Fudge Corporation

Data Warehouse Project

Project Charter

Submitted by:

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Project Charter – Revision 04/29/2019
Project Name: Fudge Corp. – Data Warehousing Project

Summary of Project Origins and Objectives:

FudgeCorp. is a conglomerate company with two subsidiaries Fudgemart and Fudgeflix.

One of its subsidiaries, Fudgemart is an online retailer that sells wide variety of products in multiple product categories. This company supports a database of products, customers, employees, products and vendors. Also, it stores the product reviews given by customers in the form of review stars.

Another subsidiary of FudgeCorp i.e. Fudgeflix is an online website that provides DVD-by-mail and video-on-demand service. This company provides various plans to its customers that is streaming, rental or a hybrid pan of streaming and rental. Further, it supports a database of accounts, subscriptions and video titles corresponding to the customers.

In an effort to address the expressed concerns of FudgeCorp. to have a central data repository for the data needed to support reporting, analysis and other BI functions, Prof. H. Khan has initiated this project. Professor has appointed Faculty Assistant Harsh Takrani as the primary point of contact. This project mainly focuses on four tasks:

1) Extracting data from Fudgemart and Fudgeflix OLTP data sources.
2) Loading required dimensions and fact tables in Data Warehouse.
3) Fetching data from External Sources database which has some useful datasets for data warehousing.
4) Developing a PowerBI Dashboard for mining actionable business insights.

Business Case:

The project focuses on developing a data warehouse utilizing ETL tool Microsoft SSIS. ETL process performs extraction of data from available Fudgemart and Fudgeflix databases and loading into a data warehouse. This data warehouse will help the stakeholders to provide business solutions to improve the business processes involved in Fudgemart and Fudgeflix. The team utilizes Microsoft PowerBI tool to build dashboards and provide actionable insights to the stakeholders.

Organizational Context:

This project is scheduled to commence on February 11, 2019 and targeted to be completed by end of Spring semester of school that is April 29, 2019. The access to the existing databases is provided to all the team members. Also, access to an empty database for stage and data warehousing is provided on SQL Server by the professor. The validity of all the software to be used such as SQL Server, SSIS, SSAS and PowerBI is tested before proceeding further into the project**.**

Sponsor: Fudge Corporation's CEO Michael Fudge

Stakeholders:

- Michael Fudge, CEO, Fudge Corp.
- Humayun Khan, Director of Operations, Fudge Corp.
- Harsh Takrani, Point of Contact, Fudge Corp.
- Yash Kapadia, Fudge Corp.
- Yash Bhansali, Fudge Corp.
- Nitin Nagpal, Fudge Corp.
- Deepak Sharma, Fudge Corp.
- Om Dhuru, Fudge Corp.

Project Scope:

In-Scope Activities:

- Draft of Functional Requirements:
- Identification of Business Processes:
    - 4-5 simple or complex business processes are identified for initial dimension modeling.
    - We will select one simple and one complex process for detail-level dimension modeling.
- Documentation of Dimensions and Fact Tables:
    - Conformed Dimensions will be identified that are applicable across multiple business processes.
    - Facts that are measures will be identified required in a particular business process along with its granularity.
- Detailed-Dimension Modeling:
    - High-Level dimension modeling will be done to identify dimensions and facts across all thought business processes.
    - Detailed-Level dimension modeling will be done on one simple and one complex business process. A simple business process is valid across a single subsidiary i.e. FudgeMart or FudgeFlix. While, a complex business process span across both subsidiary companies.
- ETL Implementation:

- Packages to extract data from data source will be designed in Visual Studio SSIS tool.
- Further, staging packages will be designed to store data in staging database.
- Afterwards, packages to load data into data warehouse will be designed.

- Designing of MOLAP Cubes:
  - After successful implementation of ETL process in SSIS, multi-dimensional online analytical processing cubes will be created in Visual Studio SSAS tool.
- Building PowerBI Dashboards:
  - Data will be fetched from ROLAP or MOLAP cube into PowerBI for developing visualizations for providing business insights.

Business Processes:

FudgeFlix simple:

1. Business Process: Subscription Service
Functional Requirement:
a. Identify customers with premium plan subscription
Dimensions: plans, account, billing, customers

FudgeMart simple:

1. Business Process: Product Review
Functional Requirement:
a. Identify best products based on customer rating and reviews
b. Identify valuable customers based on customers tweet reviews (rating + reviews)
Dimensions: Cast, Directors, Movie genre, tweets analysis,

Complex Processes:

A. Business Process: Sales
Functional Requirement:
a. Sales according to genre/department.
Dimensions: Product & Services, Date & Time, Locations

B. Business Process: Order Fulfilment
Functional Requirement:
a. Number of orders fulfilled over period of time (day, month etc.)
Dimensions: Order date, Shipped Date, Customer, Product

C. Business Process: Customer Geographical Diversity
Functional Requirement:
a. Customer diversity for more targeted marketing
b. Product popularity with respect to geographical locations
Dimensions: Zip Codes, City, State, Address, Products

Deliverables:

1. High-level dimensional modeling worksheet: This document will consist of a bus-matrix, attributes and metrics. Bus Matrix will showcase the dimensions and fact tables that are involved corresponding to the business processes. It will also consist of list of any issues faced.

2. Detail-level dimensional modeling worksheet: This document will consist of fully completed dimensions and fact table. It will identify the sources for source-to-target map. This document will also contain macros that will finally generate SQL code for schema of the data warehouse.

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

4. ETL implementation on SSIS: After successfully creating a data warehouse schema on SQL Server, packages will be built using Microsoft SSIS tools for extracting data from data source , staging it into stage database and then loading data into data warehouse.

5. Business Intelligence: MOLAP cubes will be generated using SSAS tool of Microsoft Visio. MOLAP/ROLAP cubes will be fetched into Microsoft PowerBI tool to generate dashboards for business insight

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Team:

Yash Kapadia: ETL Developer
Yash Bhansali: ETL Developer
Deepak Sharma: Business Intelligence Developer
Nitin Nagpal: Business Intelligence Reporter
Om Dhuru: Database Administrator

Communication:

- An initial team meeting will be convened to discuss the intervals of project status reporting.
- A team meeting will be conducted after completion of each milestone.

Approval of this Charter:

Michael Fudge:	**Date:04/029/19**
Humayun Khan:	**Date: 04/29/19**
Harsh Takrani:	**Date: 04/29/19**
Yash Kapadia:	**Date: 04/29/19**
Yash Bhansali:	**Date: 04/29/19**
Nitin Nagpal:	**Date: 04/29/19**
Deepak Sharma:	**Date: 04/29/19**
Om Dhuru:	**Date: 04/29**