# Solution Development Plan

**Solution: Thrift Exchange**

**Owner(s): Jack Cahill**

**Date: 10/1/2020**

# Change Log:

|  |  |  |
| --- | --- | --- |
| **Who** | **When** | **What** |
| Jack Cahill | 10/1/2020 | Denormalized the database |
| Jack Cahill | 10/2/2020 | Began brainstorming questions |
| Jack Cahill | 10/2/2020 | Solidified business requirements and began on IP |
| Jack Cahill | 10/3/2020 | Finished object worksheet and star schema |
| Jack Cahill | 10/4/2020 | Revised object worksheet |
| Jack Cahill | 10/4/2020 | Wrote, edited, and finalized executive summary |
| Jack Cahill | 10/5/2020 | Created visual studio solution with this word doc, the object worksheet, and the star schema |
| Tara Graeve & Max Potter | 10/5/2020 | Peer Reviewed Phase I |
| Jack Cahill | 10/7/2020 | Added tables to ThiftExchange OLTP so it can be denormalized |
| Jack Cahill | 10/10/2020 | Wrote DM build script |
| Jack Cahill | 10/10/2020 | Changed Star Schema and Object worksheet to fully match the DM build script |
| Jack Cahill | 10/10/2020 | Added DM Build to visual studio and ran the script |
| Jack Cahill | 10/10/2020 | Created a database diagram in SSMS and checked for keys, relationships, and attributes |
| Tara Graeve & Max Potter | 10/12/2020 | Peer Reviewed Phase II |
| Jack Cahill | 11/19/2020 | Wrote all the source query scripts for each dimension table |
| Jack Cahill | 11/20/2020 | Created the Visual Studio package DM build and began loading in all the dimensions and fact tables |
| Jack Cahill | 11/20/2020 | Renamed everything with appropriate and uniform names |
| Jack Cahill | 11/20/2020 | Rewrote the DM Build to add start and end dates to both location and customer to keep a historical record of if the Customer Category or Location Category changes |
| Jack Cahill | 11/30/2020 | Modified the slowly changing dimensions to incorporate type 2 or historical attributes and updated IP and Star Schema accordingly |
| Tara Graeve & Max Potter | 11/30/2020 | Peer Reviewed Phase III |
| Jack Cahill | 10/25/2020 | Loaded in more data and made appropriate name changes as part of Phase III feedback |
| Jack Cahill | 11/5/2020 | Loaded in data to PowerPivot from ThriftExchange DM and began preparing DAX calculations |
| Jack Cahill | 11/6/2020 | Finalized DAX calculations in both measures and columns |
| Jack Cahill | 11/7/2020 | Created PivotTables based off of DAX calculations and measure columns and added in Pivot Charts |
| Jack Cahill | 11/8/2020 | Finished writing analysis and recommendations based off of PivotTable and PivotChart findings. |
| Tara Graeve & Max Potter | 11/9/2020 | Peer Reviewed Phase IV |
| Jack Cahill | 11/15/2020 | Made minor changes based on Phase IV critique |
| Jack Cahill | 11/19/2020 | Setup Power BI environment including executive summary and themes |
| Jack Cahill | 11/24/2020 | Began writing DAX measures and columns |
| Jack Cahill | 11/29/2020 | Research into proper charts and created charts in Power BI reports |
| Jack Cahill | 11/30/2020 | Wrote the analysis and recommendations |
| Tara Graeve | 11/30/2020 | Peer Reviewed Phase V |

# Executive Summary

The implementation of a data mart will greatly advance Thrift Exchange’s business intelligence in three main categories: optimized reporting, archival of data, and consolidation of data. A data mart will provide Thrift Exchange with optimized reporting in the area of sales. Through this, Thrift Exchange will better understand their customer demographics between locations, as well as look at clothes that tend to sale quicker in order to boost inventory turnover. With this optimized reporting, Thrift Exchange can really focus on their sales strategy and reward employees who are picking the best clothes from their donors.

Secondhand clothing companies tend to have a complicated archival of data which can all be fixed by a data mart. By implementing a data mart for Thrift Exchange, the company will be much more organized and can find the data they need, when they need. By archiving data, Thrift Exchange can better understand the history of fashion and consumer interests. Through analysis on how data changes through the seasons and years, Thrift Exchange can begin to predict consumer interests in the future months and better select clothes that customers wish to purchase.

Finally, the data mart will allow for consolidation of data which is paramount to Thrift Exchange’s organization. Data consolidation will help synchronize data between the new locations Thrift Exchange has opened. This will make the process of analyzing incoming data from multiple locations much more efficient. In addition, the data will be much less prone to errors so Thrift Exchange can truly rely and their findings.

# Business Requirements

* **Which clothing is selling the best based on customer demographics, season, year, location, temperature, and clothing characteristics? In addition, does markup price and quantity affect clothing sales?**

***For:*** *Fashion Manager*

***Reason:*** *Through this, the business will be better at finding which employees pick the most profitable clothes and determine which styles or types of clothes is profitable amongst different customer demographics. Thrift Exchange will also be able to better communicate with their different locations and determine which inventory should be held at which store.*

* **How much should clothing be marked up after purchasing from a donor to selling to a customer based on brand, clothing condition, location, and seasonality?**

***For:*** *Financial Analyst*

***Reason:*** *After purchasing clothes from donors, Thrift Exchange has been inconsistent in pricing clothing for sale. Therefore, it is very important to capitalize on pricing and ensure that Thrift Exchange is selling their clothes at a profitable yet reasonable price.*

* **How long are clothes remaining on Thrift Exchange’s shelves by month and season, location, temperature, clothing type, gender, price and the clothing markup factor?**

***For:*** *Owner and Clothing Manager*

***Reason:*** *When clothes stay on a shelf for too long, customers have to sift through clothes that are clearly not desirable and can be dissuaded to leave without finding anything. Therefore, it is important that Thrift Exchange takes control over their inventory and ensure that unsellable clothes exit the shelfs to bring in more desirable clothing.*

# Information Package

**Information Subject: Sales**

**Dimensions**

**Hierarchies**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Date*** | **Location** | **Customer** | **Clothing** |
| *Year* | *Location Address* | *Customer Address* | *Clothing Type* |
| *Quarter* | *Location City* | *Customer City* | *Clothing Brand* |
| *Month* | *Location State* | *Customer State* | *Clothing Size* |
| *Date* | *Location Zip* | *Customer Zip* | *Clothing Color* |
| *Day of Week* | *Location Category* | *Customer DOB* | *Clothing Gender* |
| *Day of Month* | *Location Start Date* | *Customer Gender* | *Clothing Condition* |
| *Season* | *Location End Date* | *Customer Category* | *Clothing Category* |
| *Holiday Flag* |  | *Customer Start Date* |  |
|  |  | *Customer End Date* |  |
| **Facts**: Buying Price, Clothing Price, Discount, Date Accepted, Sale Date, \*Profit, \*\*Days on Shelf | | | |

**Derived**:

\* Profit (Sale Price – Buying Price – Discount)

\*\* Days on Shelf (Sale Date – Date Accepted) OR (Today – Day Accepted)

* Note: Location and Customer Start and End date are used for historical recordings of when a customer or location changed categories.