Assignment 1: Initial exploration of a study site

Keywords:

Name of organization: Skyland Supermarket

Nature of business: Supermarket

Sector (one or more keywords): Retail

Business process description: Shipping Product & Inventory

The organization:

The Skyland supermarket is situated in Scarborough, Toronto, Canada. The organization includes approximately 65 employees. Current challenges revolve around operating costs, particularly in terms of direct labor expenses. With the General Hourly Minimum Wage Rates in Canada increasing from $11.25 in 2015 to $16.55 in 2023 [1], there has been a direct impact on operating costs. Skyland is actively pursuing transformation and placing emphasis on enhancing employee efficiency.

The business process:

Skyland Supermarket has customers buying products daily. Simultaneously, it requires dedicated staff to regularly verify inventory and promptly restock goods. Typically, the Inventory Manager handles inventory counting. This allows them to make immediate purchases from various suppliers without requiring approval from others, directly enhancing replenishment efficiency. Skyland sources goods from various channels, including the Ontario Food Terminal Board, the largest wholesale fruit and produce distribution center in Canada, for fresh local fruits and vegetables. The Inventory Manager visits the Ontario Food Terminal Board to place orders with different suppliers. Transactions are usually settled by check. After payment, the Inventory Manager sends the product checklist and shipping request to the driver. Upon receiving the checklist, the driver goes to the pickup location and checks the products to ensure their accuracy. If any discrepancies arise, the driver contacts the supplier to resolve the issue. Once all items are ready, the driver transports the goods and products to the warehouse, where inventory workers receive them.

In my opinion, the replenishment process is crucial in supermarkets. When goods are insufficient, customers may choose other supermarkets because they often lack the items they want. Replenishment affects a supermarket's cash flow and understanding of customer needs. The main activity of the inventory manager is to predict and measure how many products need replenishment. For example, if certain products have lost popularity with customers, the inventory manager might decide not to replenish them anymore. However, some products have recently gained popularity, such as Halloween items, with customers more inclined to buy large pumpkins for decorating their houses. This presents a significant challenge for the inventory manager, as it requires a lot of experience. Simultaneously, the inventory manager also needs to obtain information about the quality of products from suppliers to ensure that their customers receive high-quality items. Typically, the inventory manager must visit the dealer in person to ensure product quality and contact the driver via call or text to arrange product pickup and supply a manual checklist. If the inventory manager makes an incorrect judgment about

what to buy due to demand or low product quality, it can lead to customer reluctance to buy and result in losses for the supermarket.

Suitability:

Automation: Use the Automatic Identification System (AIS) and Radio-frequency identification (RFID) replenishment processes, along with data analysis and machine learning, to predict customer shopping preferences.

An AIS helps Skyland Supermarket convert goods and products into electronic form, making them easily manageable. RFID tags provide unique identification that enables item tracking and monitoring. An example of an application for Skyland can be to install RFID tags on each box of packaged goods. When a box of packaged goods leaves the warehouse, it will be scanned by the AIS. In the database, the product will be counted and recorded, including the date and the product's sales speed. The low-cost and efficient RFID tags allow inventory managers to visualize products on a computer without the need for in-person inventory counting. Furthermore, RFID tags are a crucial step in converting actual products into valid virtual data. This is especially useful for Skyland Supermart, as it enables them to use this data and apply statistical models to predict what customers will want to buy in the next day or week.

