High Level Design (HLD)

Food Sales Analysis

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Document Version Control

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25th Sept. 2021	1.0	First Version of HLD Complete	Richa Kumari
30th Sept. 2021	2.0	Second version of HLD complete	Meera Hari

Contents

Abstract

Sales management has gained importance to meet increasing competition and the need for improved methods of distribution to reduce cost and to increase profits. Sales management today is the most important function in a commercial and business enterprise.

Through this Food Sales Analysis project we have created a dashboard to analyze the sales trend yearly, monthly as well as quarterly.The dashboard also has provisions for user control to see the detailed figures of various products and their demand. Also, detailed analysis of customer purchase behavior is also shown through the dashboard. The analysis gives stake holders an idea about the overall sales across a span of 3 years, products that are sold more or less, and a general customer behavior.

1 Introduction

1.1 Why this High-Level Design Document?

The purpose of this High-Level Design (HLD) Document is to add the necessary detail to the current project description to represent a suitable model for coding. This document is also intended to help detect contradictions prior to coding, and can be used as a reference manual for how the modules interact at a high level.

The HLD will:

- Present all of the design aspects and define them in detail
- Describe the user interface being implemented
- Describe the hardware and software interfaces
- Describe the performance requirements
- Include design features and the architecture of the project •
- List and describe the non-functional attributes like:
  - Security
  - Reliability
  - Maintainability
  - Portability
  - Reusability
  - Application compatibility
  - Resource utilization
  - Serviceability

1.2 Scope

The HLD documentation presents the structure of the system, such as the database architecture, application architecture (layers), application flow (Navigation), and technology architecture. The HLD uses non-technical to mildly-technical terms which should be understandable to the administrators of the system.

2 General Description

2.1 Product Perspective & Problem Statement

The objective for this project is to design a Sales dashboard to analyze the sales based on various product categories. The company wants to add user control for product category, so users can select a category and can see the trend month-wise and product-wise accordingly. The Analytics team also wants to get a clear idea of the products that make profit or loss and also showcase the consumer behavior.

2.2 Tools used

- SQL – for Data cleaning and Data Validation
- Power BI – for Data Visualization

