

High Level Design (HLD)

Ecommerce Dashboard

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Abstract

The E-commerce (electronic commerce) company is the buying and selling of goods and services. These business transactions occur either as business-to-business (B2B), business-to-consumer (B2C), consumer-to-consumer or consumer-to-business.

With this dashboard we can analyze the sales and profit based on various product categories with respect to geographic location. Also, the analytics team has provided the user control to see the detailed figures of various categories and trend with respect to month. The analysis gives stake holders idea to build the strategy for upcoming days which will definitely give benefits to in terms of profit and sales.

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 create a histogram to analyze number of shipping days.

2.2 Tools used

- Excel



3 Design Details

3.1 Functional Architecture

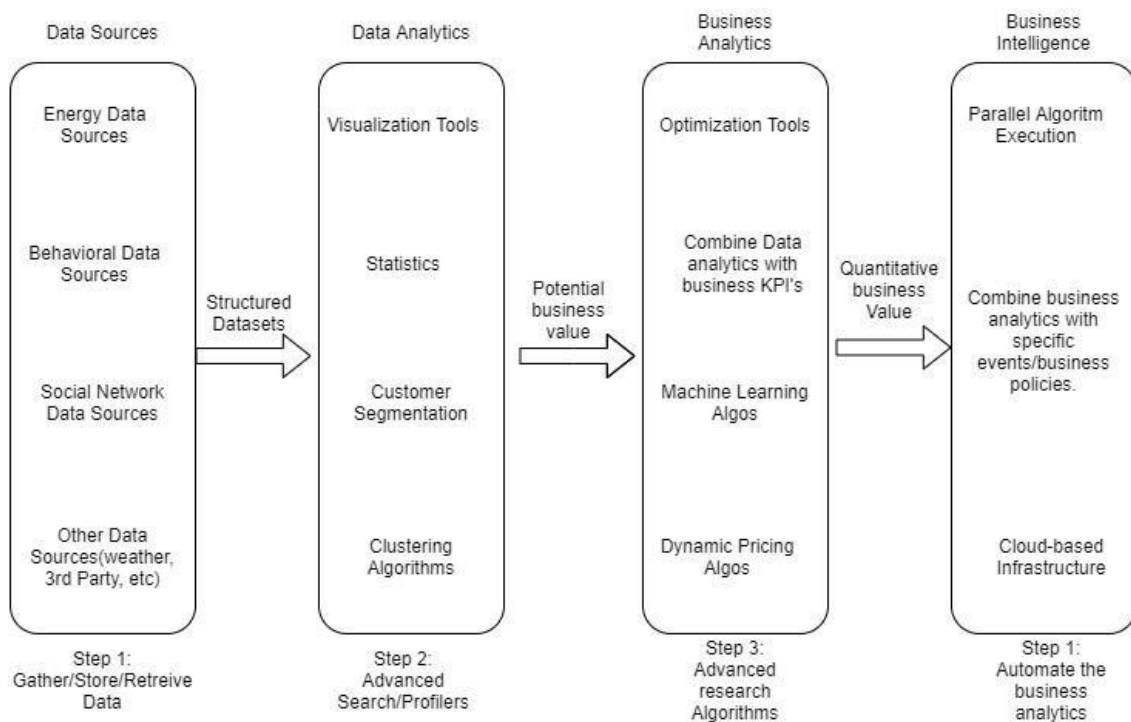
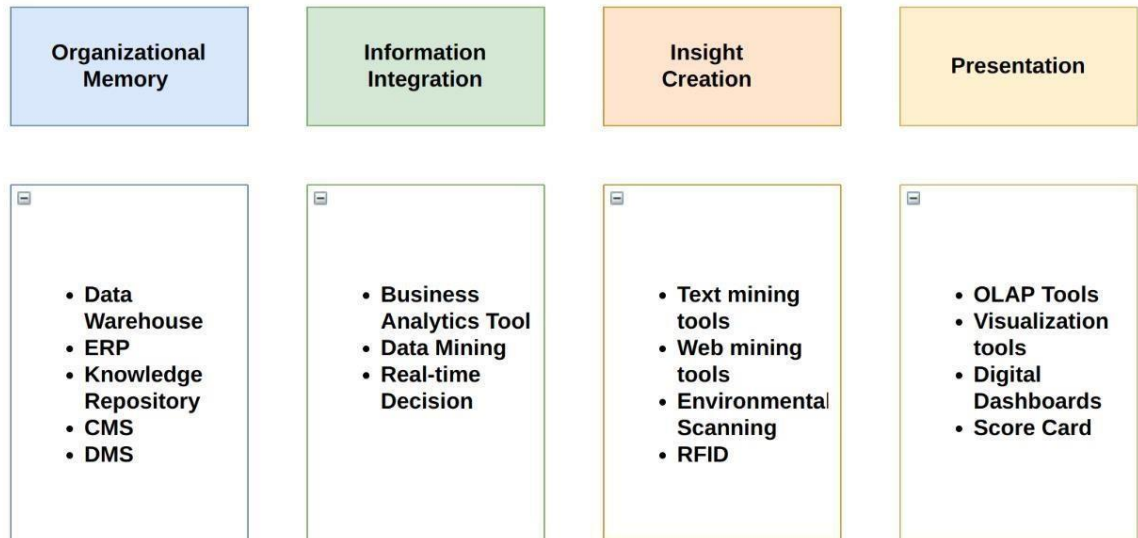


