vanity Fashion's "Sensitique" Earring Display For Sensitive Ears

Problem Definition

- Fast fashion's demand uncertainties cause VF's to have high levels of capital tied up in inventory due to the fixed safety stock percentage of 30% utilized for all new items.
- In addition, there are discrepancies in VF's on-hand inventory counts and their inventory management software (Sage) due to the manual use of transfer forms in the drug store returns process.
- The imprecision in VF's inventory management software creates a system whereby certain Key Performance Indicator(KPI's) metrics are calculated inaccurately.

Project Scope

- Optimal Safety Stock: Testing different safety stock levels for certain high, medium and low demand items.
- 2D Scanner: Eliminating the use of the transfer forms for drug store returns by implementing the use of a 2D- scanner for the processing of returns.
- Drug Store Returns Data: Categorizing drug store returns in Sage more efficiently with the use of the 2D-scanner will reduce inaccuracies in inventory as well as increase the accuracy of the deviation report.
- Demand Model: An automated demand model to estimate order quantities that can be utilized as opposed to the current manual process.
- KPI's: Research widely utilized KPI's for fast fashion trends.

Methods & Analysis

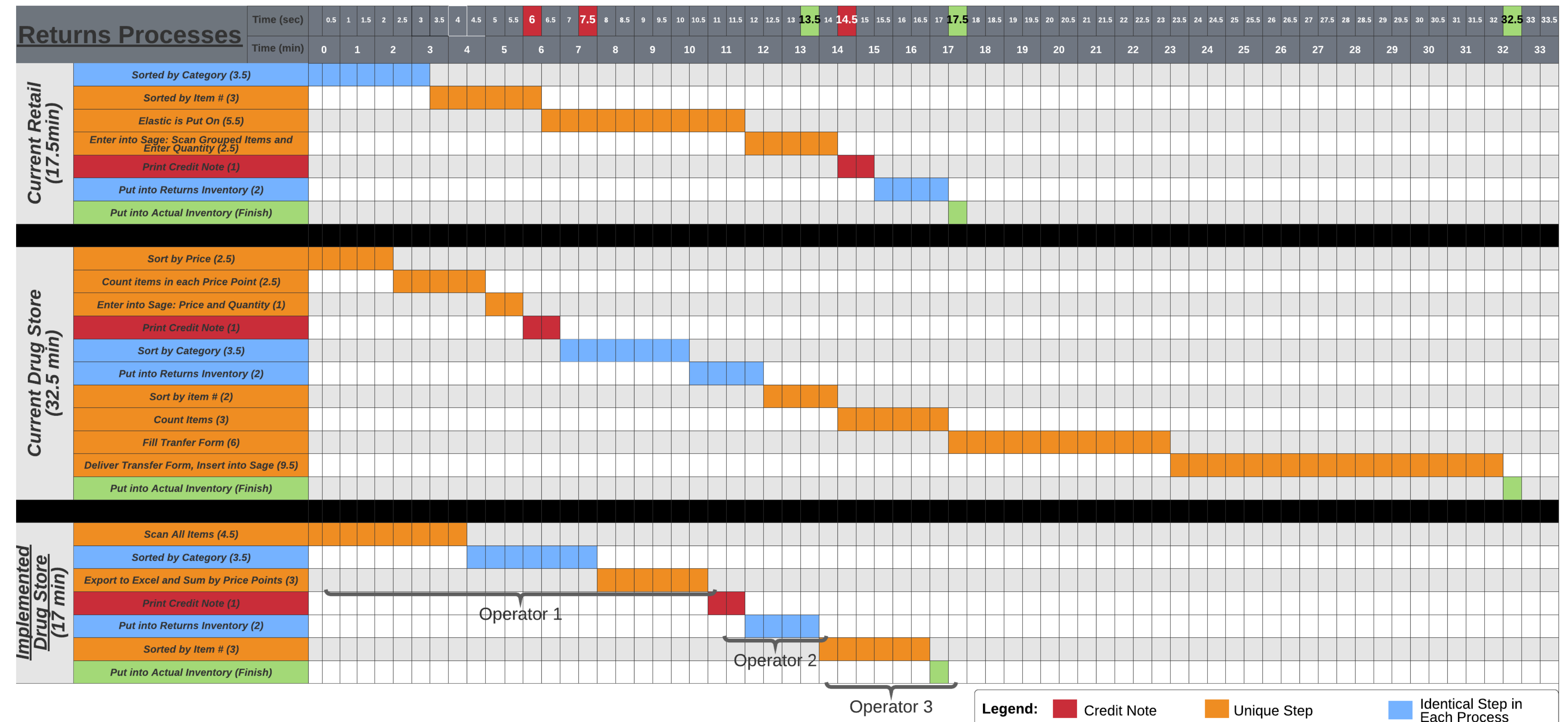


Figure 3: Returns Process Time Analysis for 85 Items

Safety Stock

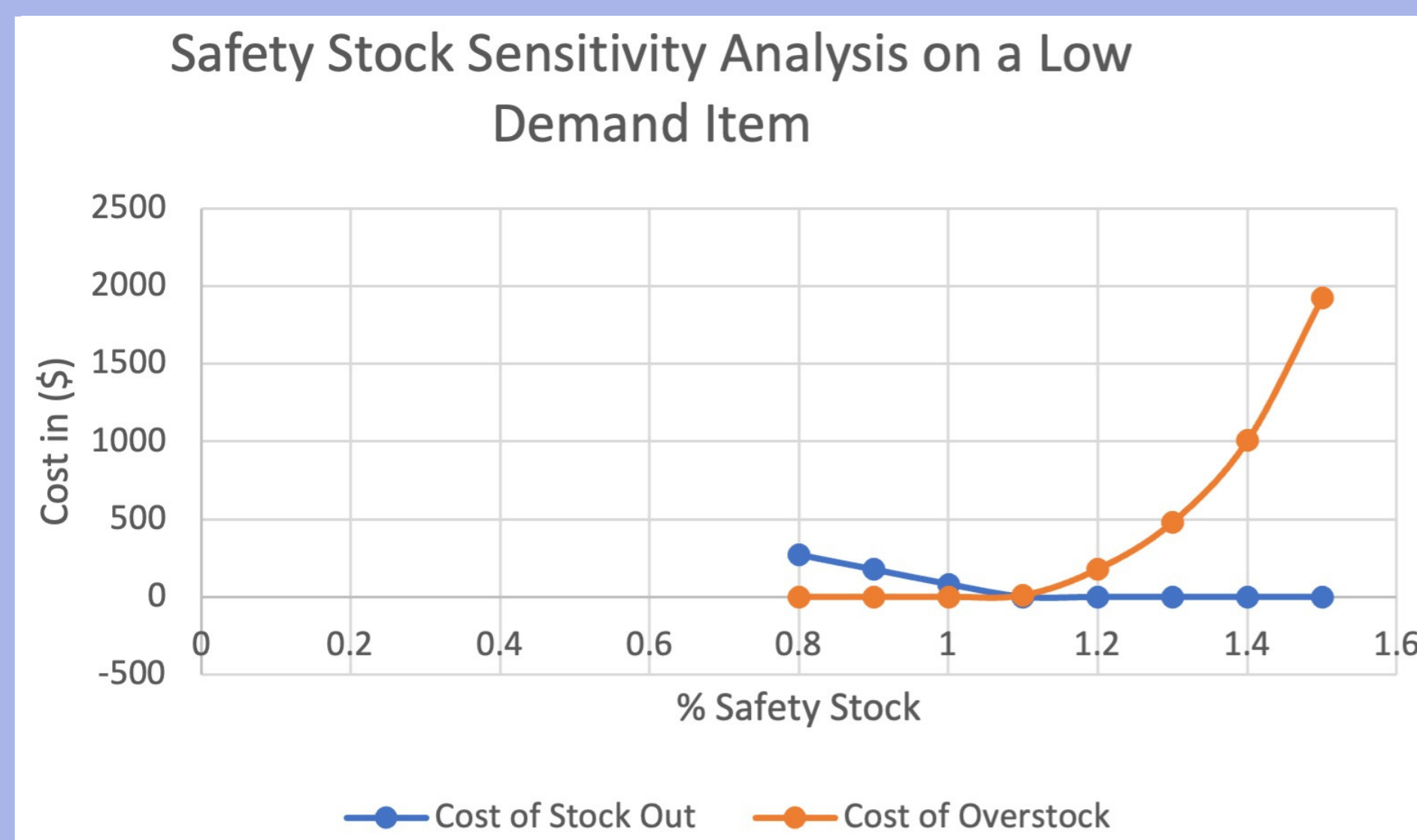
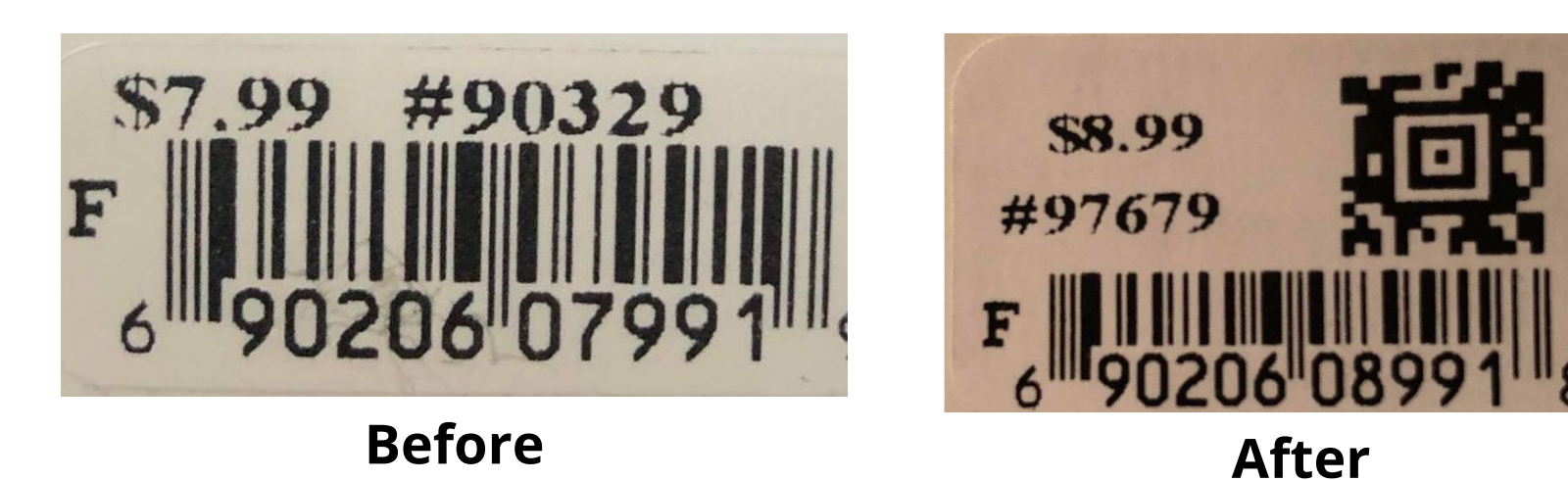