3 Design Details

3.1 Functional Architecture

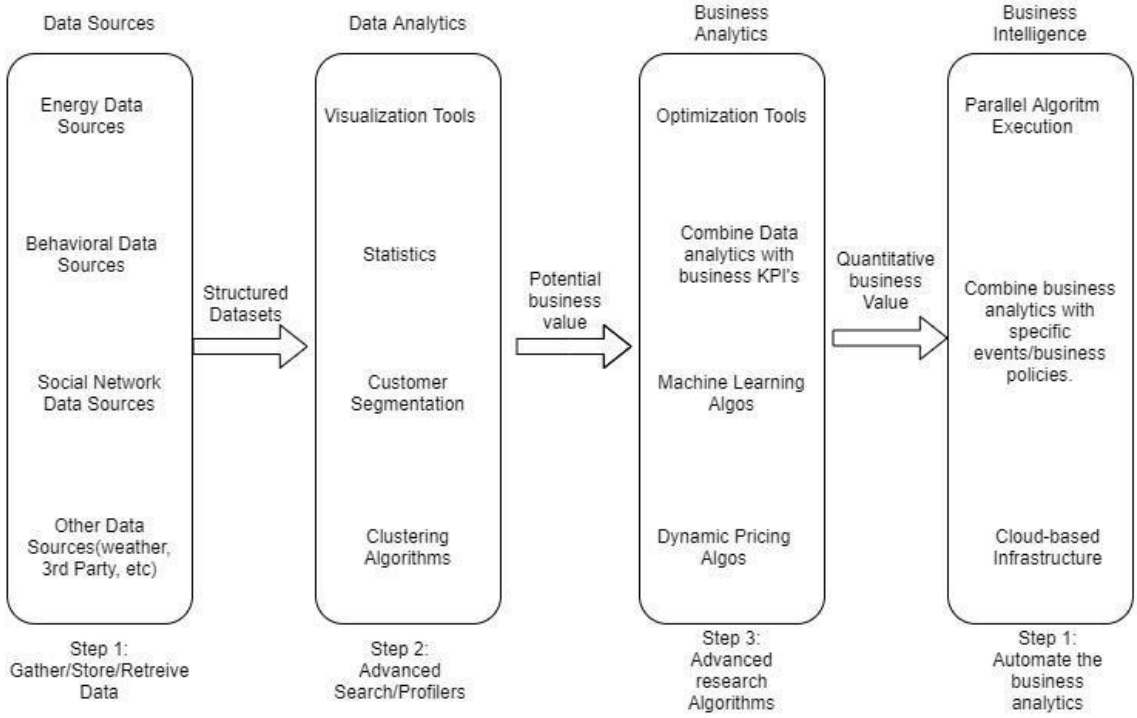
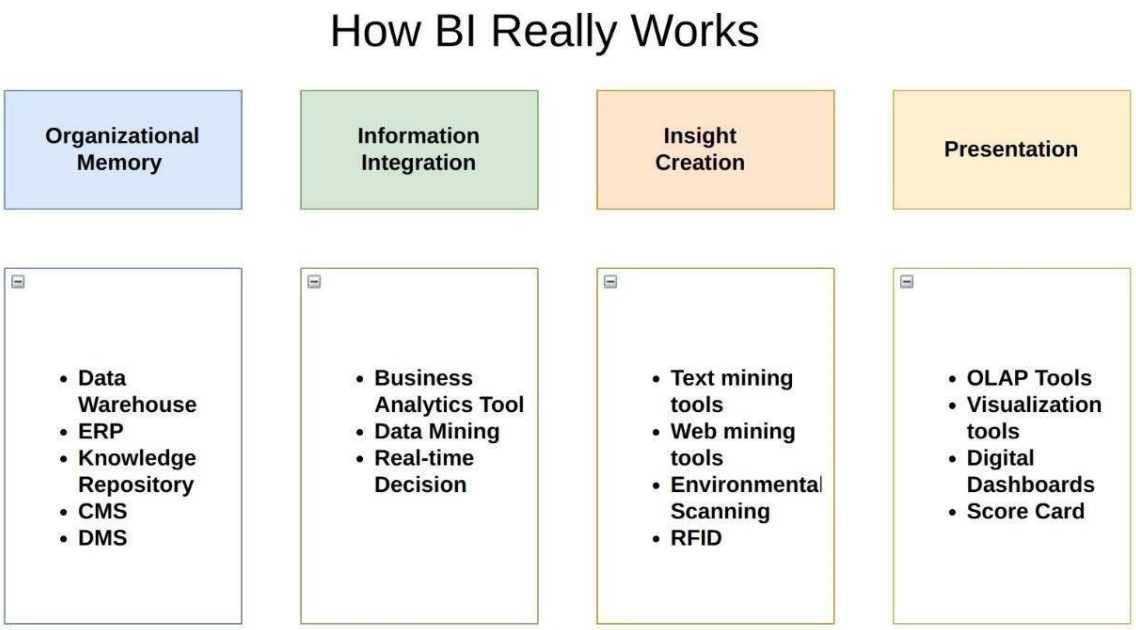


Figure 1: Functional Architecture of Business Intelligence



3.2 Optimization

Your data strategy drives performance

- Minimize the number of fields
- Minimize the number of unwanted records or null values
- Removing outliers
- Formation of separate measures table for accelerated checking
- Use of navigation for smooth and cleaner representation of Data across multiple pages on the Dashboard
- Formation of Calendar table for achieving a continuous time series analysis
- Validation for accuracy.

4 KPIs

As and when, the system starts to capture the historical/periodic data for a user, the dashboards will be included to display charts over time with progress on various indicators or factors

4.1 KPIs (Key Performance Indicators)

Key indicators displaying a summary of the Sales and its relationship with different metrics

1. Year till Date Sales
2. Month till date sales
3. Quarter till date sales
4. Profit and loss making products
5. Products with highest sales quantity

5 Deployment

Prioritizing data and analytics couldn't come at a better time. Your company, no matter what size, is already collecting data and most likely analyzing just a portion of it to solve business problems, gain competitive advantages, and drive enterprise transformation. With the explosive growth of enterprise data, database technologies and the high demand for analytical skills, today's most effective IT organizations have shifted their focus to enabling self-service by deploying and operating Excel at scale, as well as organizing, orchestrating, and unifying disparate sources of data for business users and experts alike to author and consume content. Depending on your organizational roles and responsibilities, The Data & Analytics Survey, completed by business teams, identifies and prioritizes data use cases, audience size, and users.

In this case of Food Sales Analysis also data has already been collected by the company. The role of the Data Analytics team is to interpret the data and get the best insights to help the stake holders take valuable decisions. Considering this, we have analyzed and cleaned the data using Microsoft SQL server.

The cleaned data has been imported to the visualization BI tool Power BI, where the interpretation of data has been done using various DAX formulas and visual charts.

The interpreted data has been arranged properly and visually for the stakeholders to arrive at decisions.

The data has been validated using queries on Microsoft SQL server, for better accuracy.