Innovation: Blockchain technology can enable everyone to track the production place, packaging, and transportation of goods, thereby building user confidence in the food safety of their purchases.
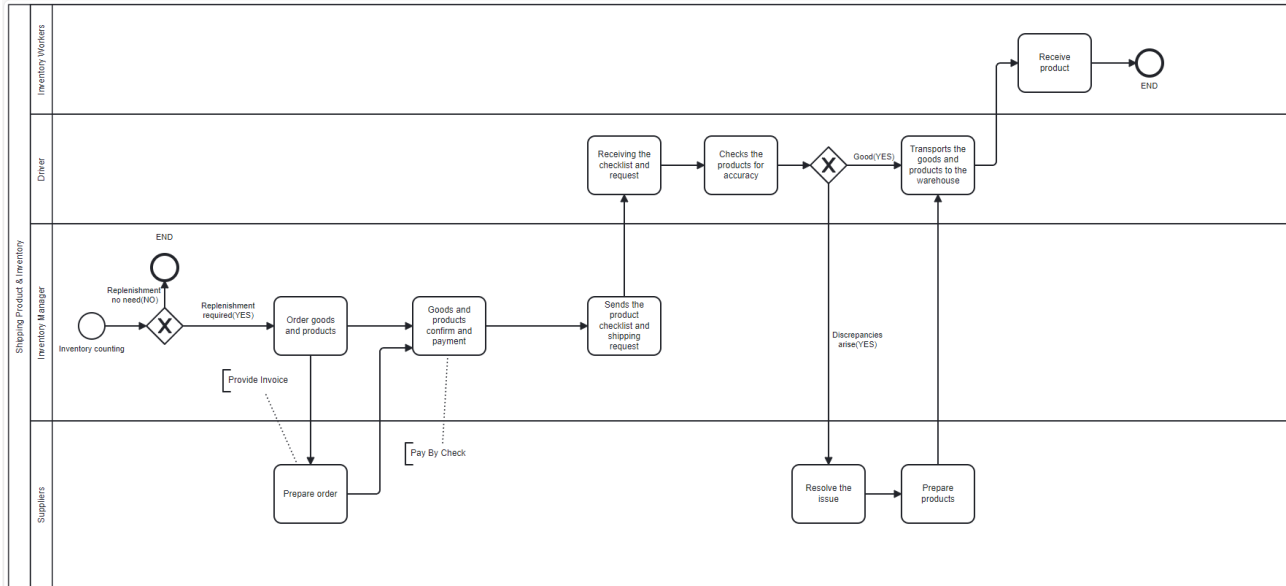
Recently, Japan has discharged nuclear wastewater despite the dissuasion of other countries, causing global concern about future food safety. Customers have the right to know where their seafood comes from, not just the name of the fish on a label. Skyland can implement a blockchain-backed system for supply chain monitoring. The unique security and credibility of blockchain make it impossible to tamper with food data. Simultaneously, when customers receive seafood, they can access all information about the product through the blockchain to ensure that the food is delivered to customers under pollution-free conditions. From Skyland to the supplier's side, transactions are always timestamped and up to date. Skyland can query the product's status and location at any point in time. On the other hand, from Skyland to the consumer side, immediate action can be taken during emergencies such as product recalls. In addition, by combining the Internet of Things with blockchain, supply chains can automate tracking of the conditions of production, transportation, and quality control.

Transformation: Actively change the business structure to increase the number of customers by expanding online shopping and delivery services and reducing the number of cashiers through the implementation of self-checkout services.

Covid-19 has greatly impacted people's lives and changed everyone's lifestyle, with some choosing not to shop in person due to concerns about contacting too many people. For them, this convenient shopping method reduces their time cost, and if Skyland did not provide such services, it might lose current customers and potential customers. Innovation from blockchain can significantly support online shopping by tracking inventory, making online inventory more accurate. Customers can also use blockchain services to check the product status and figure out the exact delivery time. Self-checkout allows customers to maintain an adequate social distance from Skyland employees and enables the addition of more checkout ports while reducing the number of employees needed. In conclusion, by implementing self-checkout services, online shopping, and delivery services, Skyland can reduce the direct impact on operating costs and increase the number of customers

Accessibility: General manager from Skyland.

BPMN model:

REFRENCE:

[1] "General Hourly Minimum Wage Rates in Canada since 1965", Government of Canada,
https://srv116.services.gc.ca/dimt-wid/sm-mw/rpt2.aspx