Figure 1: Functional Architecture of Business Intelligence

How BI Really Works



3.2 Optimization

Your data strategy drives performance

- Always use automatic calculation mode so that excel can automatically calculate change in values when you open workbook.
- Minimize used range.
- Minimize the number of fields.
- We can use structured table reference which automatically expand and contract as size of referenced increased or decreased.
- Minimize the number of records.

Optimize calculations and Data:

- Workbooks using large numbers of full column references and multiple worksheets (for example `=COUNTIF(Salesdata!G:G,Calculations!L10)`) might use large amounts of memory and CPU when opened or when rows were deleted.
- Excel's VLOOKUP, HLOOKUP, and MATCH for exact match on unsorted data is much faster than ever before when looking up multiple columns (or rows with HLOOKUP) from the same table range.
- Avoid inter-workbook links when it is possible; they can be slow, easily broken, and not always easy to find and fix. Using fewer larger workbooks is usually, but not always, better than using many smaller workbooks. Some exceptions to this might be when you have many front-end calculations that are so rarely

recalculated that it makes sense to put them in a separate workbook, or when you have insufficient RAM.

- Minimize used range, sometimes various editing and formatting operations extend the used range significantly beyond the range that you would currently consider used. This can cause performance obstructions and file-size obstructions.
- The OFFSET function is also fast; however, it is a volatile function, and it sometimes significantly increases the time taken to process the calculation chain.
- Use IFERROR function for unsorted data with missing values.
- Prioritize multiple-condition SUMIFS, COUNTIFS, and other IFS family functions.
- Avoid using custom VBA formulas, especially when they are being used to compute sets of data based on cell colors or other non-standard attributes. Extant VBA formulas, however, when used properly can create specific macros that enhance calculation speed or turn off pivot table calculations during updates.
- You can also return many cells from one lookup operation. To look up several contiguous columns, you can use the INDEX function in an array formula to return multiple columns at once (use 0 as the column number). You can also use the INDEX function to return multiple rows at one time.
- Use the SUMIFS, COUNTIFS, and AVERAGEIFS functions instead of array formulas where you can because they are much faster to calculate.
- Try to reduce the number of nested calculations.

4 KPIs

Dashboards will be implemented to display and indicate certain KPIs and relevant indicators for the disease.



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. Customer Conversion Rate
2. Customer Retention Rate
3. Gross Profit
4. Product relationship
5. Top Customers

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.