**Fudge Mart Corporation**

**IST 722: Data Warehouse**

**FINAL PROJECT**

**Project Charter**

**SUBMITTED BY: Peniel Aponte**

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**COMPANY DESCRIPTION**

FUDGE MART :

Fudgemart is a fictitious online retailer, similar to Amazon.com or Walmart.com. The database consists of customers, products, and vendors, and has familiar business processes you would find in any online retailer. The database for Fudgemart is called Fudgemart\_v3.

FUDGE FLIX :

Fudgeflix is a fictitious online DVD-by-mail and video-on-demand service, similar to Amazon Instant Video or Netflix. The database for Fudgeflix is called Fudgeflix\_v3 and contains concepts such as accounts, subscriptions, and video titles, as well as other things associated with an online video-streaming service.

**PROJECT ORIGIN AND OBJECTIVE**

Fudgemart, Inc. has hired our team to build a BW/BI solution from scratch. Fudgemart, Inc. is a fictitious conglomerate with two subsidiary companies, Fudge Mart and Fudge Flix. FudgeMart currently does not have any Data Warehouse or BI Solution for analyzing its day to day data.

Our objective is to create a Data Warehouse and BI Solution for FudgeMart and provide them with insights and understanding of their data. In addition to suggestions on how to properly use their data to make product and marketing improvements.

**PRIMARY ROLES WITHIN THE TEAM**

1. Peniel Aponte - Database Administrator
2. Palak Nyati - Business Intelligence Reporting
3. Rahul Rathod - ETL Processor

**PROJECT TIMELINE**

1. Project Milestone 1 - completed by 02/24/2019
   1. Identification of business processes
   2. High level dimensional modeling
   3. Presentation for the achieved tasks
2. Project Milestone 2 - completed by 3/18
3. Detailed dimensional modeling

1. Project Milestone 3 - completed by 04/27
2. ETL Process
3. Cubes in Analysis Service
4. BI Reports in Power BI
5. Presentation - presented on 04/29/2019
   1. Included:
      1. Business Processes
      2. Project Workflow
      3. Power BI screenshots
      4. Conclusions
      5. Future Scope

**FUNCTIONAL REQUIREMENTS**

1. Customer Analysis:
   1. Demographics
   2. Spending Amount
   3. Product Quantity
   4. Order Total
2. Order Analysis:
   1. Order Dates
   2. Geography
   3. Order Ship Lag Day
   4. Order Count

Shipment Analysis

1. Analyzing the shipping lag time - aimed to help improve inventory management
2. Drilling down into state with highest number of orders and analyzing the average shipping lag
3. 2011 Performance was good in terms of minimum shipping lag

Customer Analysis (Complex Business Process)

1. Highest revenue generating business is definitely Fudge Mart
2. Another interesting thing to notice is that we have less number of customers in Fudge Mart
3. If we drill down, we notice that Friday generates the highest revenue.

### **Deliverables**:

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1. High-level dimensional modeling worksheet: This is where we turn functional business requirements into dimensional data warehouse (DDS) specifications. In this modeling worksheet we will be presenting our bus-matrix, attributes and metrics. The Bus Matrix will be used to showcase the dimensions and fact tables that correspond to the business processes. We will also be tracking issues and providing a list of each.

2. Detail-level dimensional modeling worksheet: This document is where we complete the technical designs for our DDS by completing the specifics of the fact and dimension table implementations. We will be able to identify sources as well as provide macros that will help generate the SQL code for a schema and tables of the data warehouse.

3. Data Warehouse on SQL Server: A schema for data warehouse will be generated and available for view on SQL server.

4. ETL implementation on SSIS: After the successful completion of a data warehouse on SQL Server, we will build packages with the use of Microsoft Visual Studio SSIS tools for extracting data from data source, staging it into stage database and finally transforming and loading data into data warehouse.

5. Business Intelligence: In this portion we will be creating MOLAP cubes. The cubes will created through the microsoft Visual Studio SSAS tool. Once the cubes are created we will be able to proceed to the next step. Which involves using our Cubes in Microsoft PowerBI Tool so that we can generate dashboards for business insights.

**CONCLUSIONS DRAWN TO SUPPORT DECISION MAKING**

Through our DW/BI Solution we were able to notice that there were many similarities and differences between the clientele demographic as well as within orders and shipments**.** One of the biggest things we noticed was the difference in the total revenue between Fudge Mart and Fudge Flix. FudgeMart has a total revenue of 2.09M while Fudge Flix total revenue of 37.73K only makes up 1.2% from the overall Fudge Mart corporations revenue. Sunday generates the lowest revenue so looking into a way of luring more people to buy on that day, possibly through the introduction of discounts and deals.

In regards to shipping the clothing department has a high average shipping lag and only one vendor. The hardware department shipping lag is also very high with the same issues as the clothing department, with only having one vendor. The best solution for this issue would be to find another vendor that provides better services to decrease the shipping lag time.

Fudge Mart and Fudge Flix have a very different client base per state. Fudge marts clientele is primarily from California while for Fudge Flix the biggest customer count is in New York state. Providing bundle deals or packages for customers that have a fudge mart account as well as a fudge flix account could increase the customer count in states where one overpowers the other.

Overall we can see that looking at profits to identify the highest generating business and products can provide the proper insights on where Fudge Mart should focus their marketing and improvement efforts. Increasing their marketing in states with lower customer account, using predictive analytics for product to help reduce shipping lag as well as tracking peak promotional times would help improve FudgeMart Corporation.