Figure 4: Optimal Safety Stock For New Items With Low Demand

Picture of Aztec Code



Overall reduction of returns processing time by 47%.

Figure 5: New Aztec Barcode On Jewelry Cards

Automated Order Model

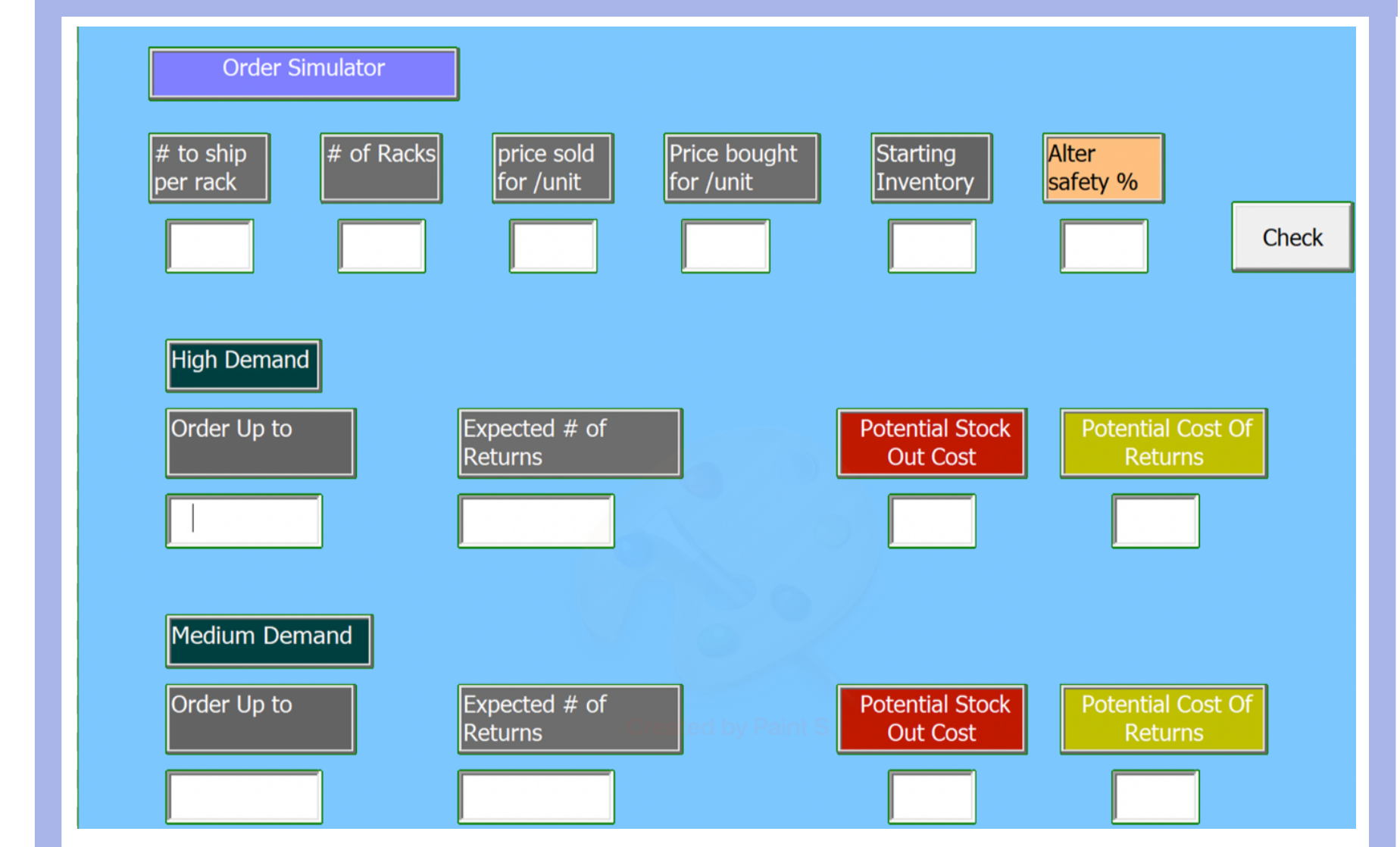


Figure 6: Automated Demand Order Form

Final Design Outcomes

- The automated demand model will allow VF's to calculate order quantities and predict demand for re-occurring high-selling items.
- Understanding optimal safety stock levels for varying demand levels will aid in reducing the amount of slow-selling items leaving capital tied up in inventory.
- Scanning each item with a 2D- scanner reduces errors and speeds up the returns process by 47% for approximately 200,000 drug store items a year.
- The use of the 2D-scanner will eliminate a workstation in the returns area.
- Recommendations of a tracking system with KPI's for the VF's business will help identify areas of underperformance in real-time so remedial action can be taken faster. Data would be collected regarding sales, returns, costs etc., periodically.

Implementation

- Implemented a 2D Aztec barcode so there is no interference when scanning current 1D UPC barcodes in stores.
- 100% implementation required a 2D barcode scanner, amendments in Sage credit notes and inventory adjustments, and lastly, Standard Operating Procedures for employees.
- An instruction manual will be included to help explain the process of using the automated ordering model.
- Reports will be recommended to visualize the results of the collected KPI's.